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PESTICIDE USAGE IN NORTHERN IRELAND
SURVEY REPORT 246

NORTHERN IRELAND VEGETABLE CROPS 2011

A National Statistics Publication

PESTICIDE USAGE SURVEY REPORT 246

NORTHERN IRELAND
VEGETABLE CROPS

2011

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Department of Agriculture & Rural Development for Northern Ireland

ISBN 978-1-84807-309-8

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SUMMARY

This is the sixth survey of pesticide usage on outdoor vegetable crops in Northern Ireland, providing comparative data to that obtained in the previous surveys in 1991, (Jess *et al*., 1993), 1995 (Kidd *et al*., 1998), 1999 (Kearns *et al*., 2002), 2004 (Kearns *et al*., 2005) and 2007 (Withers *et al*., 2009). Information on all aspects of pesticide usage was collected from 61 holdings throughout the province. Quantitative data have been adjusted to provide estimates of total pesticide usage.

The majority of vegetable crops grown in Northern Ireland is related to market influences and is grown under contract. In 2011 an estimated 1,567 hectares was grown, which represented an 18% decrease compared with 2007. There was a 35% decrease in the area of leafy and flowerhead brassica crops grown, despite a significant increase of 54% in the area of cauliflower grown. The area of turnip and swede grown increased by 13% when compared with 2007. The area of carrot and parsnip crops grown decreased by 19% and 10%, respectively. The total area of celery crops decreased by 24% when compared to 2007. However, the area of lettuce crops grown during this period more than doubled.

Fungicides, applied to 26% of the pesticide-treated area, accounted for 21% of the weight of pesticides applied. Herbicides and desiccants accounted for 38% of the pesticide-treated area and 62% of the total weight of pesticides used. Insecticides, applied to 27% of the pesticide-treated area, accounted for 15% of the total weight of pesticides used. Seed treatments applied to vegetable crops accounted for 8% of the pesticide-treated area, representing less than 1% of the weight of active substances applied. Molluscicides accounted for 1% of the total pesticide-treated area and less than 1% of the weight of pesticides applied to vegetable crops. Growth regulators accounted for less than 1% of the pesticide-treated area and 1% of the weight of pesticides applied.

By comparison with 2007, the pesticide-treated area decreased by 2%, to 13,617 spray hectares (including 21.32 spha of adjuvants), while the weight of pesticide active substances applied decreased by 14% to 7,289kg (including 2.89kg of adjuvants). The average number of spray applications (2.5) remained similar to that recorded in 2007, 2004 and 1999. The fungicide-treated area decreased by 8%, while the weight of fungicide active ingredients decreased by 27%. Overall, the application area of herbicides and desiccants applied increased by 6%, however the weight applied decreased by 21%. The insecticide-treated area decreased by 10%, however the weight of insecticide active substances applied increased by 89%. This was due to

applications of garlic extract to turnip and swede crops for cabbage root fly and turnip fly. The application of azomethine and chloronicotinyl insecticides, principally to brassicas, increased. Two groups of insecticides, carbazate and ketonole, were applied for the first time. Insecticides were most frequently applied to control aphids, principally on leafy and flowerhead brassica crops. However, they were frequently also used to control carrot fly (*Psila rosae*) on carrot and parsnip crops. The area treated with molluscicides decreased by 13% and the weight applied increased by 3%. An estimated 1,121 hectares of vegetable crops were sown with treated seed. This was an 8% increase compared to 2007. This was mainly due to an increased use of carrot and parsnip treated seed. However, due to a reduction in the use of leafy and flowerhead brassica treated seed, the weight of seed treatment active substances decreased by 77%. Growth regulators were applied for the first time, exclusively to parsnip crops to delay flowering.

Leafy and flowerhead brassica crops received 33% of the weight of fungicides applied to all vegetable crops, representing 39% of the area of vegetable crops treated with fungicides. The single most commonly used fungicide active substance applied to this crop was difenoconazole. This was mostly for general fungal control. Carrot and parsnip crops collectively accounted for 41% of the weight of fungicide active substances applied, representing 39% of the area treated with fungicides. The single active ingredient metalaxyl-M was the most frequently applied fungicide, mainly for cavity spot and general fungal control.

Herbicide applications to carrot crops represented 33% of the herbicide-treated area and 30% of the weight of herbicides applied. Leafy and flowerhead brassicas accounted for 22% of the herbicide-treated area and 28% of the weight of herbicides applied. Linuron was the herbicide active ingredient most frequently applied to vegetable crops, particularly to carrot crops for general weed control. Metazachlor and glyphosate (during ground preparation) were also frequently applied, principally to leafy and flowerhead brassicas.

Carrot and parsnip crops collectively accounted for 46% of the insecticide-treated area, representing 22% of the weight of insecticide active substances applied. Leafy and flowerhead brassicas accounted for 38% and 31% of the insecticide-treated area and weight applied, respectively. Due to the use of garlic extract, turnips and swedes represented 10% of the insecticide-treated area and 43% of the weight of pesticides applied. Pyrethroids were the most frequently used insecticide active substances, particularly lambda-cyhalothrin on carrot and parsnip crops.

Applications of the molluscicide ferric phosphate to lettuce crops for slug control, represented 50% of the molluscicide-treated area and 55% of the weight of molluscicides applied. Methiocarb, applied to turnip and swede crops also for slug control, accounted for 47% of the molluscicide-treated area and 42% of the weight of molluscicides applied.

The pyrethroid insecticide tefluthrin was the most frequently applied seed treatment, accounting for 38% of the area sown with treated seed and 56% of the weight of seed treatments applied. An estimated 39% of all seed treatments were applied to carrot crops, 20% to turnip and swede crops and 15% to parsnip crops.

DEFINITIONS AND NOTES

- 'Basic area': refers to the actual planted area of crop, which was treated with a given pesticide.
- 'Treated area': refers to the total area treated with a pesticide, which includes all repeated applications to the basic area.
- 'Reasons for use': the reasons reported for the use of pesticides are the growers stated reason for use and may sometimes be inappropriate.
- 'Rounding': due to rounding of figures, there may be slight differences in totals both within and between tables.
- 'Propagation': pesticides applied at the propagation stage are normally applied when the plants are indoors and in trays. This should be taken into account when comparing area grown and pesticide-treated area.
- 'Brassica': refers to Brussels sprouts, calabrese, cauliflower and all cabbage.
- 'Hard cabbage': refers to cabbage used for coleslaw, the majority of which is classified as summer cabbage for comparison purposes.
- 'Organic crops': This data has already been included in the tables and is a guide to the area of organic vegetable crops that were produced during 2011.

INTRODUCTION

As a participant of the UK Working Party on Pesticide Usage Surveys, the Agri-Food Bioscience Institute (AFBINI) on behalf of the Department of Agriculture and Rural Development for Northern Ireland (DARD), conducts a programme of surveys to examine pesticide usage in all sectors of the agricultural and horticultural industry. Principally, the data collected provides information for consideration by the Advisory Committee on Pesticides. In addition, the information may be used by those involved in residue testing, for public information and to evaluate the impact of policy and trends in pesticide usage.

This is the sixth survey examining pesticide usage practices on vegetable crops grown in Northern Ireland. Summary results from the previous surveys conducted in 1991 (Jess *et al*., 1993), 1995 (Kidd *et al*., 1998), 1999 (Kearns *et al*., 2002) and 2004 (Kearns *et al*., 2005) and 2007 (Withers *et al*., 2009) are included in the report for comparative purposes.

A list of published Northern Ireland Pesticide Usage Survey reports is included in Appendix 1.

METHODS

The sample of holdings to be surveyed was selected from each of the six counties, on the basis of the total area of vegetable crops grown, using data from the Northern Ireland Agricultural Census, June 2010 (Anon., 2010). However, due to sampling procedures and the distribution of vegetable production in Northern Ireland, no holdings were selected from County Fermanagh.

The sample was stratified into four size groups, according to the total area of vegetable crops grown in each region. Holdings were selected at random within each of the size groups and the number of holdings selected was proportional to the total area of vegetable crops grown.

The purpose of the survey was explained to the occupiers of selected holdings in preliminary correspondence. A total of 61 holdings was visited during the period January 2012 to April 2012 and data collected by personal interview. The data collected included; the area of crops grown, area treated, target crop, pesticide used and number of treatments applied. The grower's stated reasons for pesticide use were also included but may not always seem appropriate. Holdings selected in the original sample unable to provide data were replaced with those from the same county and size group held on a reserve list. The total number of farms in each size

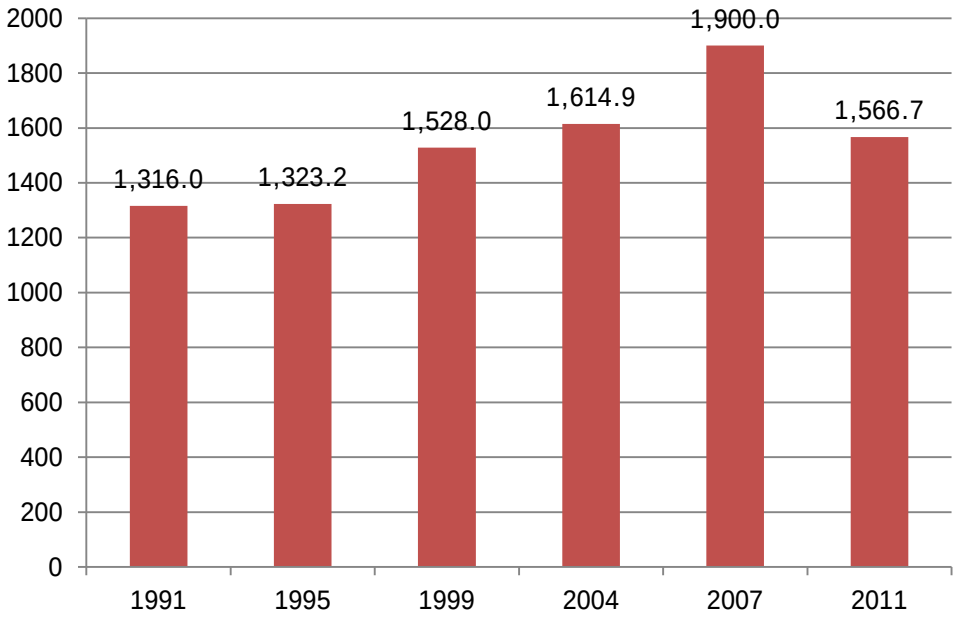
group and the number of farms sampled are shown in Table 1. The collected data were entered using Oracle, a relational database programme. Validated data were downloaded for analysis using SPSS software.

CROPS

The number and areas of crops surveyed are shown in Table 2. Data from 61 farms provided information on 378 examples of 31 crop types (including one group of organic crops). Crops included, Brussels sprout, cabbage, cauliflower, calabrese, turnip and swede, bean, pea, table leek, soup leek, bulb onion, scallion (spring onion), carrot, parsnip, soup celery, table celery, parsley, lettuce, beetroot and celeriac. The total area of crops sampled in the survey was representative of the area of vegetable crops grown in Northern Ireland in 2011.

Leafy and flowerhead brassica were grown on an estimated 31% of the total area of vegetable crops grown. Savoy cabbage and broccoli/calabrese accounted for 25% and 20% of the area of leafy and flowerhead brassica grown respectively. Carrot and parsnip collectively represented 33% of the vegetable growing area, while turnip/swede accounted for 16% of the total area grown. Alliums including leek, scallion and bulb onion, collectively accounted for 10% of the total area of outdoor vegetable crops grown in Northern Ireland in 2011 (Table 3, Figure 2).

Figure 1: Comparison of the areas of vegetable crops grown in Northern Ireland (ha), 1991 – 2011.



REGIONAL PESTICIDE USAGE (Table 4, Figure 3)

County Down was the largest producer of vegetable crops in Northern Ireland during 2011, accounting for 71% of the area of vegetables grown and 79% of the total pesticide-treated area. Overall, 74% of herbicides, 83% of fungicides and insecticides, 48% of molluscicides and 73% of seed treatments were applied to vegetables in this county. County Armagh accounted for 13% of

the pesticide-treated area (18% of the area of vegetables grown), County Londonderry 5% (4%), County Antrim 2% (4%) and County Tyrone 1% (3%).

Figure 2: Regional distribution of vegetable crops grown in Northern Ireland (ha), 2011.

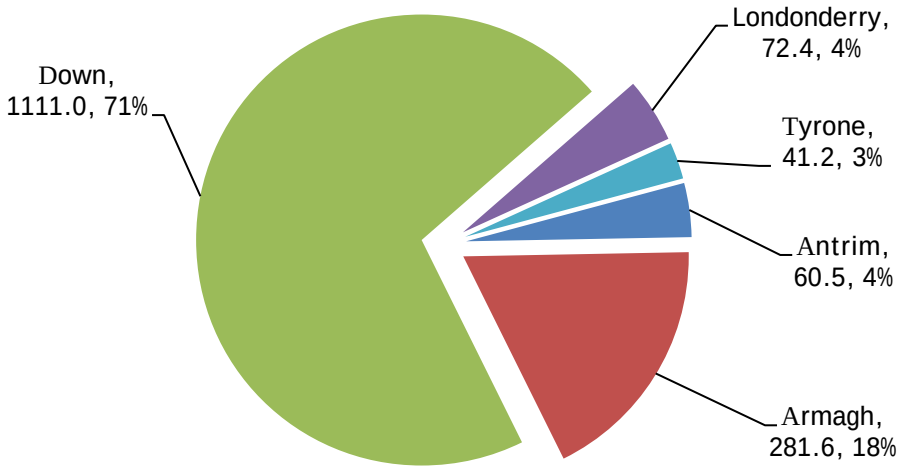


Figure 3: Regional distribution of individual vegetable crops grown in Northern Ireland (ha), 2011.

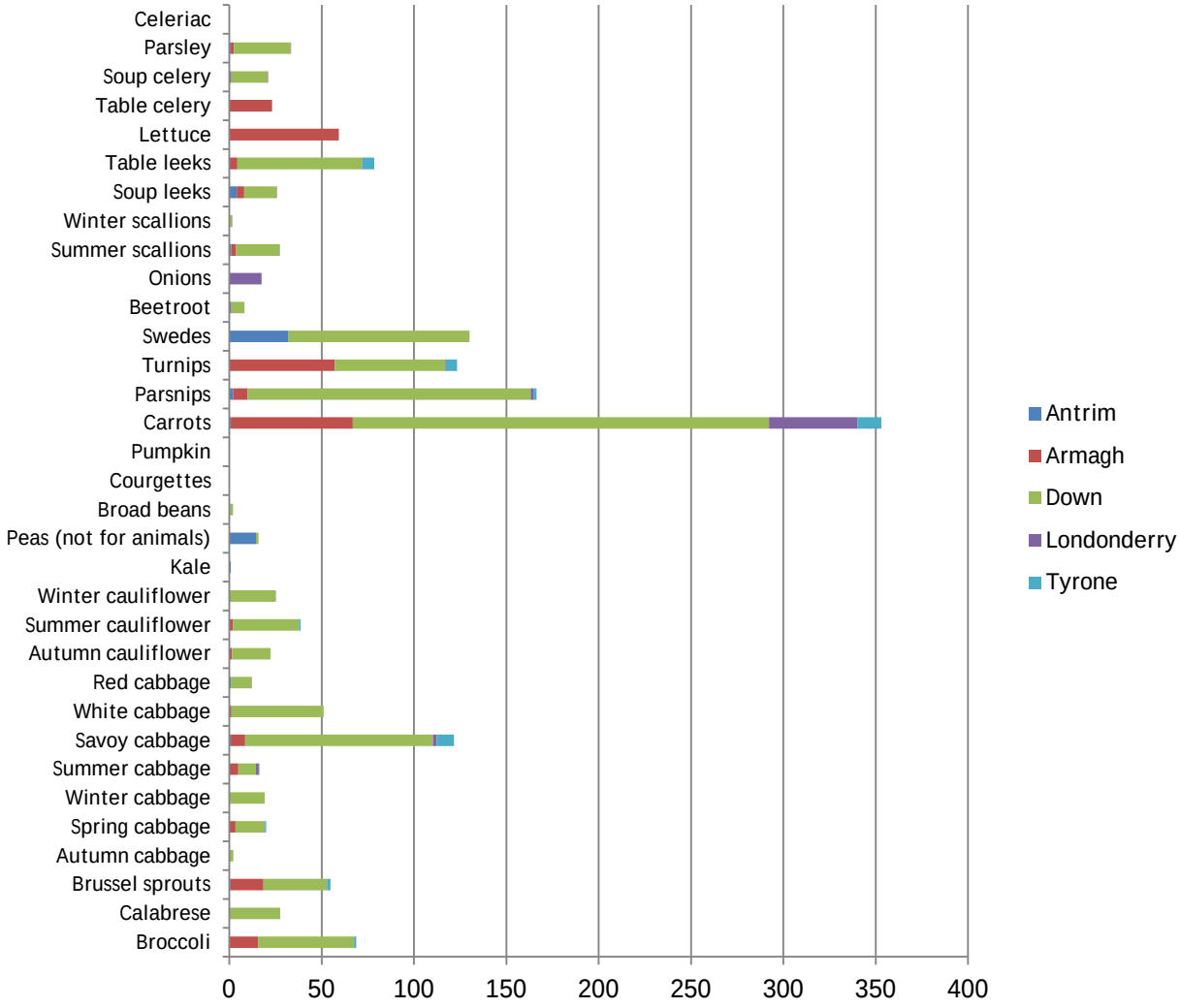


Figure 4: Comparison of the areas of leafy and flowerhead brassica crops grown in Northern Ireland (ha), 1991 – 2011.

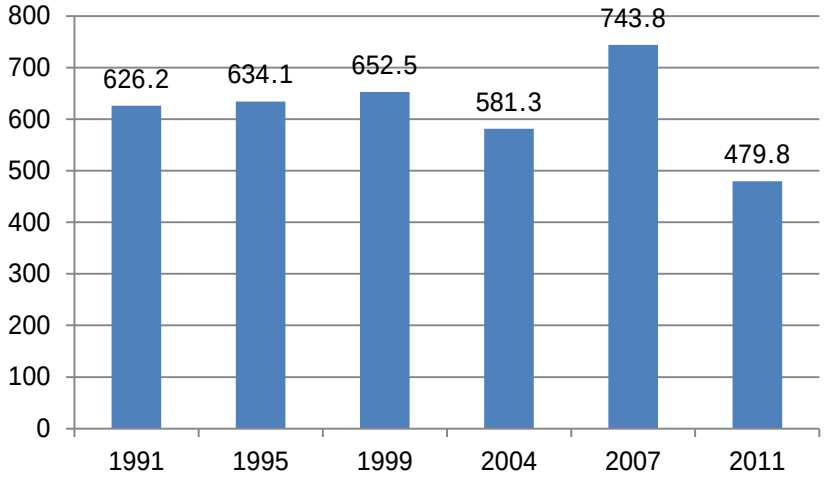


Figure 5: Regional distribution of leafy and flowerhead brassica crops grown in Northern Ireland (ha), 2010.

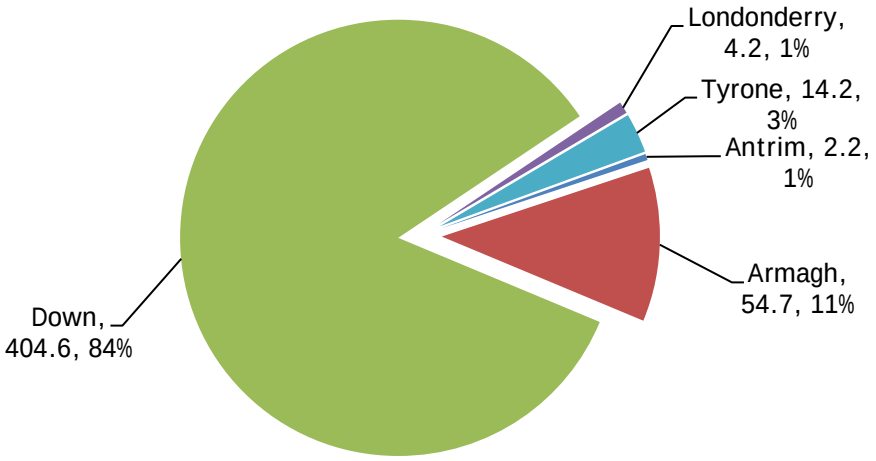


Figure 6: Comparison of the areas of allium crops grown in Northern Ireland (ha), 1991 – 2011.

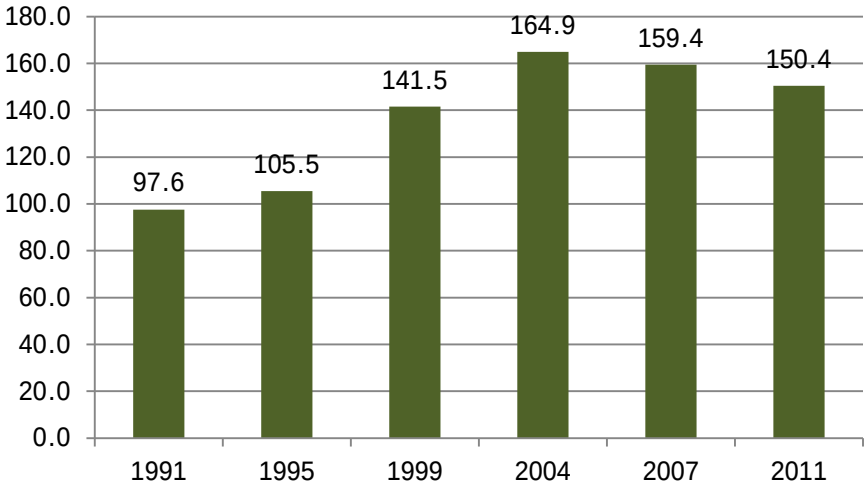
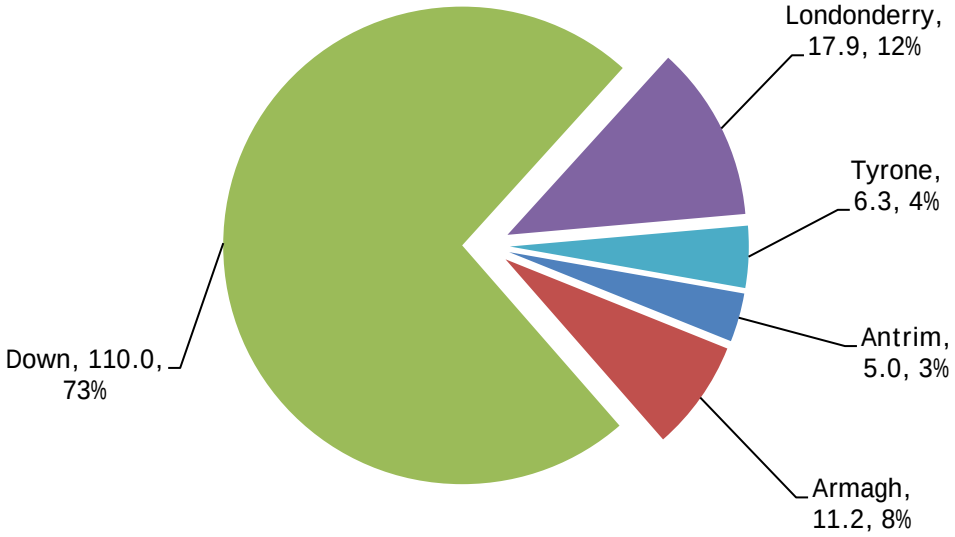


Figure 7: Regional distribution of allium crops grown in Northern Ireland (ha), 2010.



Pesticide Usage

Figure 8: Comparison of the areas of vegetable crops treated in Northern Ireland (spha), 1991 - 2011.

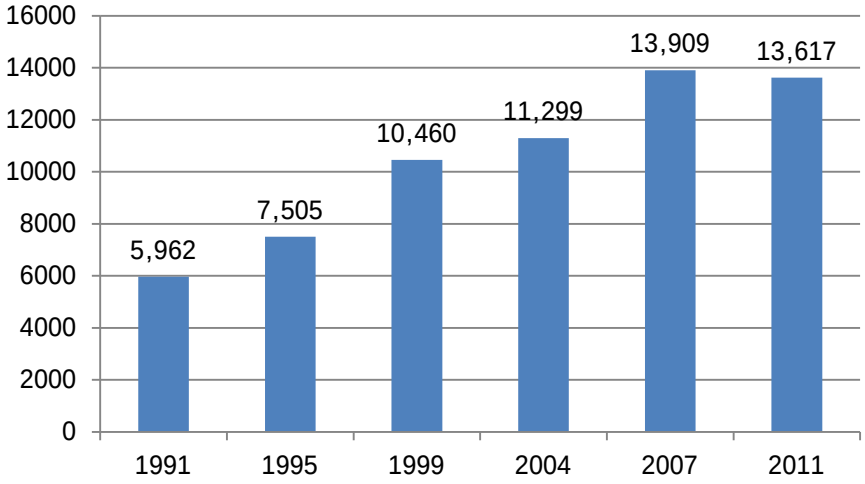


Figure 9: Pesticide usage on vegetable crops in Northern Ireland (spha), 2011.

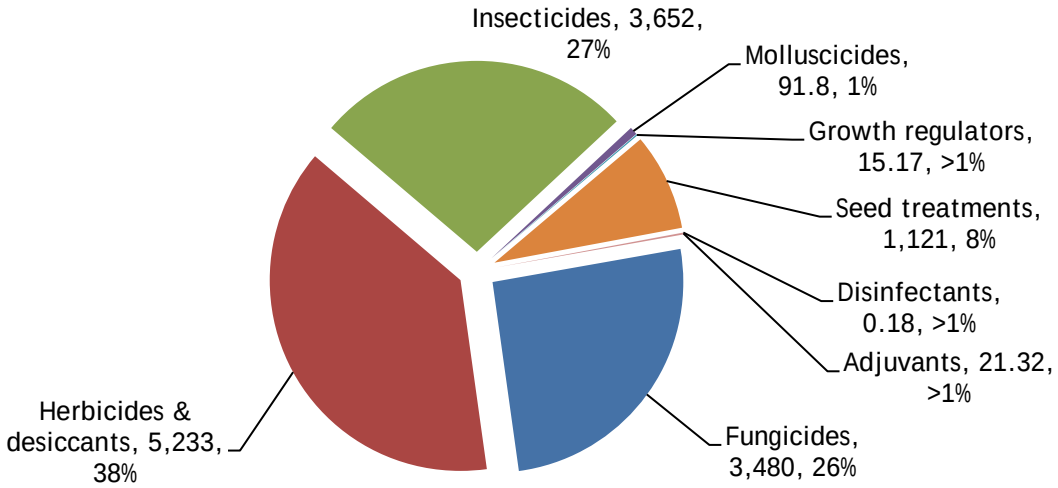


Figure 10: Comparison of the weight of pesticides applied to vegetable crops in Northern Ireland (kg), 1991 - 2011.

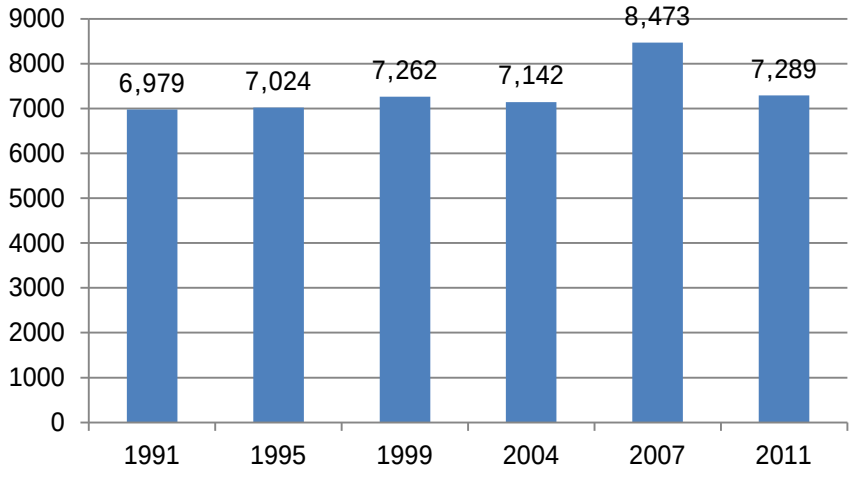


Figure 11: Weight of pesticides applied to vegetable crops in Northern Ireland (kg), 2011.

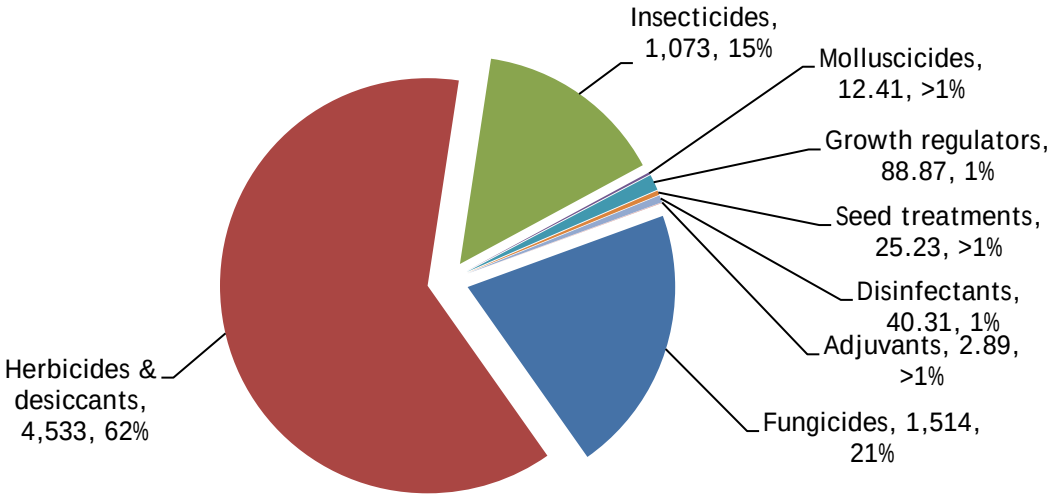


Figure 12: Area of vegetable crops treated with each pesticide type in Northern Ireland (spha), 2011, by region

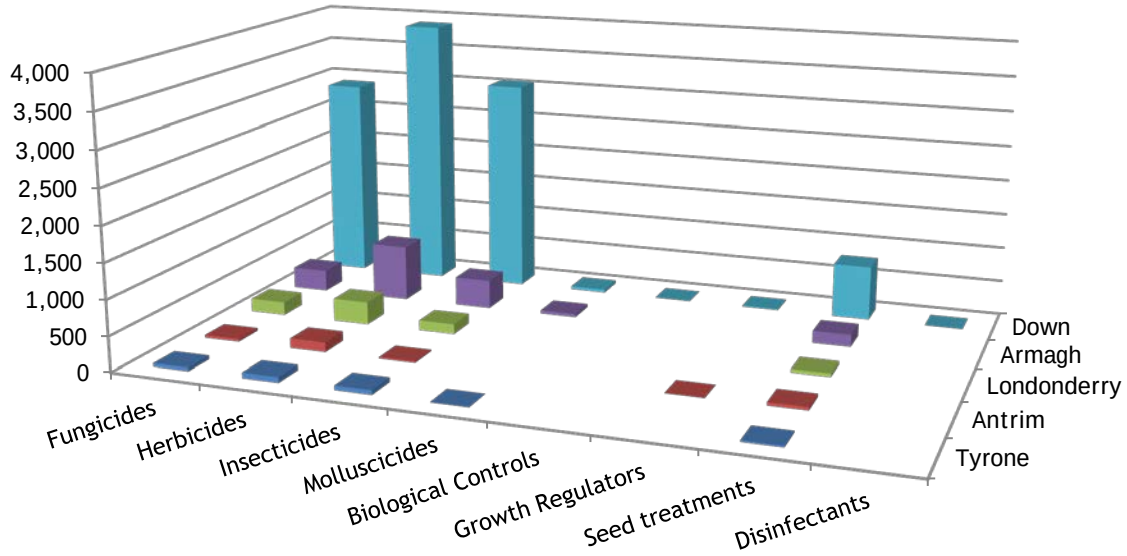


Figure 13: Weight of each pesticide type applied to vegetable crops in Northern Ireland (kg), 2011, by region

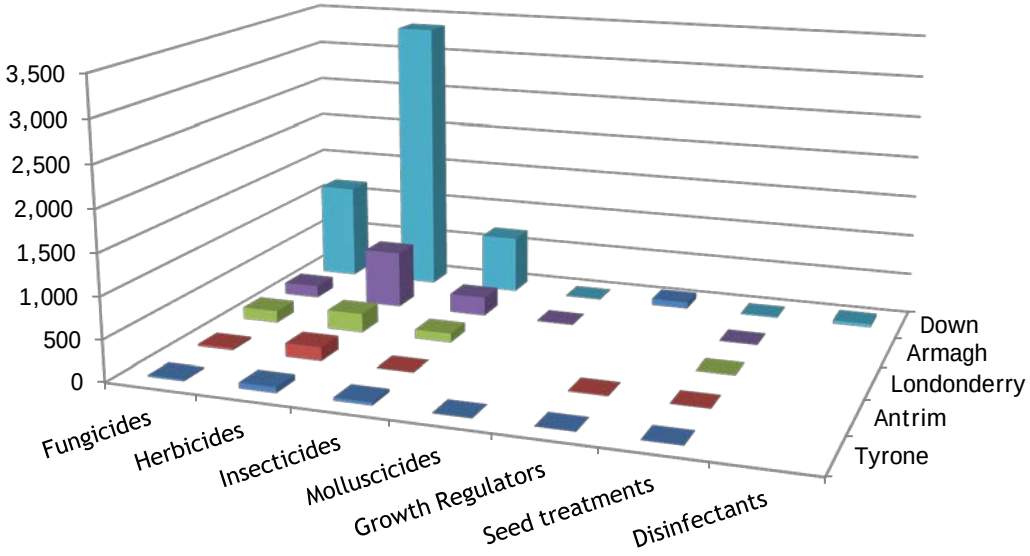


Figure 14: Comparison of the areas of vegetable crops treated with fungicides in Northern Ireland (spha), 1991 - 2011.

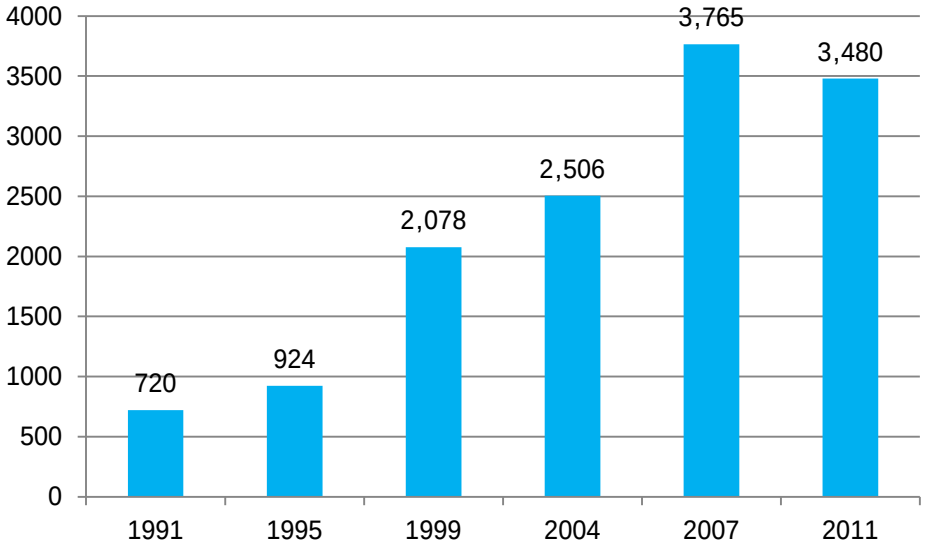


Figure 15: Comparison of the weight of fungicides applied to vegetable crops in Northern Ireland (kg), 1991 - 2011.

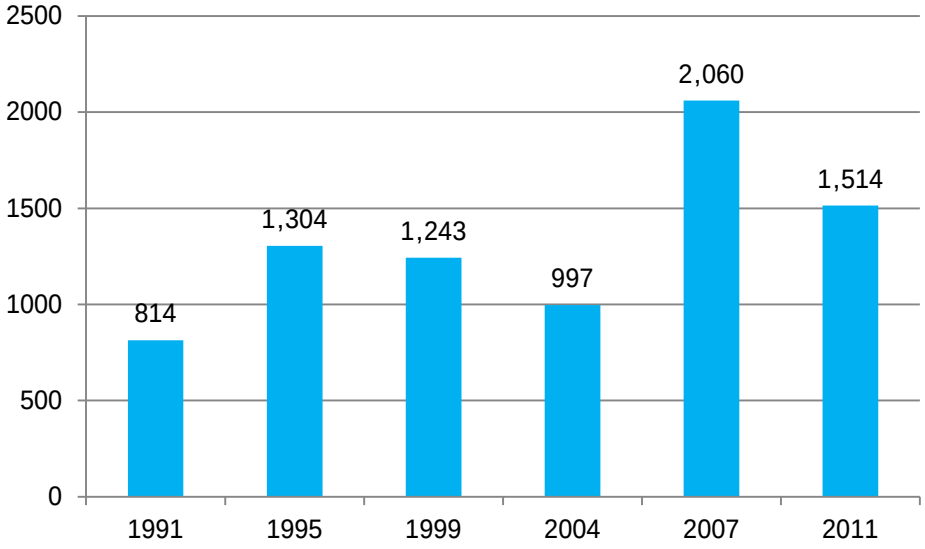


Figure 16: Comparison of the areas of vegetable crops treated with herbicides & desiccants in Northern Ireland (spha), 1991 - 2011.

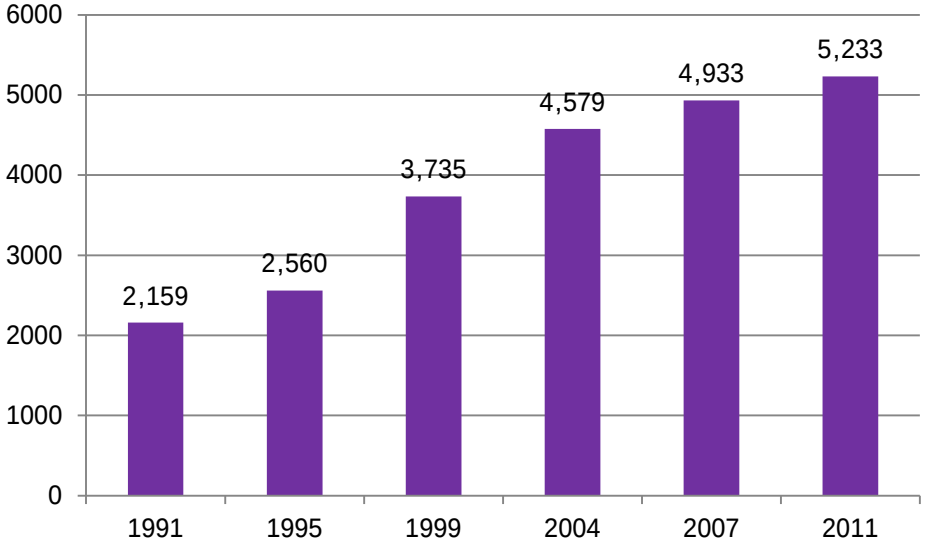


Figure 17: Comparison of the weight of herbicides & desiccants applied to vegetable crops in Northern Ireland (kg), 1991 - 2011.

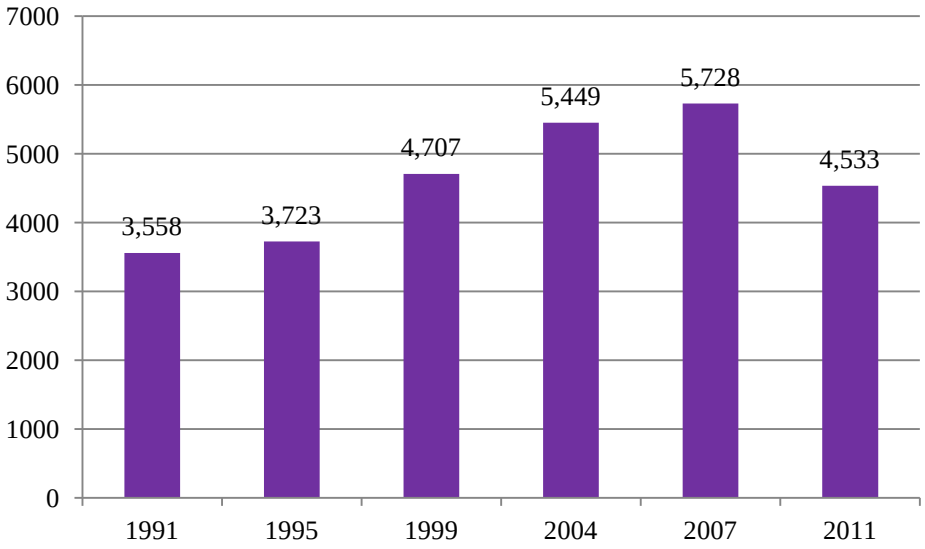


Figure 18: Comparison of the areas of vegetable crops treated with insecticides in Northern Ireland (spha), 1991 - 2011.

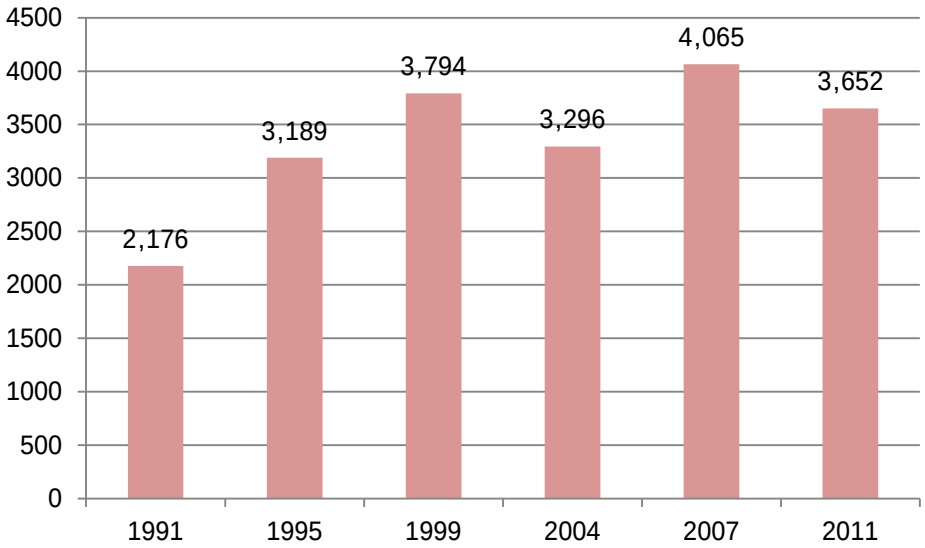


Figure 19: Comparison of the weight of insecticides applied to vegetable crops in Northern Ireland (kg), 1991 - 2011.

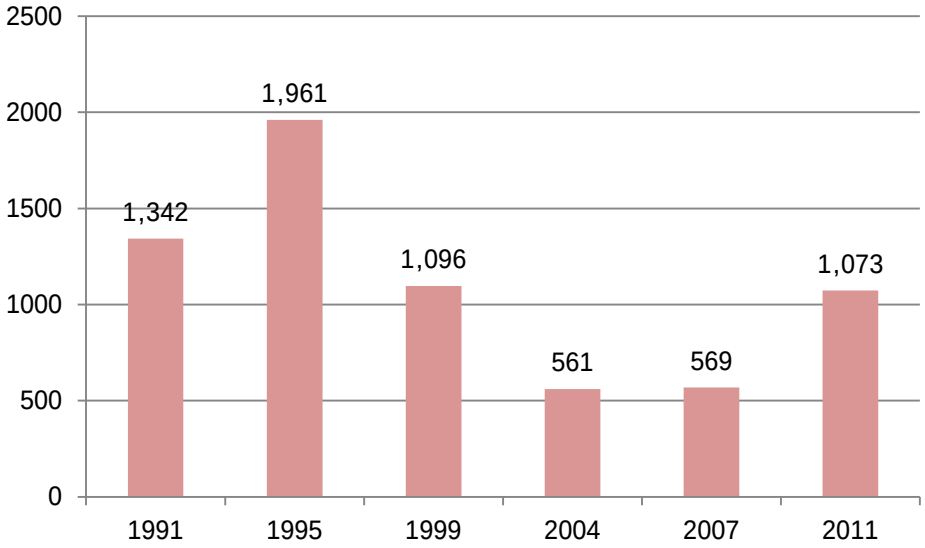


Figure 20: Comparison of the areas of vegetable crops treated with molluscicides in Northern Ireland (spha), 1991 - 2011.

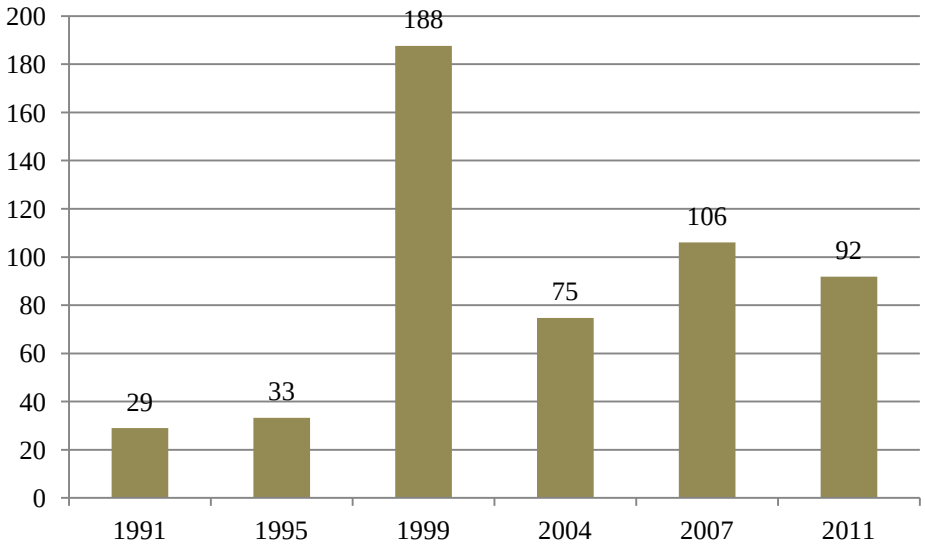


Figure 21: Comparison of the weight of molluscicides applied to vegetable crops in Northern Ireland (kg), 1991 - 2011.

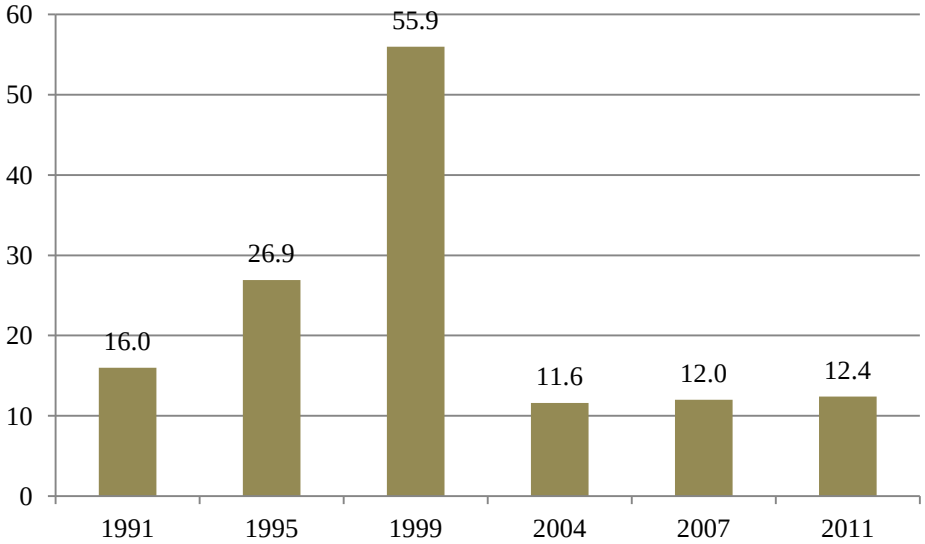


Figure 22: Comparison of the areas of vegetable crops sown with treated seed in Northern Ireland (ha), 1991 - 2011.

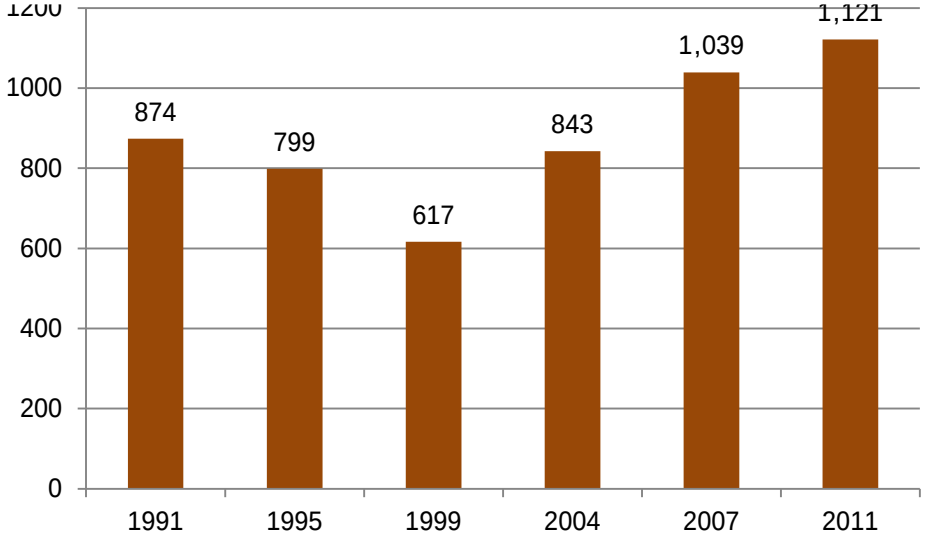
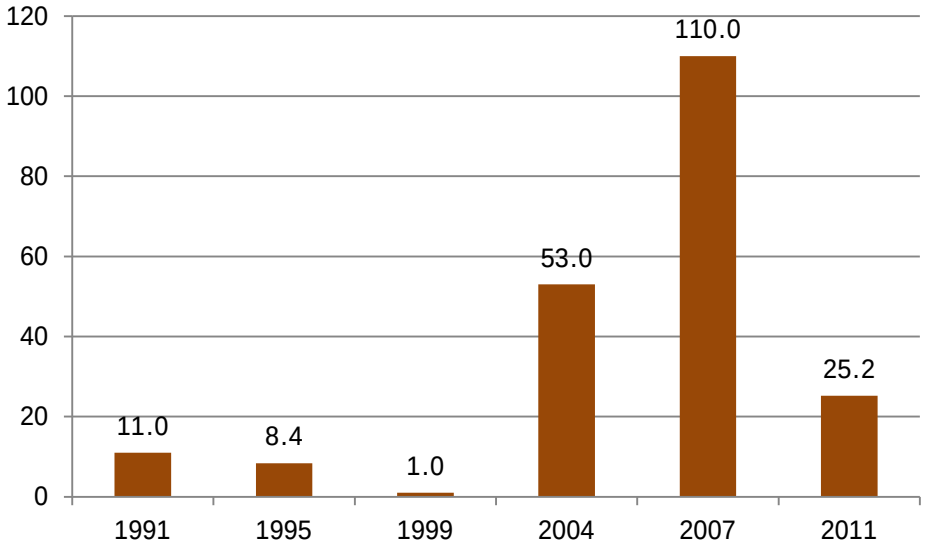
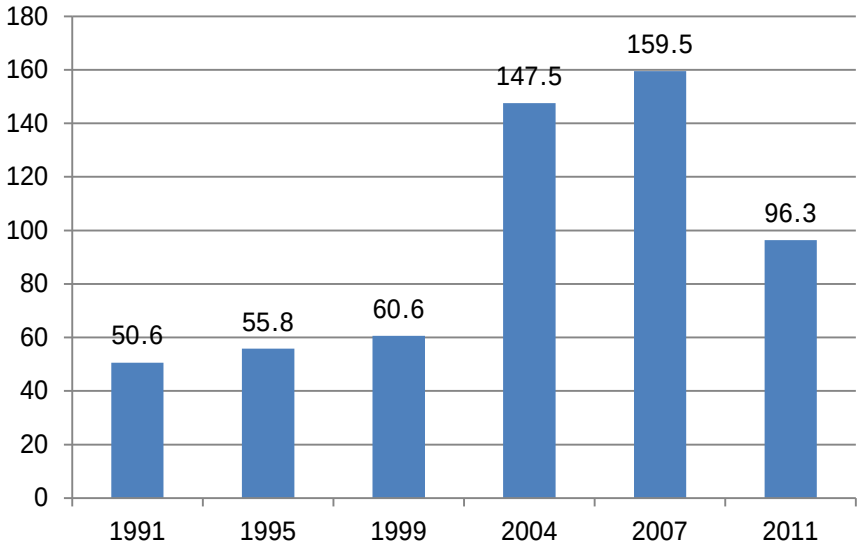


Figure 23: Comparison of the weight of seed treatments applied to vegetable crops in Northern Ireland (kg), 1991 - 2011.



Broccoli & calabrese crops

Figure 24: Comparison of the area of broccoli & calabrese crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on broccoli & calabrese crops:

96.32 hectares of broccoli & calabrese crops grown in Northern Ireland

763.18 treated hectares

439.87kg applied

100% of crops received at least one treatment

Broccoli & calabrese crops received on average 3.6 fungicide, 2.4 herbicide, 2.5 insecticide, 1.0 and 1.0 biological control applications.

Figure 25: Regional distribution of broccoli & calabrese crops grown in Northern Ireland (ha), 1991 - 2011.

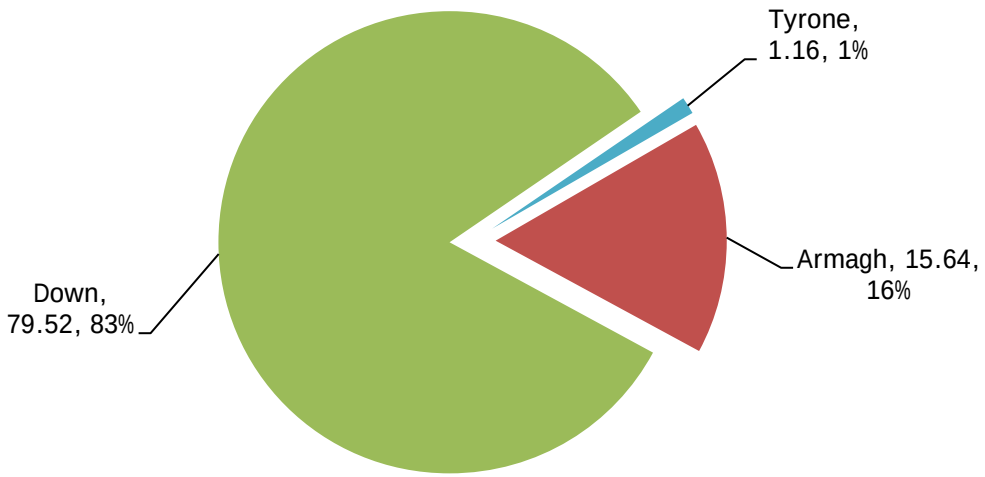


Figure 26: Pesticide usage on broccoli & calabrese crops in Northern Ireland (spha), 2011.

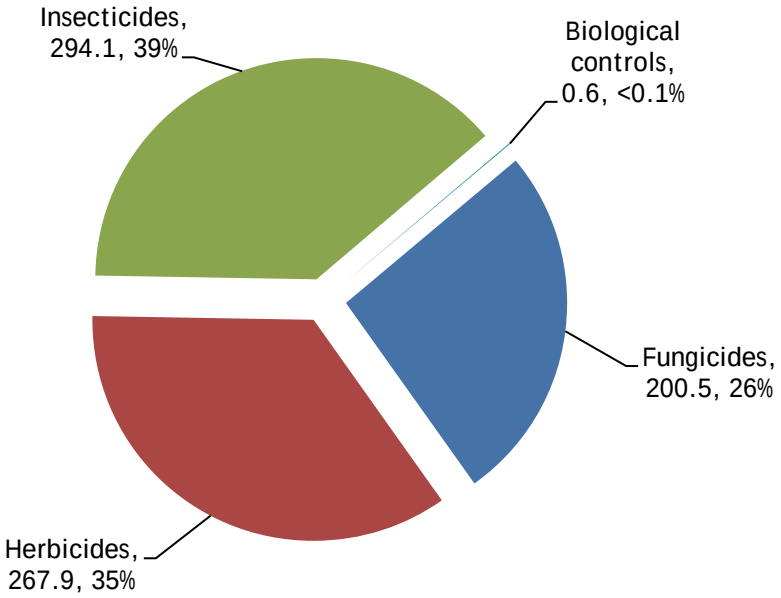


Figure 27: Weight of pesticides applied to broccoli & calabrese crops in Northern Ireland (kg), 2011.

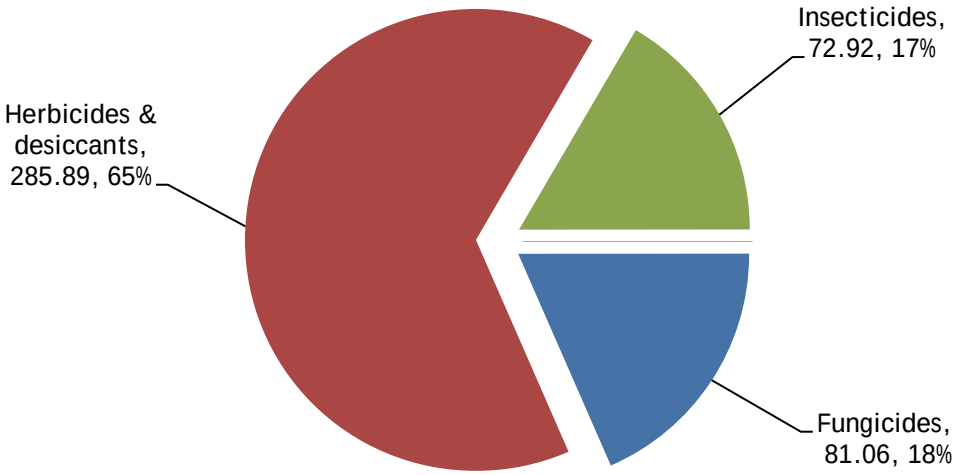
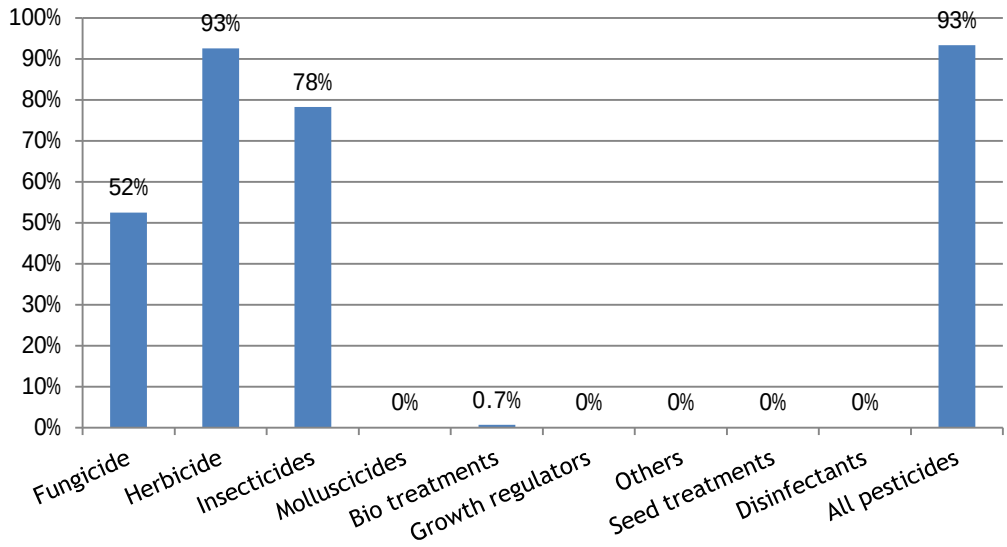


Figure 28: Proportional area of broccoli & calabrese crops treated with each pesticide group in Northern Ireland (kg), 2011.



Fungicides – broccoli & calabrese

Basic area treated: 50.54 hectares
Area treated: 200.50 spray hectares
Weight of active substances applied: 81.06kg
52.5% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin/difenoconazole	70.576	18.514	22.937	35.43%
Difenoconazole	69.857	48.724	5.239	35.07%
Chlorothalonil/metalaxyl-M	23.226	22.918	24.968	11.66%
Tebuconazole	19.518	19.518	4.772	9.80%
Azoxystrobin	8.656	2.164	1.948	4.35%

Figure 29: Fungicide active ingredient usage on broccoli & calabrese crops in Northern Ireland (spha), 2011.

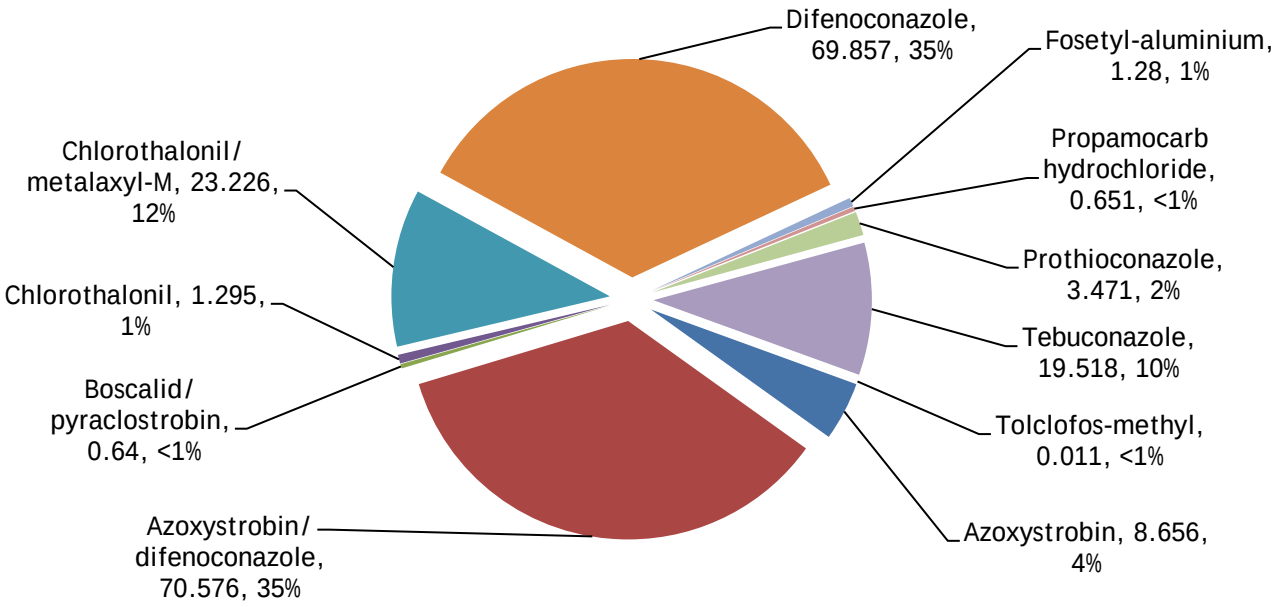


Figure 30: Weight of fungicide active substances applied to broccoli & calabrese crops in Northern Ireland (kg), 2011.

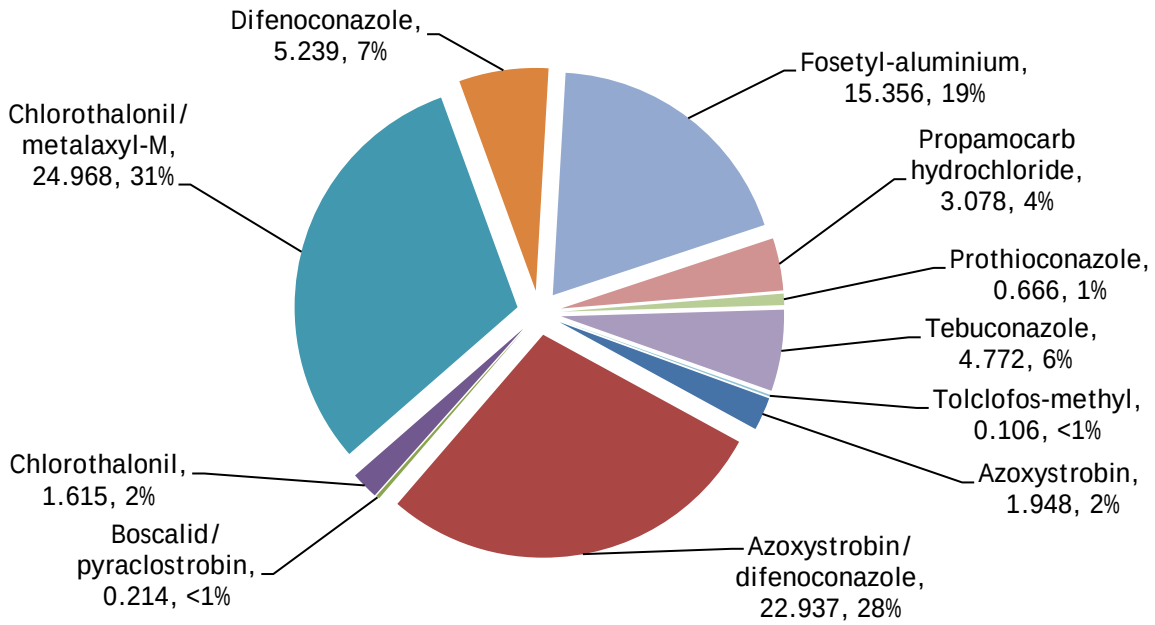
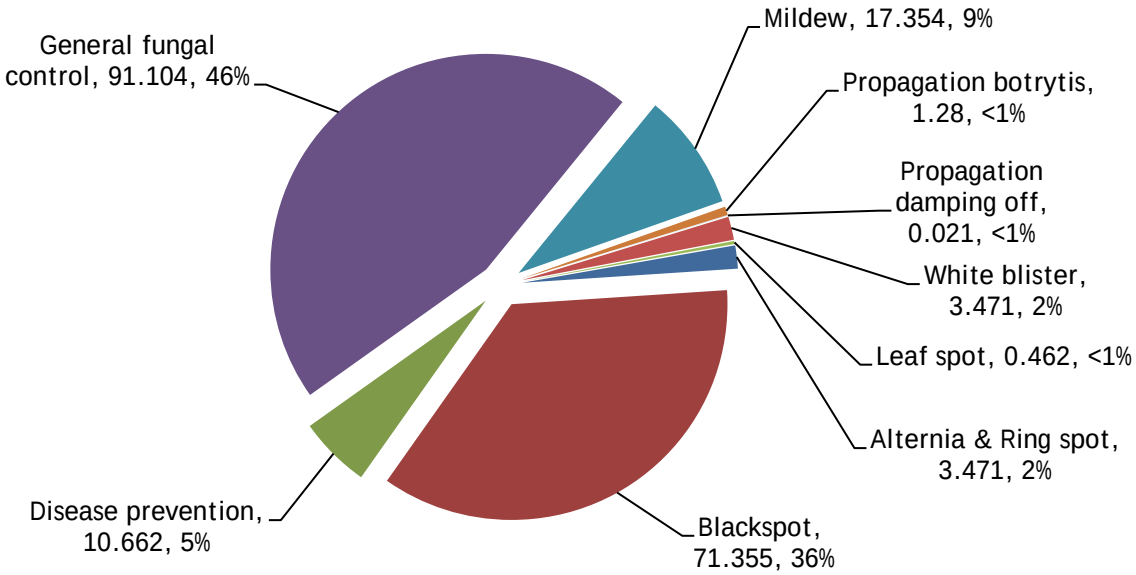


Figure 31: Broccoli & calabrese: reasons for fungicide use (spha).



Herbicides & desiccants – broccoli & calabrese

Basic area treated: 89.17 hectares
Area treated: 267.92 spray hectares
Weight of active substances applied: 285.89kg
92.6% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	97.182	70.079	113.602	36.27%
Metazachlor	74.834	70.507	50.927	27.93%
Clopyralid	26.031	13.016	2.603	9.72%
Pyridate	26.031	13.016	10.413	9.72%
Clomazone	22.002	22.002	2.93	8.21%

Figure 32: Herbicide & desiccant active substance usage on broccoli & calabrese crops in Northern Ireland (spha), 2011.

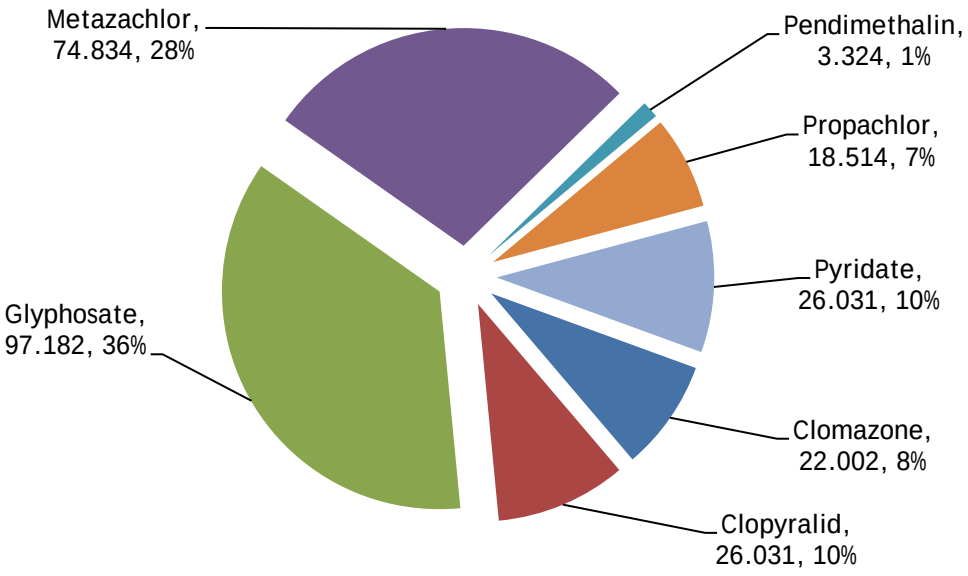


Figure 33: Weight of herbicide & desiccant active substances applied to broccoli & calabrese crops in Northern Ireland (kg), 2011.

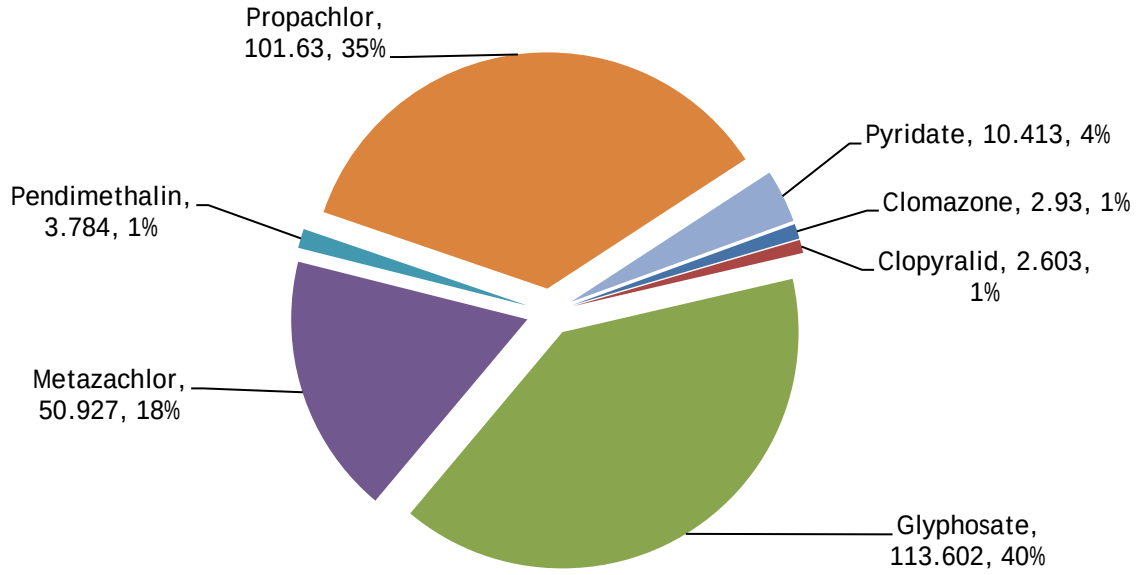
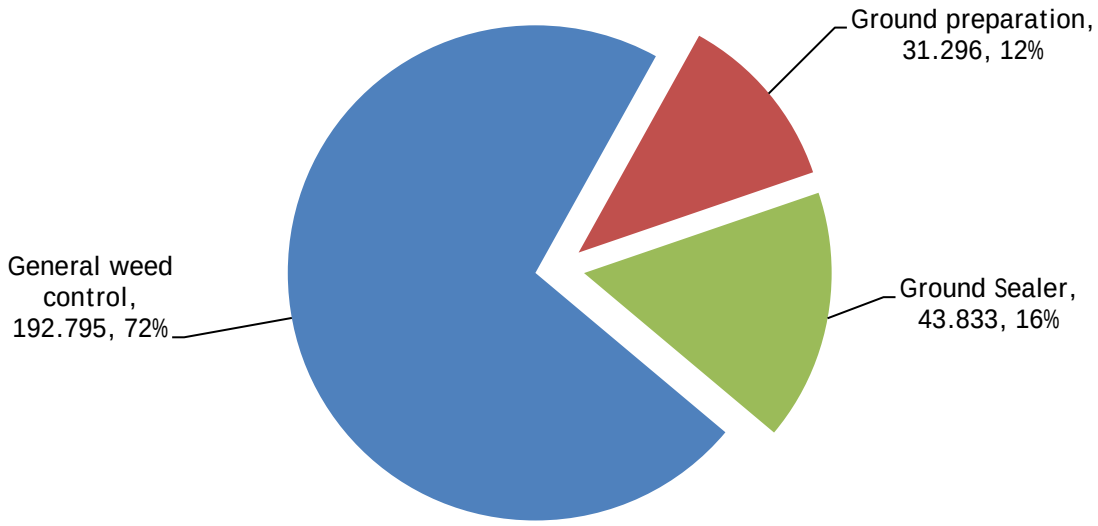


Figure 34: Broccoli & calabrese: reasons for herbicide & desiccant use (spha).



Insecticides – broccoli & calabrese

Basic area treated: 75.41 hectares
Area treated: 294.12 spray hectares
Weight of active substances applied: 72.92kg
78.3% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	92.868	23.143	1.334	31.57%
Pirimicarb	52.868	28.002	10.842	17.97%
Cypermethrin	48.209	25.352	1.205	16.39%
Thiacloprid	38.82	21.465	3.726	13.20%
Lambda-cyhalothrin/pirimicarb	27.217	27.217	5.534	9.25%

Figure 35: Insecticide active substance usage on broccoli & calabrese crops in Northern Ireland (spha), 2011.

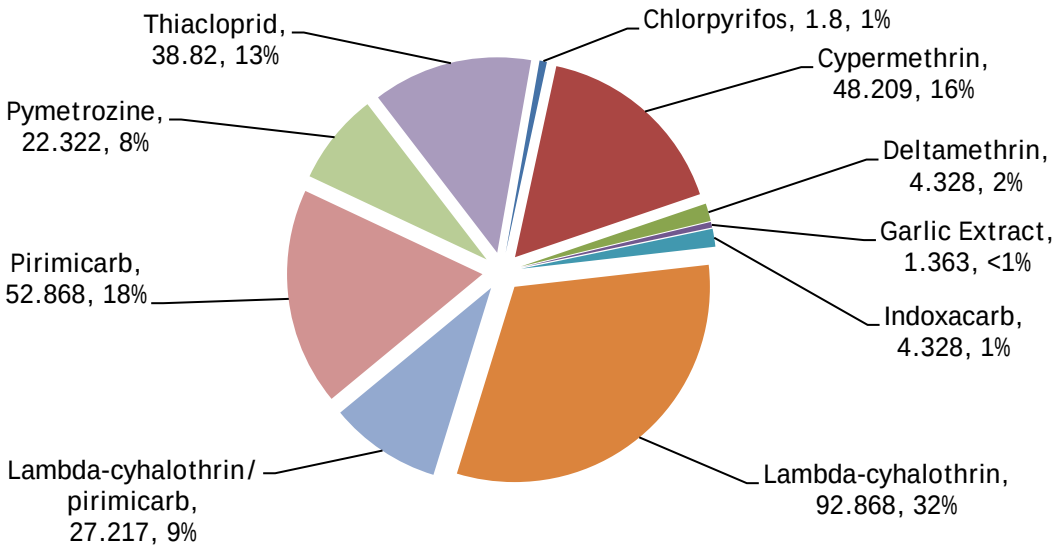


Figure 36: Weight of insecticide active substances applied to broccoli & calabrese crops in Northern Ireland (kg), 2011.

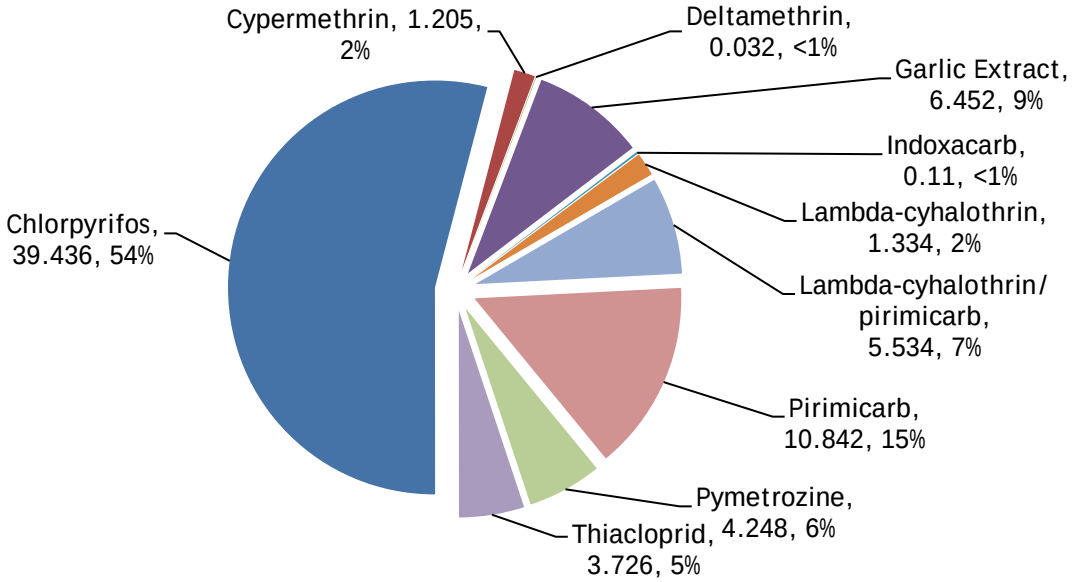
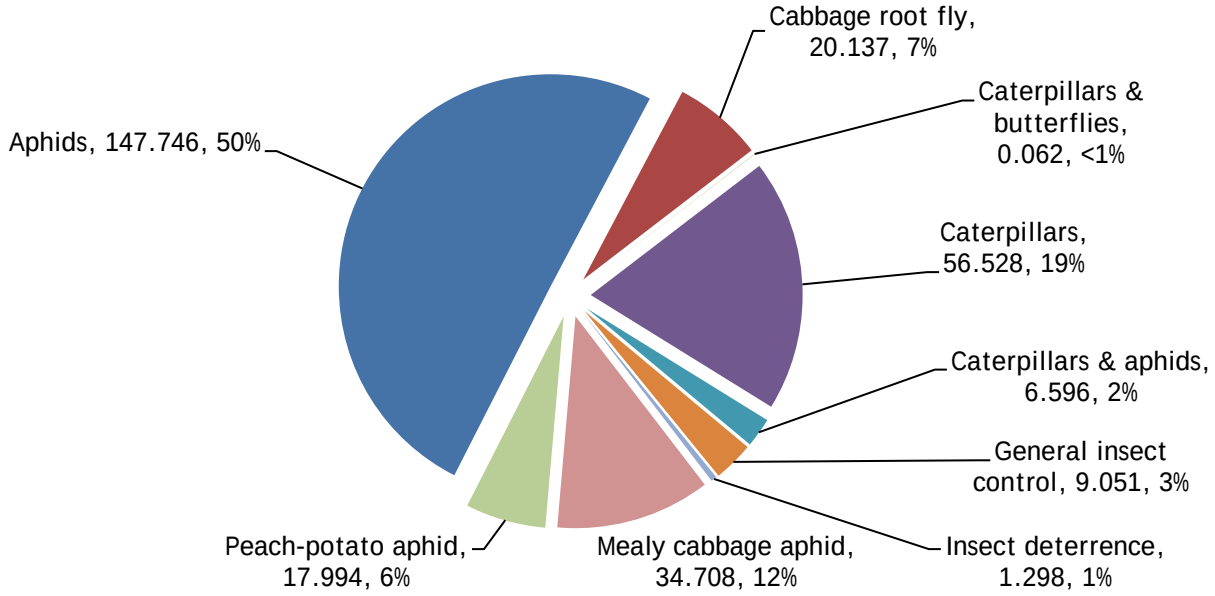


Figure 37: Broccoli & calabrese: reasons for insecticide use (spha).



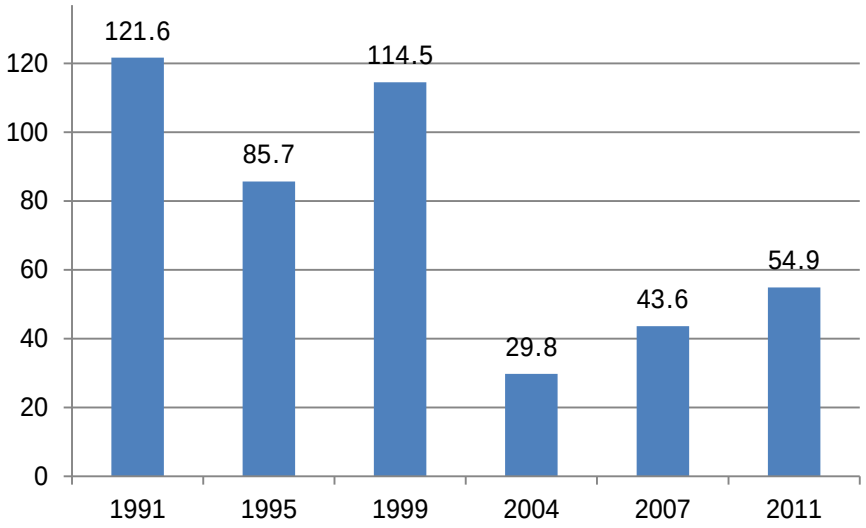
Biological controls – broccoli & calabrese

Basic area treated: 0.64 hectares
Area treated: 0.64 spray hectares
0.7% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.64	0.64		

Brussels sprout crops

Figure 38: Comparison of the area of brussels sprout crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on brussels sprout crops:

54.87 hectares of brussels sprout crops grown in Northern Ireland

551.62 treated hectares

345.97kg applied

99.7% of crops received at least one treatment

Brussels sprout received on average 3.4 fungicide, 1.5 herbicide, 2.1 insecticide, 1.0 molluscicide, 1.0 biological control applications.

Figure 39: Regional distribution of brussels sprout crops grown in Northern Ireland (ha), 1991 - 2011.

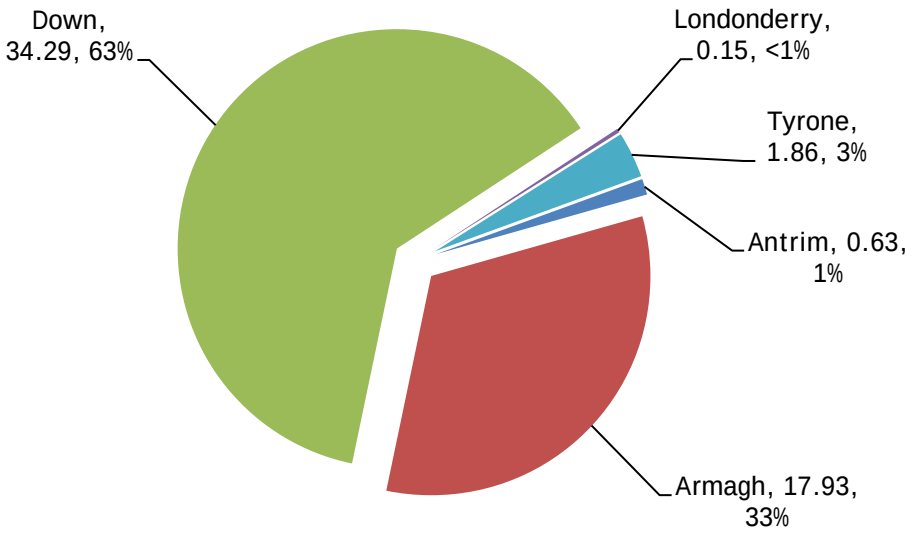


Figure 40: Pesticide usage on brussels sprout crops in Northern Ireland (spha), 2011.

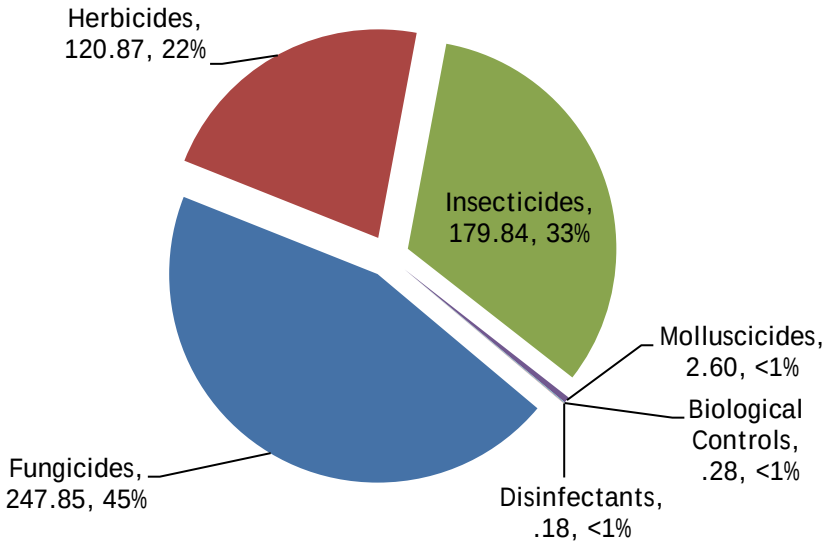


Figure 41: Weight of pesticides applied to brussels sprout crops in Northern Ireland (kg), 2011.

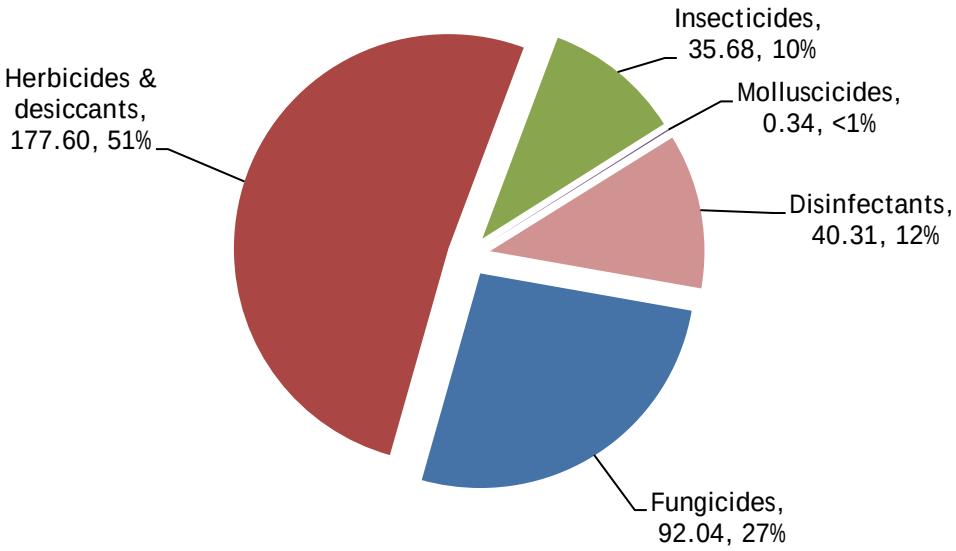
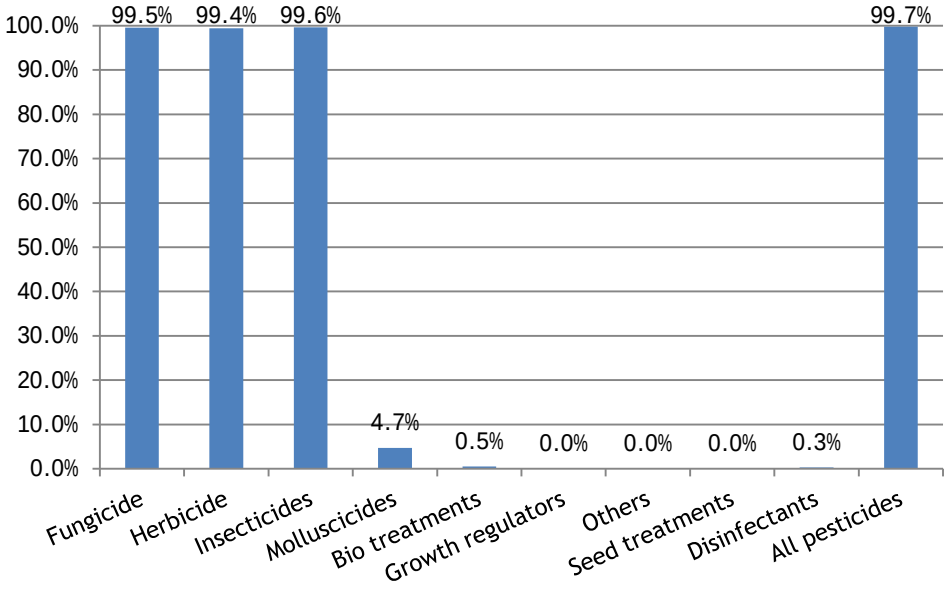


Figure 42: Proportional area of brussels sprout crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – brussels sprout

Basic area treated: 54.60 hectares
Area treated: 247.85 spray hectares
Weight of active substances applied: 92.04kg
99.5% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin	64.189	16.047	16.047	26.0%
Azoxystrobin/difenoconazole	63.743	24.696	20.716	25.8%
Difenoconazole	61.092	38.191	4.582	24.7%
Chlorothalonil/metalaxyl-M	17.028	15.796	18.305	6.9%
Prothioconazole	13.844	13.844	2.658	5.6%

Figure 43: Fungicide active substance usage on brussels sprout crops in Northern Ireland (spha), 2011.

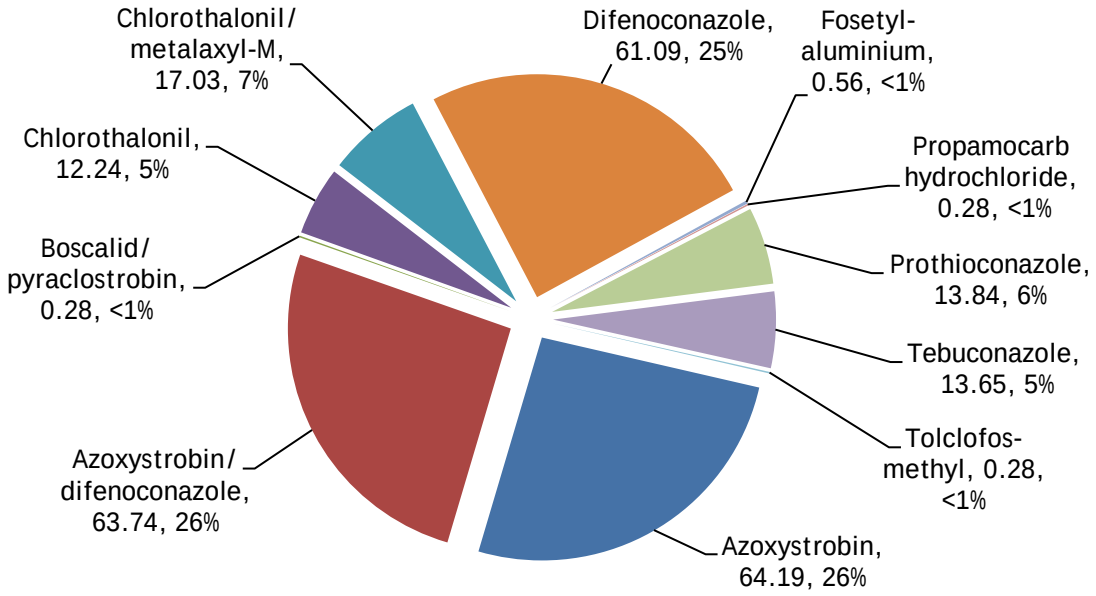


Figure 44: Weight of fungicide active substances applied to brussels sprout crops in Northern Ireland (kg), 2011.

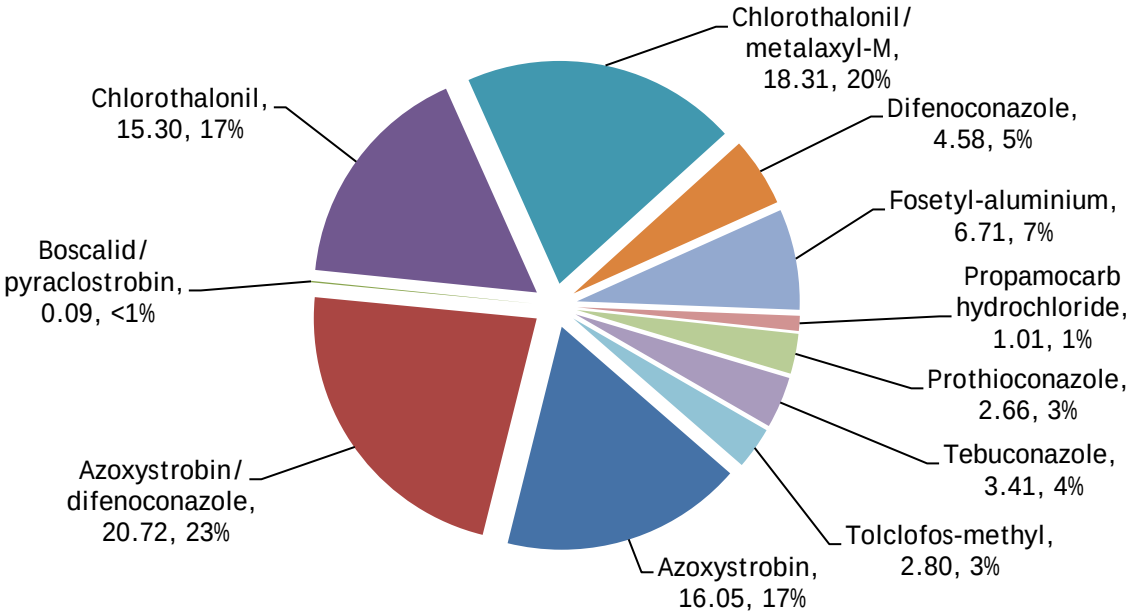
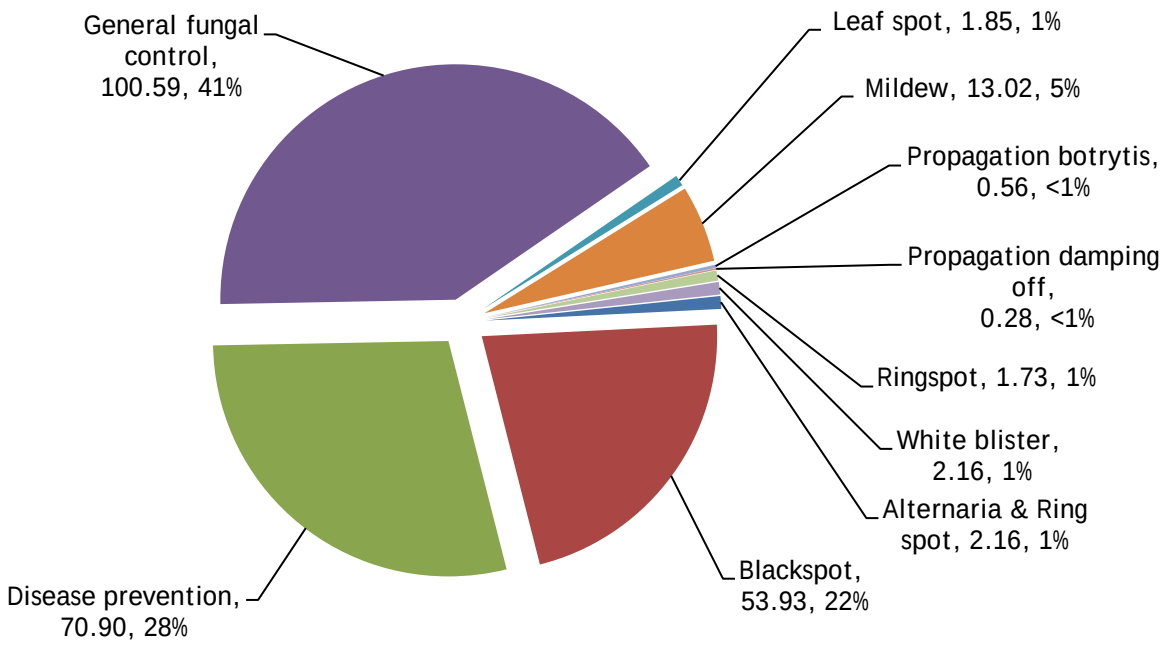


Figure 45: Brussels sprout: reasons for fungicide use (spha).



Herbicides & desiccants – brussels sprout

Basic area treated: 54.55 hectares
Area treated: 120.87 spray hectares
Weight of active substances applied: 177.6kg
99.4% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	61.993	48.977	78.301	51.29%
Metazachlor	38.728	38.728	21.79	32.04%
Propachlor	13.016	13.016	74.97	10.77%
Aminopyralid/fluroxypyr	6.489	6.489	1.687	5.37%
Pendimethalin	0.631	0.631	0.833	0.52%

Figure 46: Herbicide & desiccant active substance usage on brussels sprout crops in Northern Ireland (spha), 2011.

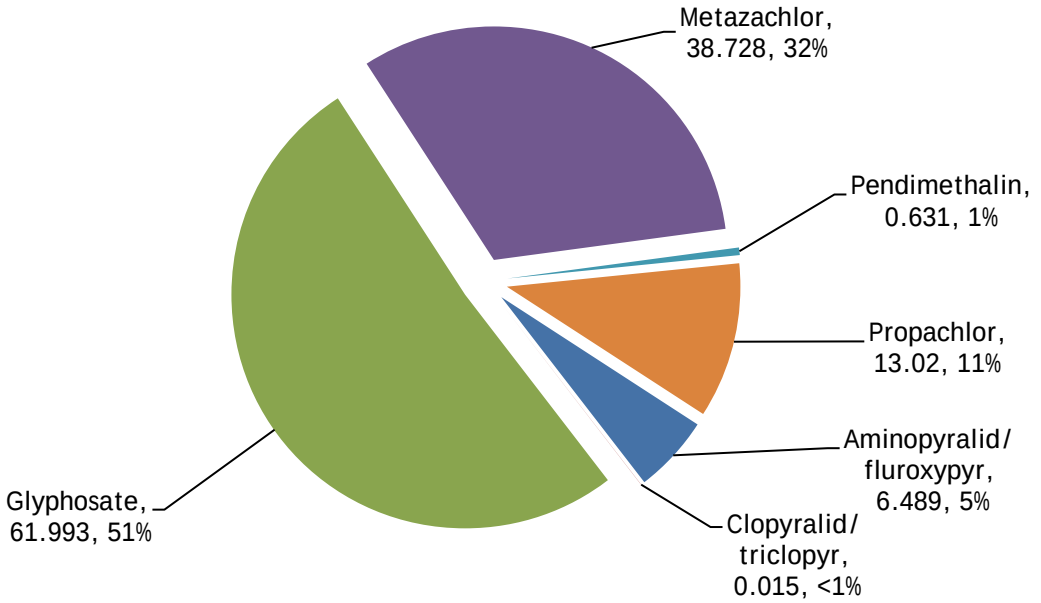


Figure 47: Weight of herbicide & desiccant active substances applied to brussels sprout crops in Northern Ireland (kg), 2011.

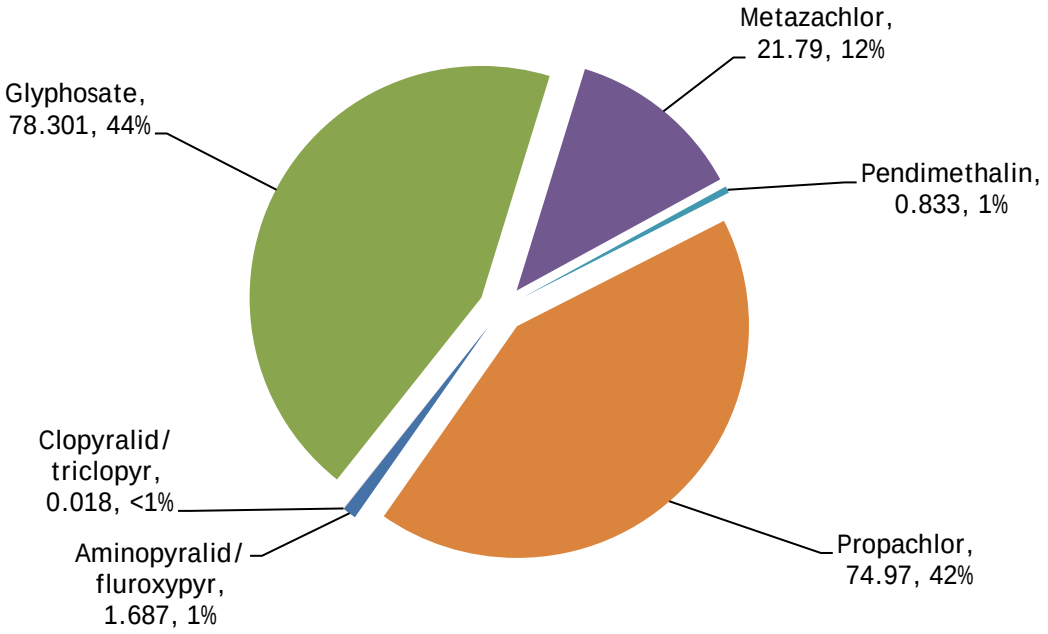
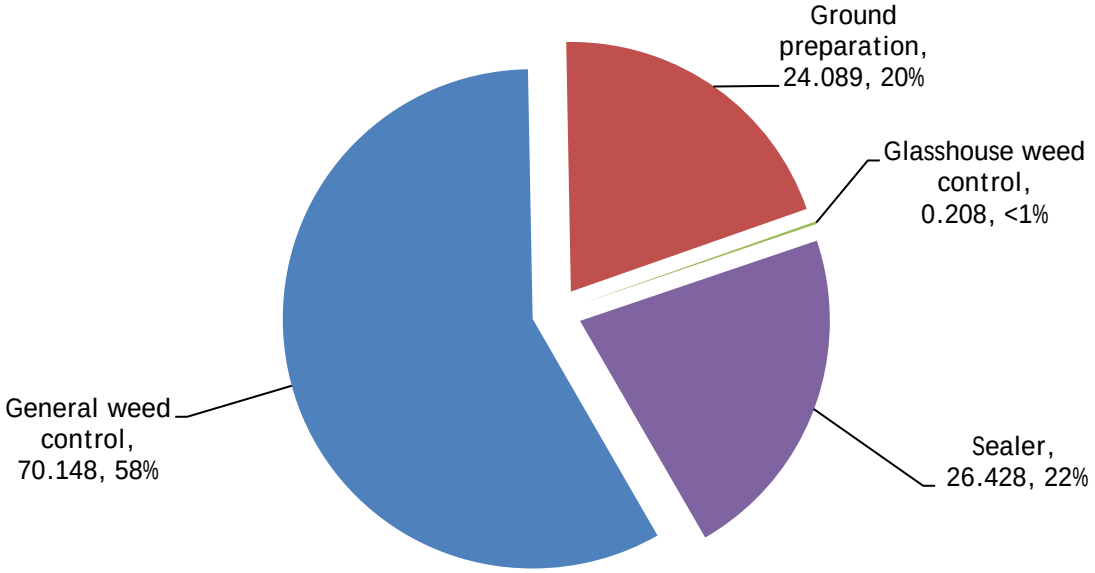


Figure 48: Brussels sprout: reasons for herbicide & desiccant use (spha).



Insecticides – brussels sprout

Basic area treated: 54.64 hectares
Area treated: 179.84 spray hectares
Weight of active substances applied: 35.68kg
99.6% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	69.09	15.796	1.005	38.42%
Pymetrozine	31.464	31.464	6.293	17.50%
Thiacloprid	30.338	17.322	2.912	16.87%
Lambda-cyhalothrin/pirimicarb	19.901	19.901	4.179	11.07%
Pirimicarb	16.45	16.45	3.454	9.15%

Figure 49: Insecticide active substance usage on brussels sprout crops in Northern Ireland (spha), 2011.

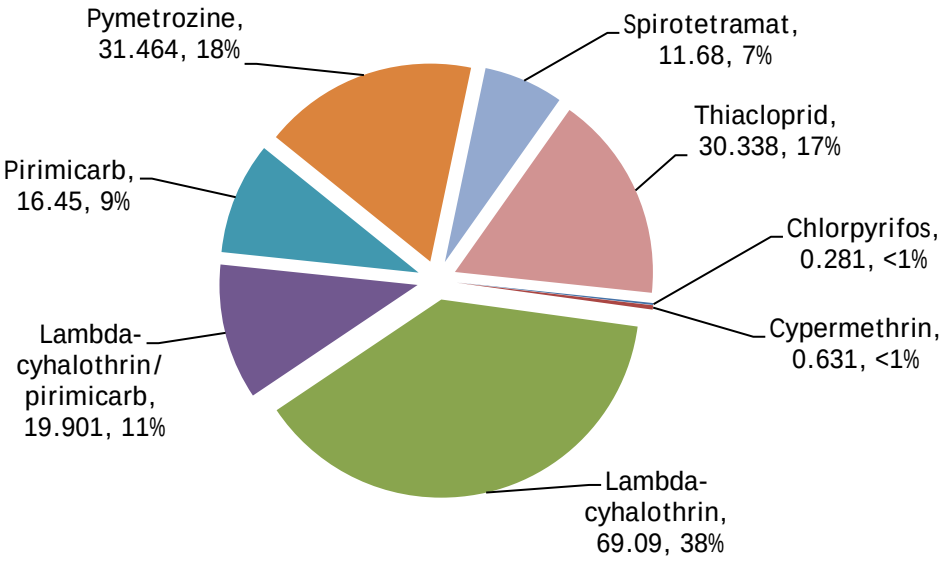


Figure 50: Weight of insecticide active substances applied to brussels sprout crops in Northern Ireland (kg), 2011.

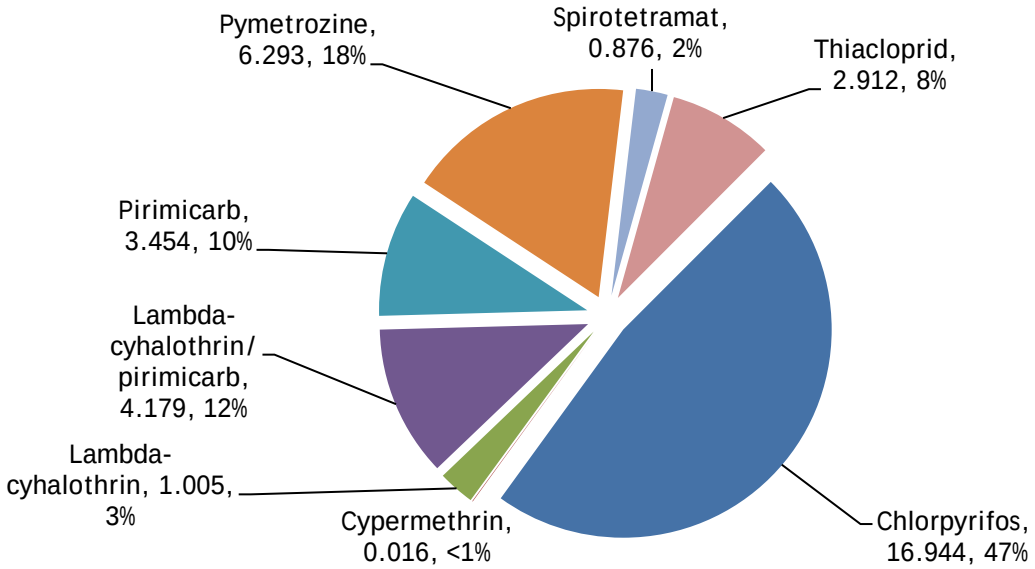
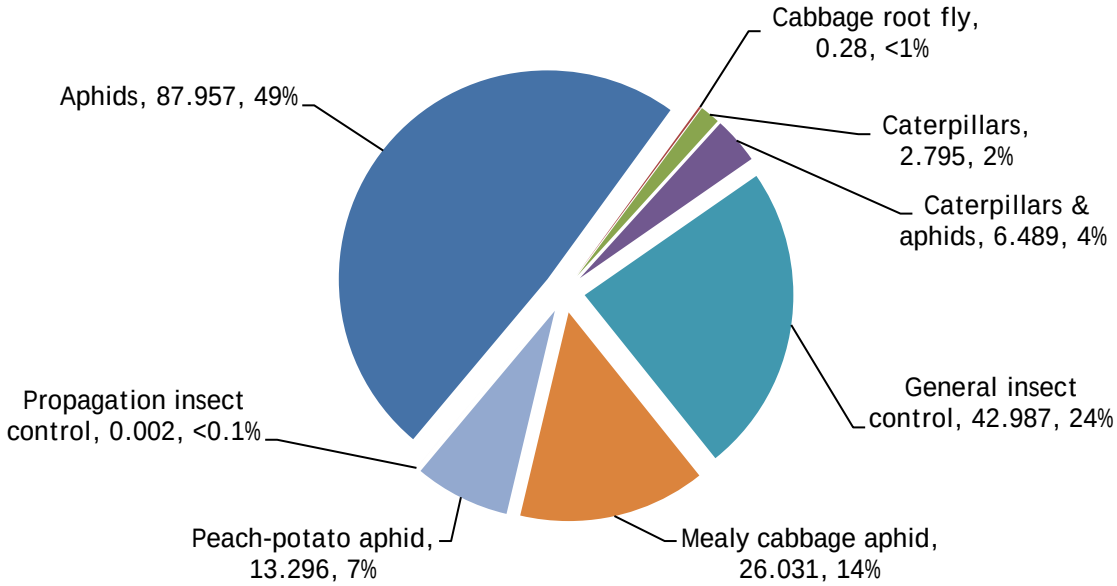


Figure 51: Brussels sprout: reasons for insecticide use (spha).



Molluscicides – brussels sprout

Basic area treated: 2.6 hectares
Area treated: 2.6 spray hectares
Weight of active substances applied: 0.34kg
4.7% of the area grown treated with molluscicides
All applications were to control slugs
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metaldehyde	1.863	1.863	0.233	71.57%
Methiocarb	0.739	0.739	0.111	28.39%

Figure 52: Molluscicide active substance usage on brussels sprout crops in Northern Ireland (spha), 2011.

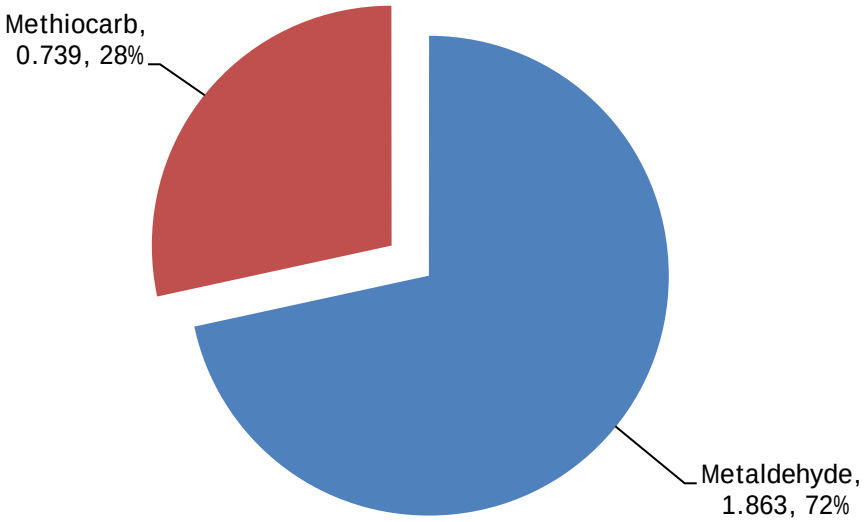
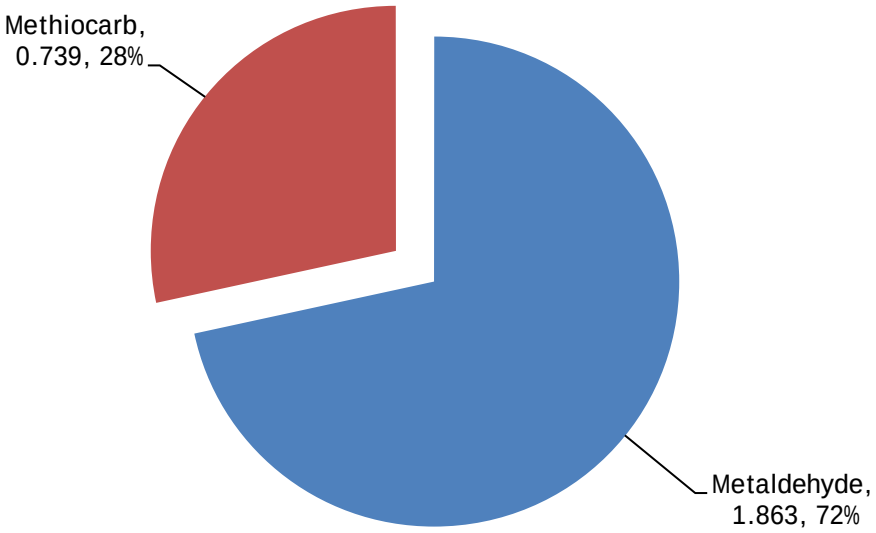


Figure 53: Weight of molluscicide active substances applied to brussels sprout crops in Northern Ireland (kg), 2011.



Biological controls – brussels sprout

Basic area treated: 0.28 hectares
Area treated: 0.28 spray hectares
0.5% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.28	0.28		

Disinfectants – brussels sprout

Basic area treated: 0.18 hectares
Area treated: 0.18 spray hectares
Weight of active substances applied: 40.31kg
0.3% of the area grown treated with disinfectants
All applications were for general glasshouse hygiene
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Acetic acid/hydrogen peroxide/peracetic acid	0.185	0.185	40.31	

Cabbage crops:

Figure 54: Comparison of the area of summer & autumn cabbage crops grown in Northern Ireland (ha), 1991 - 2011.

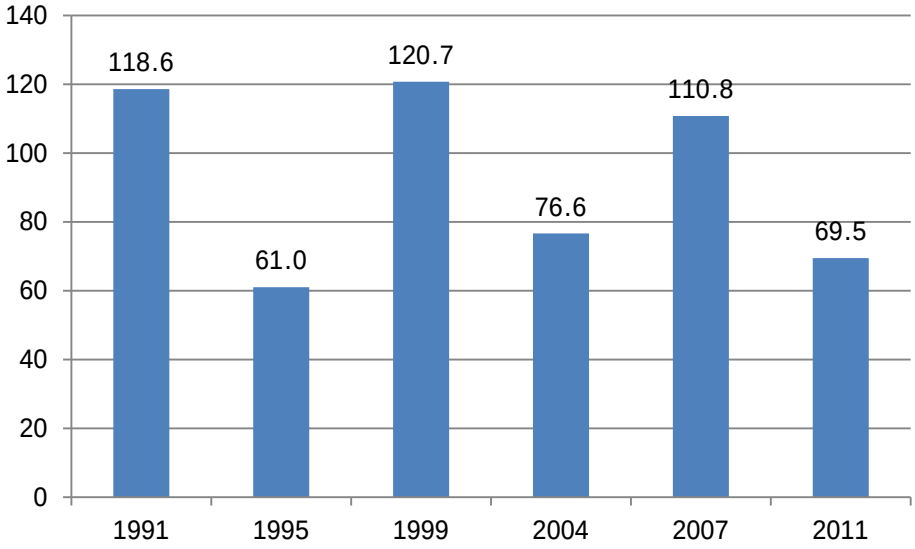
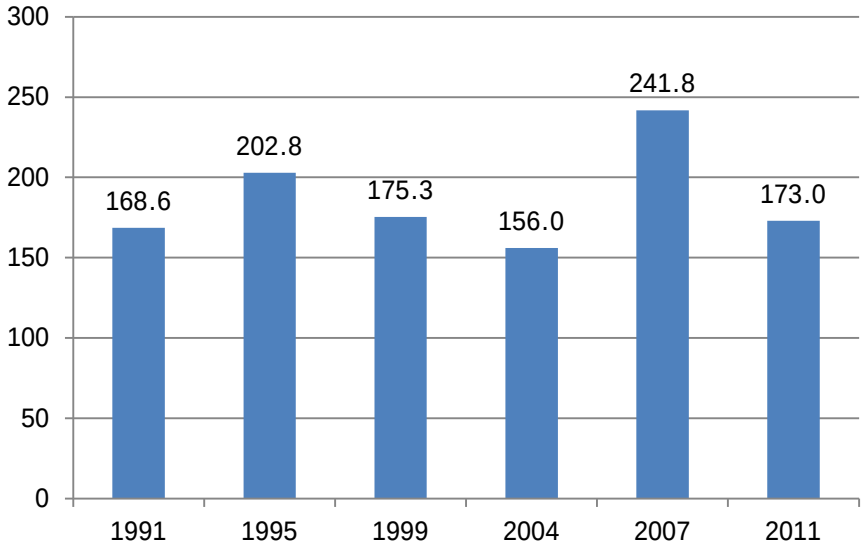


Figure 55: Comparison of the area of 'other' cabbage crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on autumn cabbage crops:

2.11 hectares of autumn cabbage crops grown in Northern Ireland all of which grown in Co Down

10.10 treated hectares

6.56kg applied

100% of crops received at least one treatment

Autumn cabbage received on average 4.8 fungicide, 1.7 herbicide, 2.0 insecticide, 1.0 biological control applications.

Figure 56: Pesticide usage on autumn cabbage crops in Northern Ireland (spha), 2011.

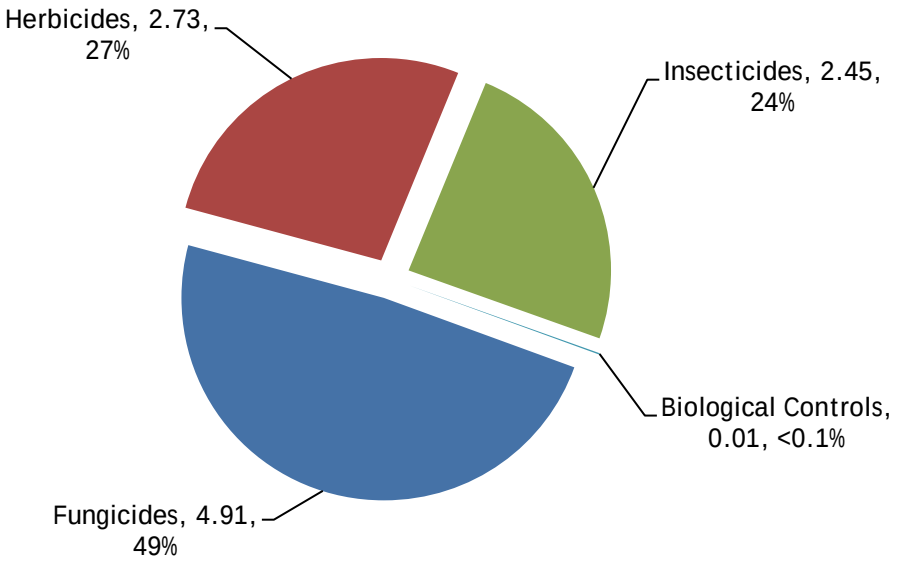


Figure 57: Weight of pesticides applied to autumn cabbage crops in Northern Ireland (kg), 2011.

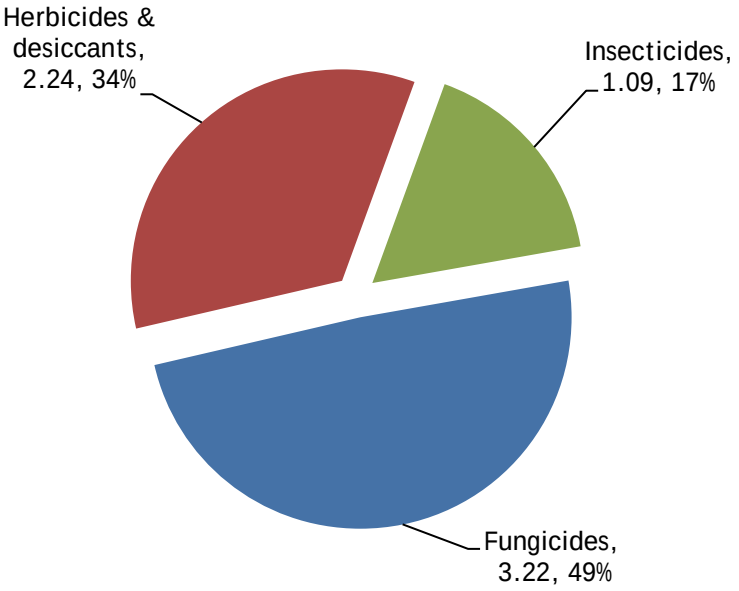
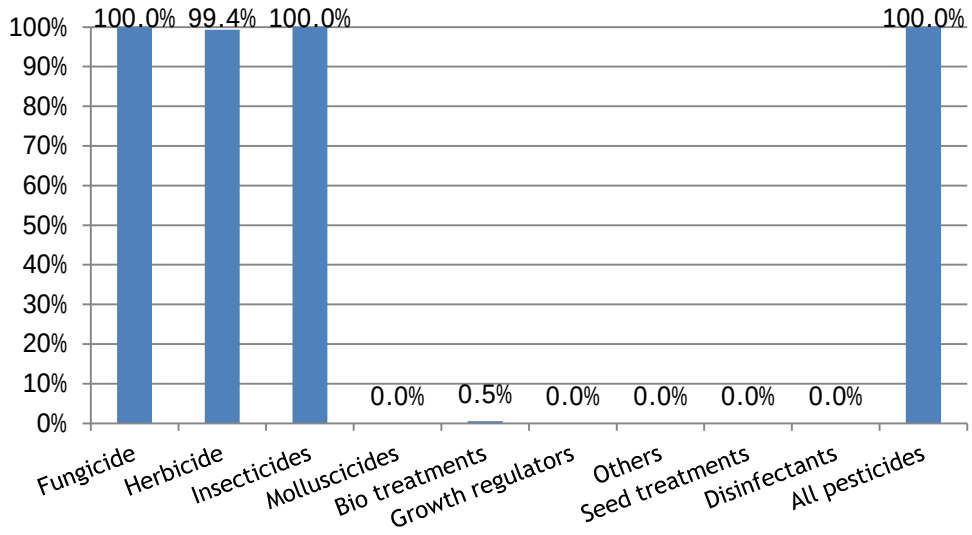


Figure 58: Proportional area of autumn cabbage crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – autumn cabbage

Basic area treated: 2.11 hectares
Area treated: 4.91 spray hectares
Weight of active substances applied: 3.22kg
100% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Chlorothalonil/metalaxyl-M	2.401	2.093	2.581	49.12%
Difenoconazole	2.401	2.093	0.18	49.12%
Chlorothalonil	0.031	0.013	0.037	0.63%
Fosetyl-aluminium	0.022	0.011	0.268	0.45%
Boscalid/pyraclostrobin	0.011	0.011	0.004	0.23%
Propamocarb hydrochloride	0.011	0.011	0.04	0.23%
Tolclofos-methyl	0.011	0.011	0.112	0.23%

Figure 59: Fungicide active substance usage on autumn cabbage crops in Northern Ireland (spha), 2011.

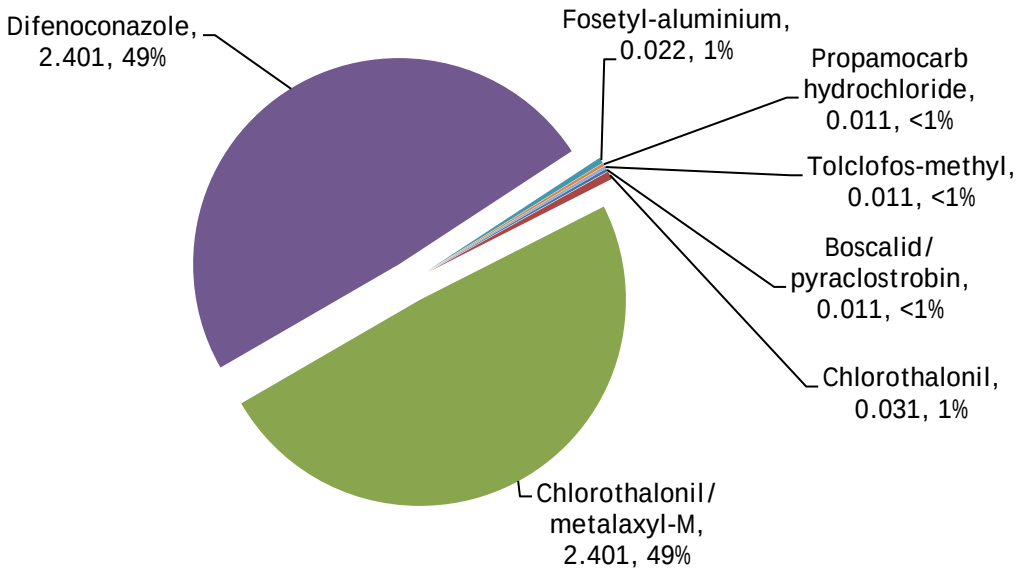


Figure 60: Weight of fungicide active substances applied to autumn cabbage crops in Northern Ireland (kg), 2011.

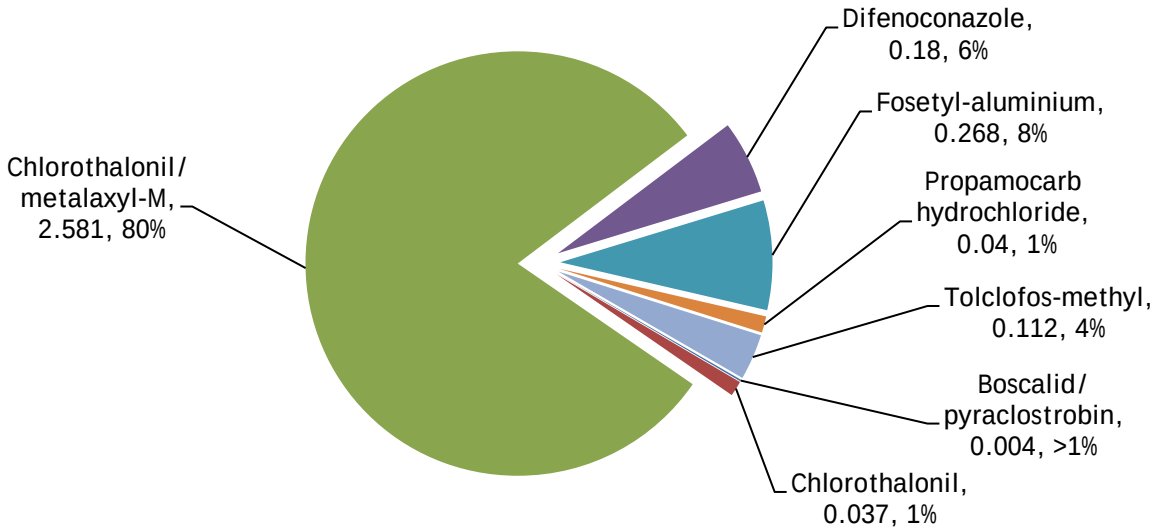
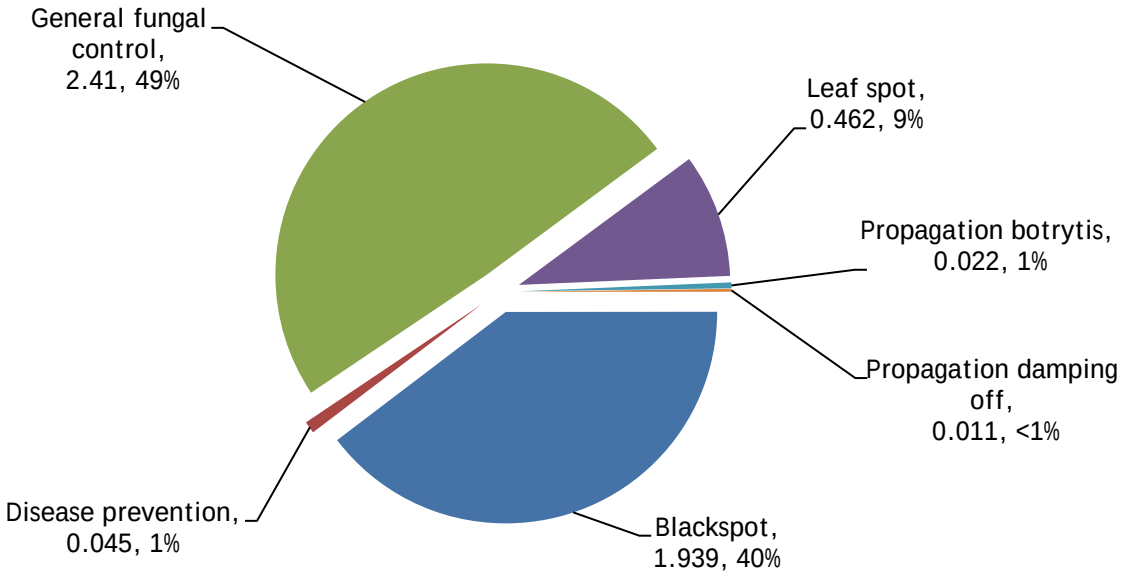


Figure 61: Autumn cabbage: reasons for fungicide use (spha).



Herbicides & desiccants – autumn cabbage

Basic area treated: 2.09 hectares
Area treated: 2.73 spray hectares
Weight of active substances applied: 2.24kg
99.4% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	2.093	2.093	1.569	76.75%
Glyphosate	0.635	0.635	0.675	23.29%

Figure 62: Herbicide & desiccant active substance usage on autumn cabbage crops in Northern Ireland (spha), 2011.

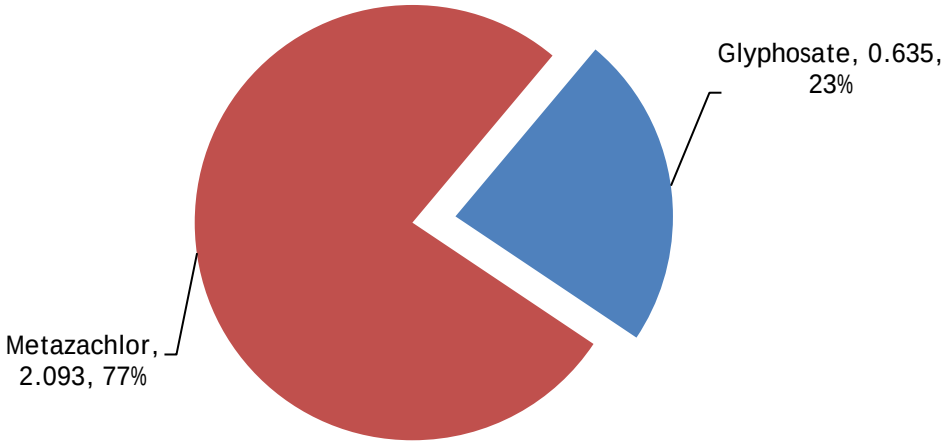


Figure 63: Weight of herbicide & desiccant active substances applied to autumn cabbage crops in Northern Ireland (kg), 2011.

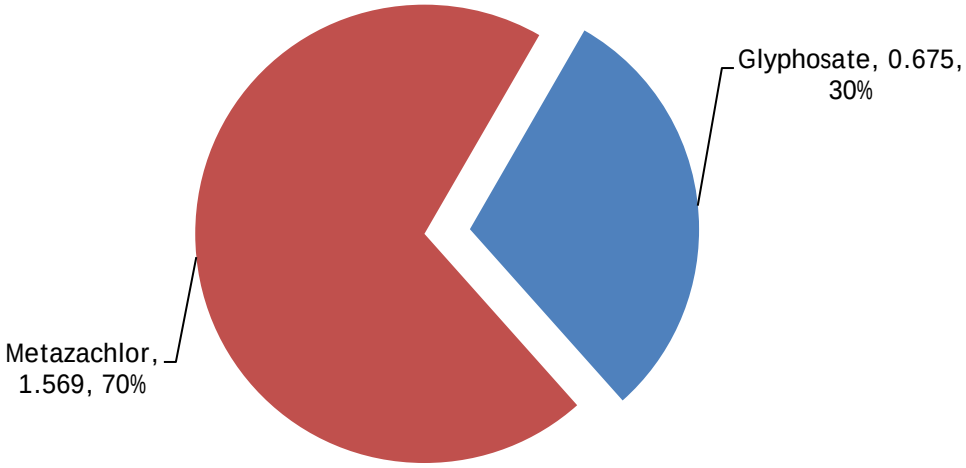
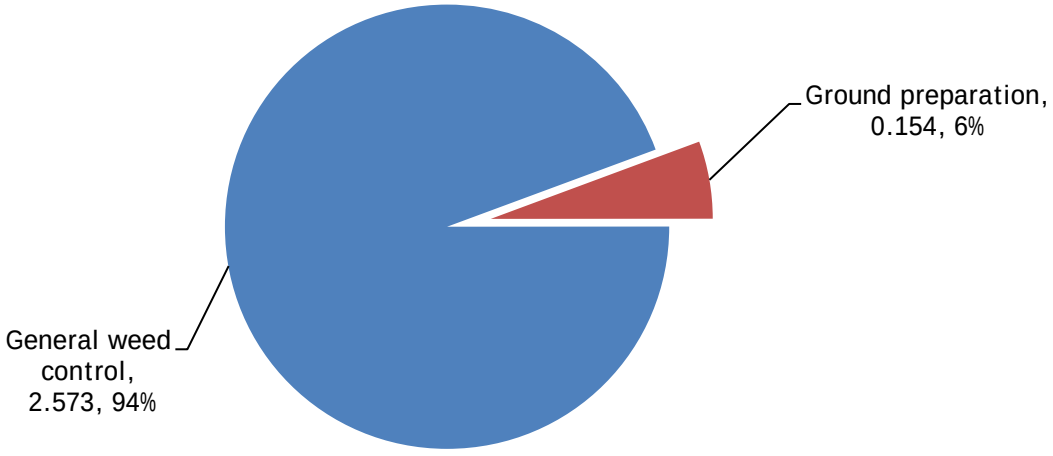


Figure 64: Autumn cabbage: reasons for herbicide & desiccant use (spha).



Insecticides – autumn cabbage

Basic area treated: 2.11 hectares
Area treated: 2.45 spray hectares
Weight of active substances applied: 1.09kg
100% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin/pirimicarb	1.939	1.939	0.407	79.21%
Lambda-cyhalothrin	0.473	0.165	0.005	19.32%
Chlorpyrifos	0.011	0.011	0.67	0.45%
Pirimicarb	0.011	0.011	0.002	0.45%
Pymetrozine	0.011	0.011	0.002	0.45%

Figure 65: Insecticide active substance usage on autumn cabbage crops in Northern Ireland (spha), 2011.

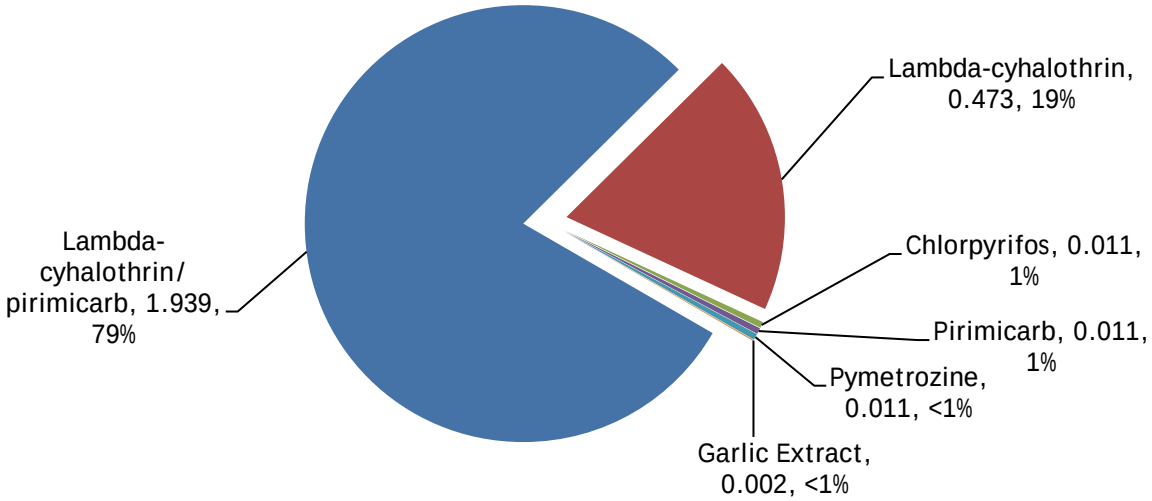


Figure 66: Weight of insecticide active substances applied to autumn cabbage crops in Northern Ireland (kg), 2011.

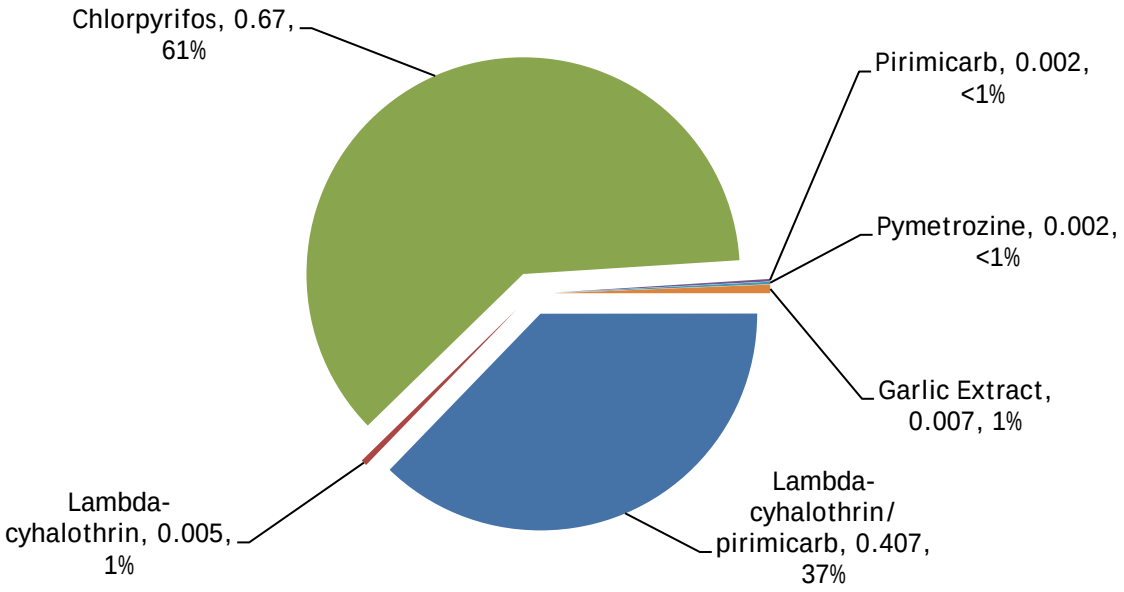
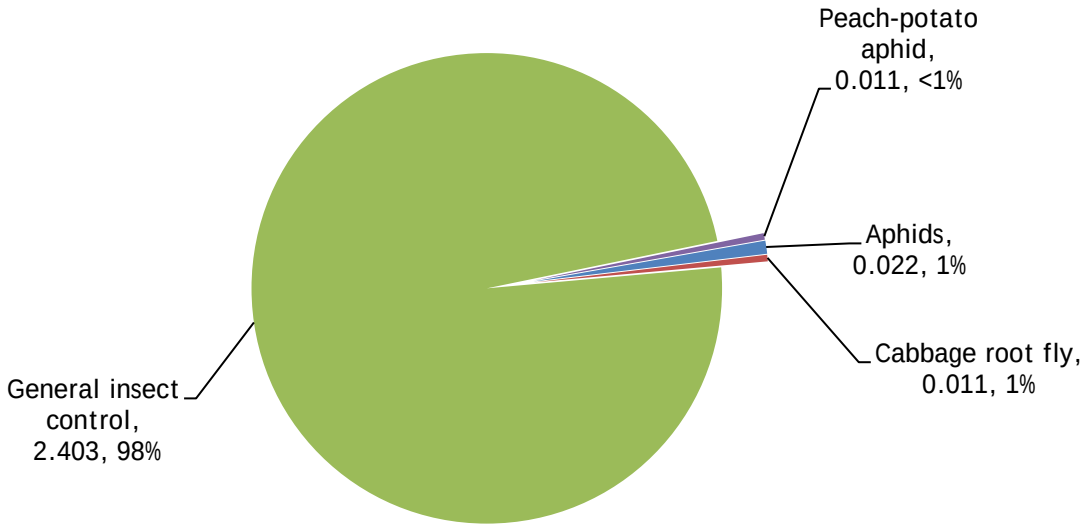


Figure 67: Autumn cabbage: reasons for insecticide use (spha).



Biological controls – autumn cabbage

Basic area treated: 0.11 hectares
Area treated: 0.11 spray hectares
0.5% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.011	0.011		

Pesticide Usage on spring cabbage crops:

19.95 hectares of spring cabbage crops grown in Northern Ireland

126.36 treated hectares

59.80kg applied

96.9% of crops received at least one treatment

Spring cabbage received on average 3.0 fungicide, 2.0 herbicide, 1.6 insecticide, 1.0 biological control applications.

Figure 68: Regional distribution of spring cabbage crops grown in Northern Ireland (ha), 1991 - 2011.

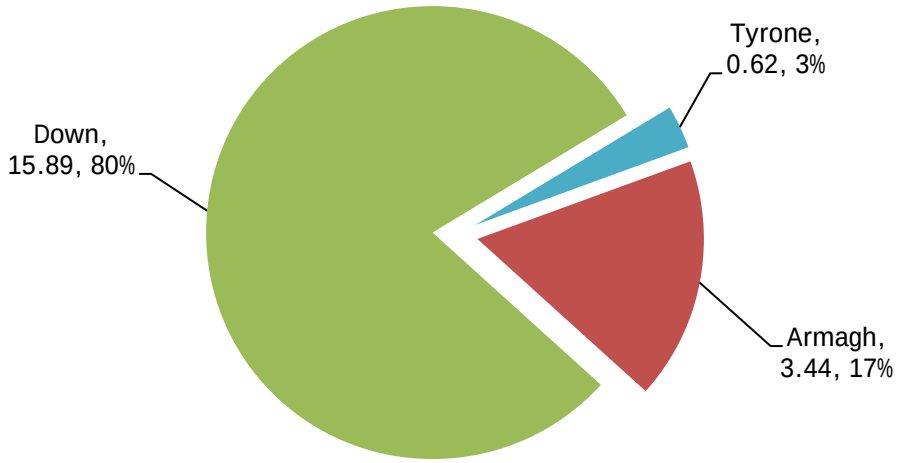


Figure 69: Pesticide usage on spring cabbage crops in Northern Ireland (spha), 2011.

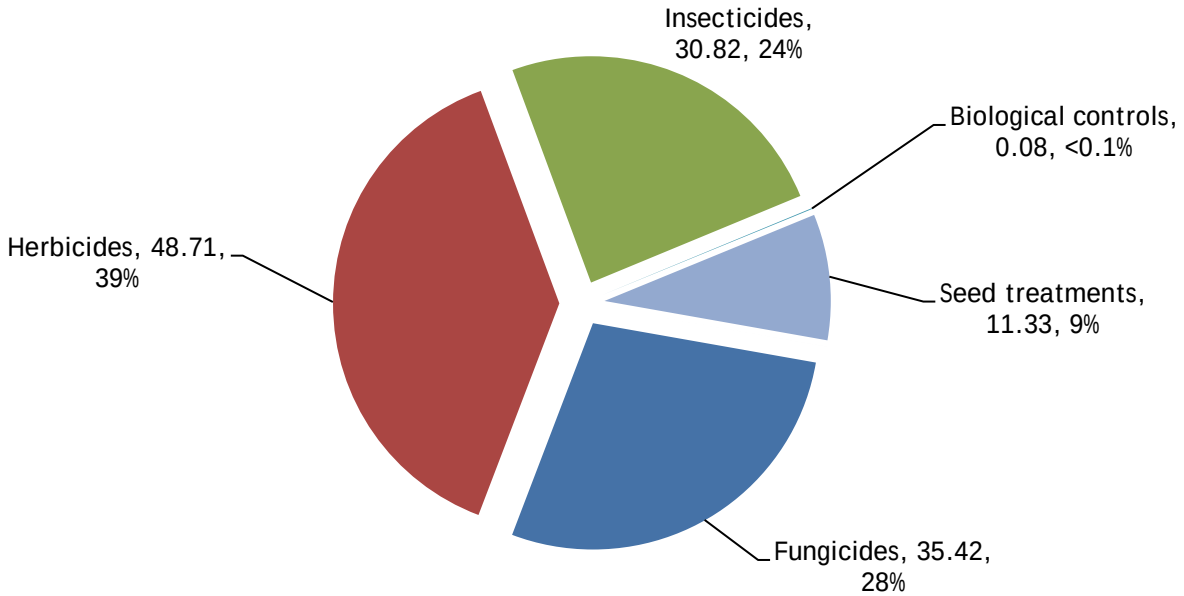


Figure 70: Weight of pesticides applied to spring cabbage crops in Northern Ireland (kg), 2011.

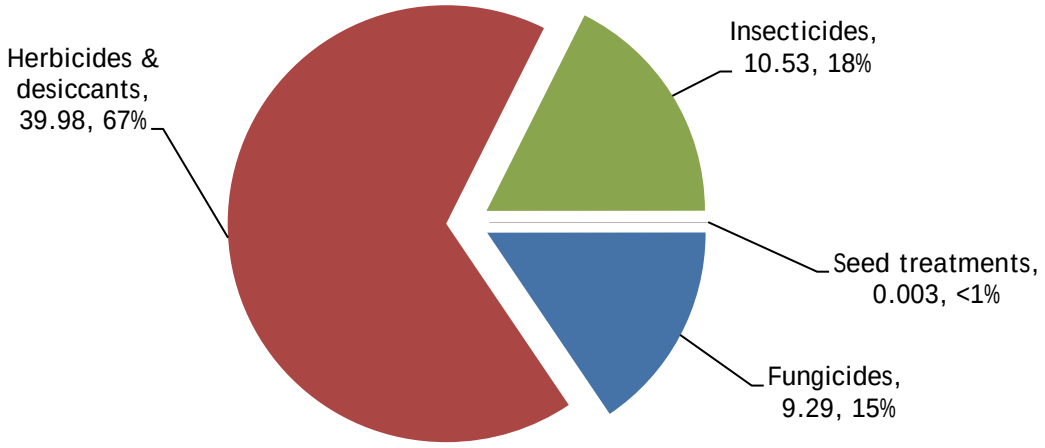
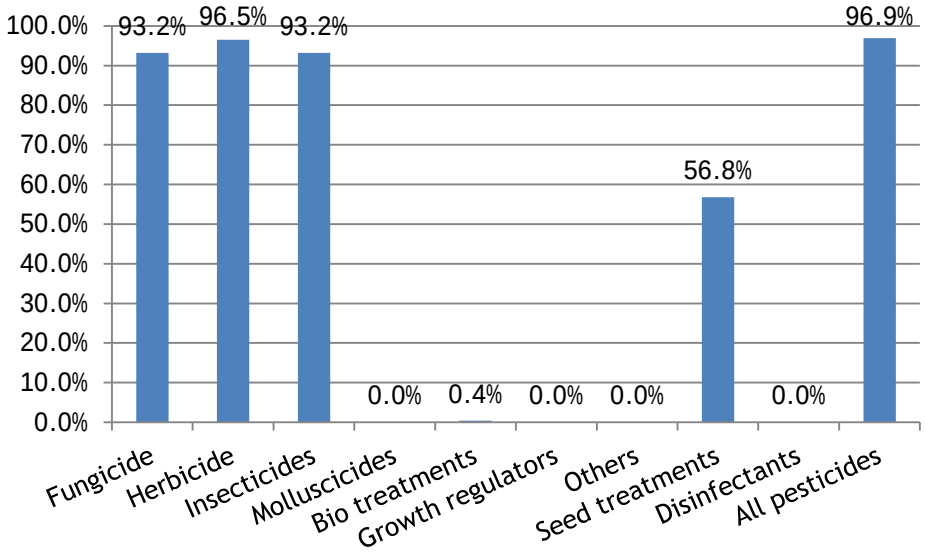


Figure 71: Proportional area of spring cabbage crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – spring cabbage

Basic area treated: 18.59 hectares
Area treated: 35.42 spray hectares
Weight of active substances applied: 9.29kg
93.2% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	28.258	17.235	2.054	80.14%
Azoxystrobin	2.904	2.904	0.401	8.24%
Chlorothalonil	2.411	1.358	2.45	6.84%
Chlorothalonil/metalaxyl-M	1.298	1.298	1.395	3.68%
Fosetyl-aluminium	0.156	0.078	1.878	0.44%

Figure 72: Fungicide active substance usage on spring cabbage crops in Northern Ireland (spha), 2011.

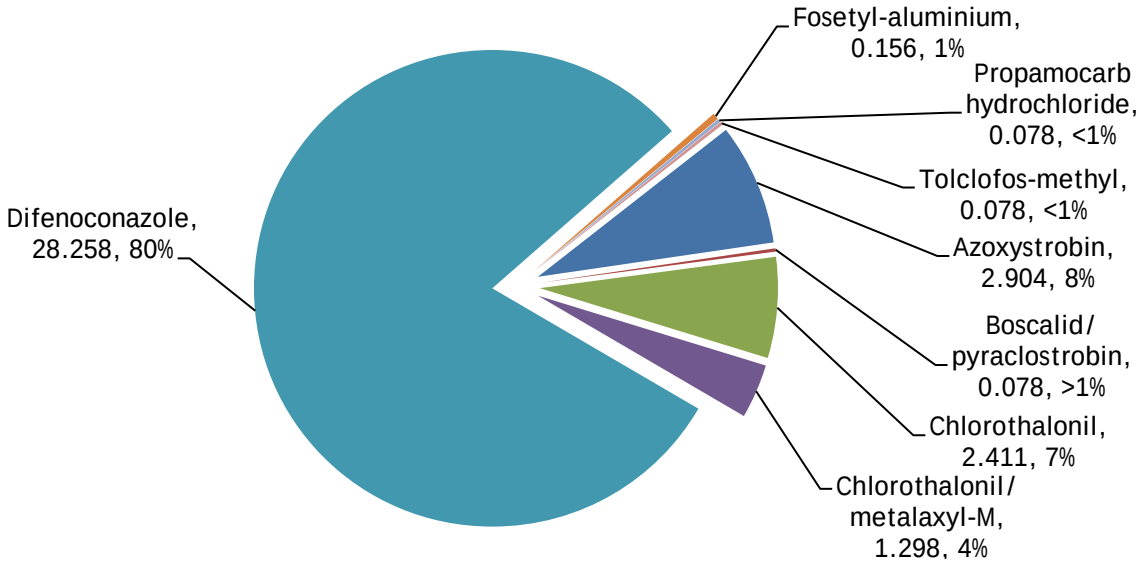


Figure 73: Weight of fungicide active substances applied to spring cabbage crops in Northern Ireland (kg), 2011.

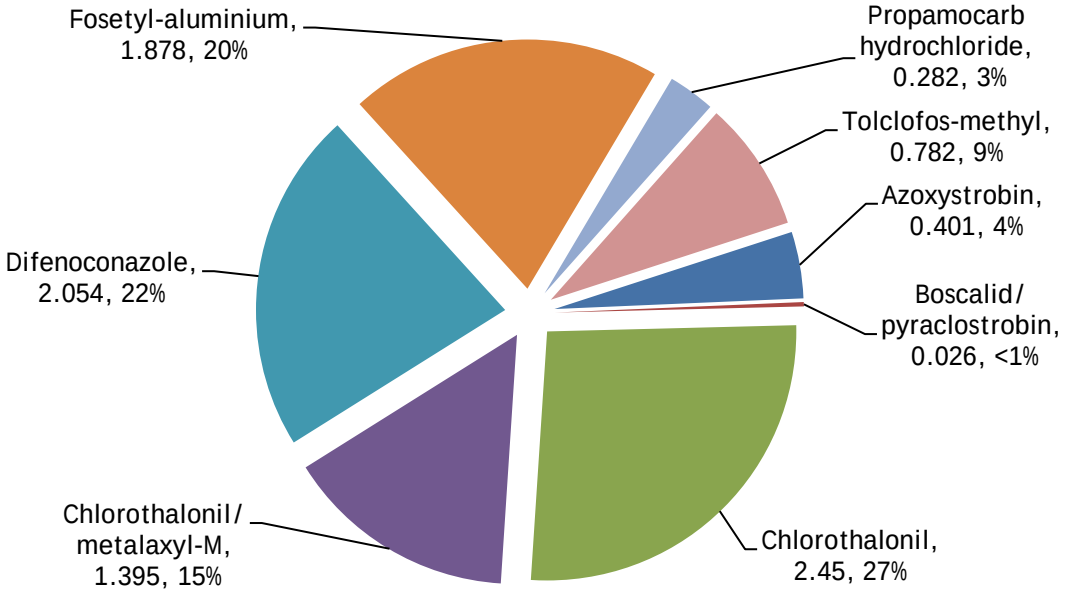
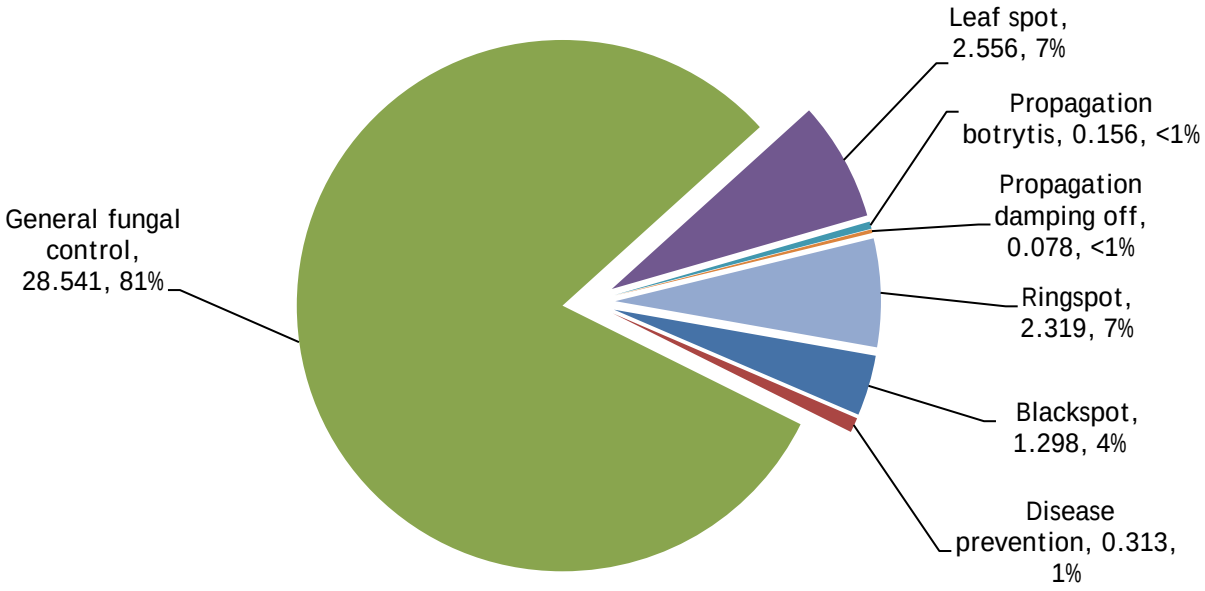


Figure 74: Spring cabbage: reasons for fungicide use (spha).



Herbicides & desiccants – spring cabbage

Basic area treated: 19.25 hectares
Area treated: 48.71 spray hectares
Weight of active substances applied: 39.98kg
96.5% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	18.793	18.793	13.446	38.58%
Glyphosate	15.682	15.682	17.253	32.20%
Diquat	11.023	11.023	2.205	22.63%
Propachlor	2.904	2.904	6.673	5.96%
Pendimethalin	0.308	0.308	0.407	0.63%

Figure 75: Herbicide & desiccant active substance usage on spring cabbage crops in Northern Ireland (spha), 2011.

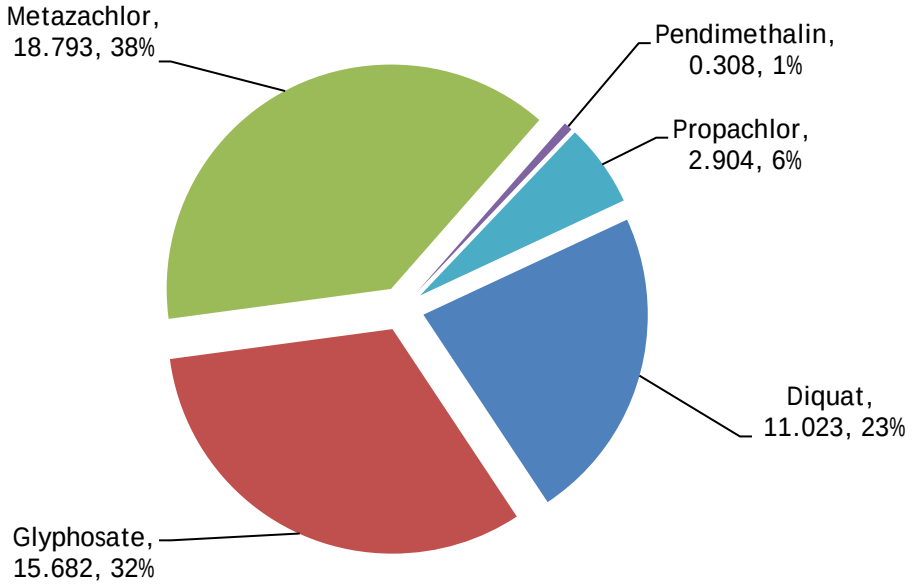


Figure 76: Weight of herbicide & desiccant active substances applied to spring cabbage crops in Northern Ireland (kg), 2011.

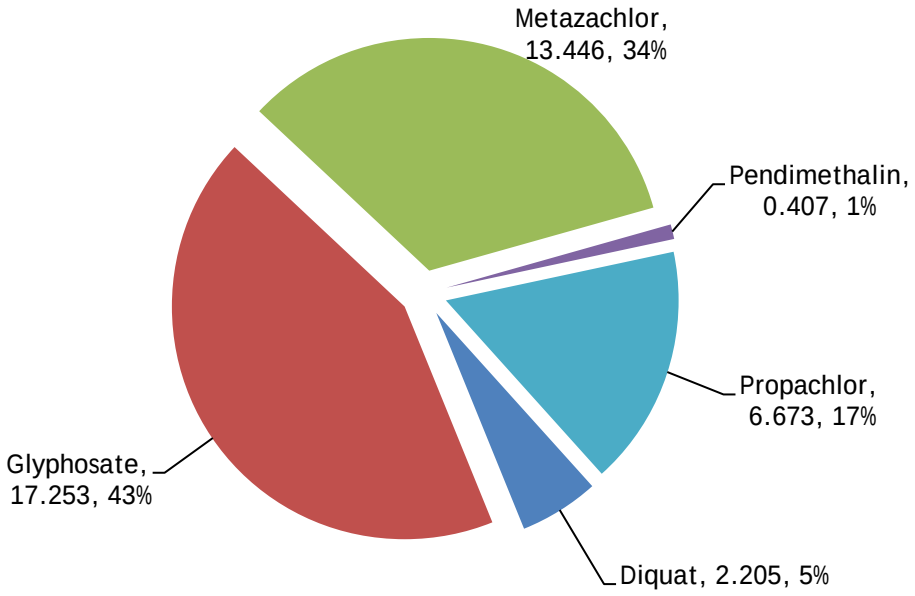
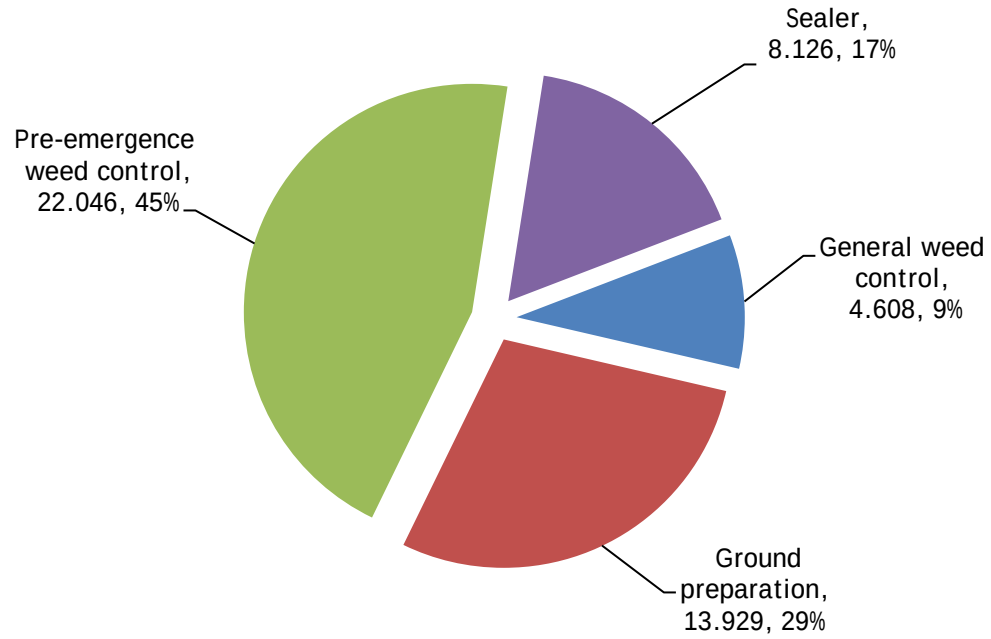


Figure 77: Spring cabbage: reasons for herbicide & desiccant use (spha).



Insecticides – spring cabbage

Basic area treated: 18.59 hectares
Area treated: 30.82 spray hectares
Weight of active substances applied: 10.53kg
93.2% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin/pirimicarb	14.64	14.64	2.38	47.50%
Pirimicarb	11.101	11.101	1.56	36.02%
Lambda-cyhalothrin	2.982	2.982	0.01	9.68%
Chlorpyrifos	2.019	1.048	6.557	6.55%
Pymetrozine	0.078	0.078	0.016	0.25%

Figure 78: Insecticide active substance usage on spring cabbage crops in Northern Ireland (spha), 2011.

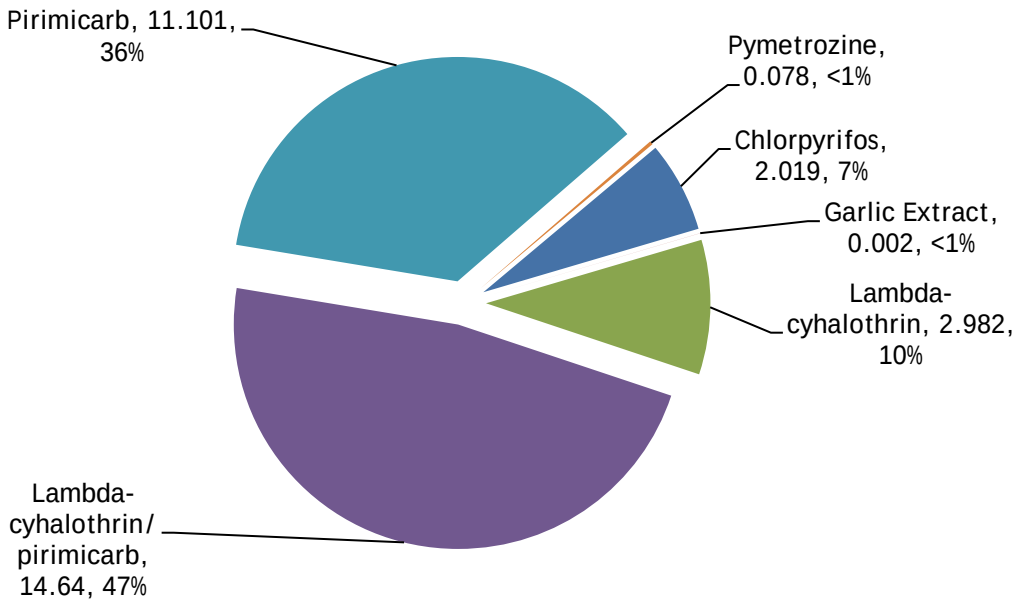


Figure 79: Weight of insecticide active substances applied to spring cabbage crops in Northern Ireland (kg), 2011.

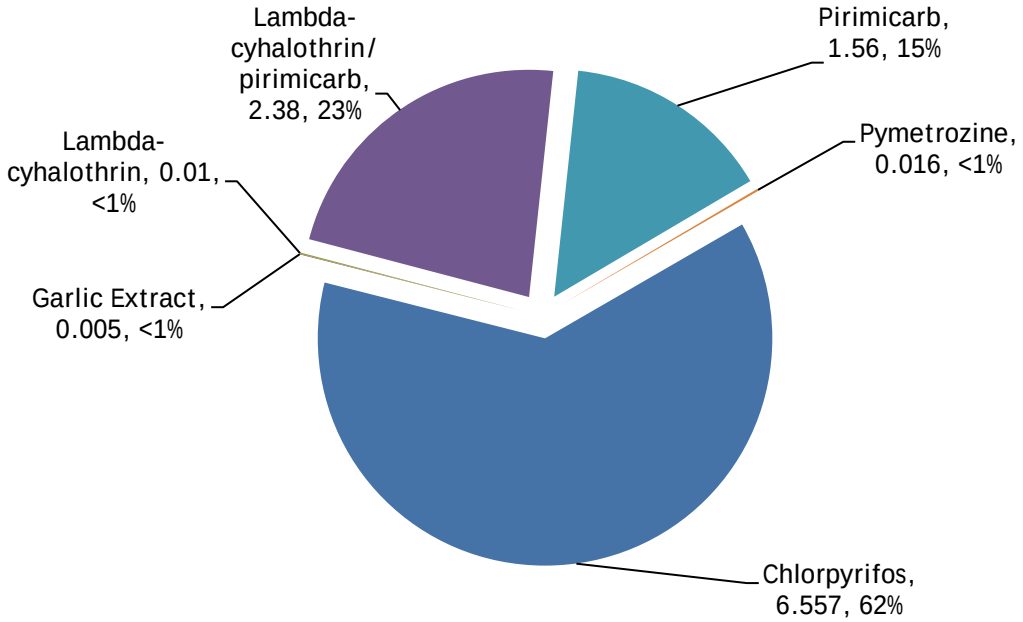
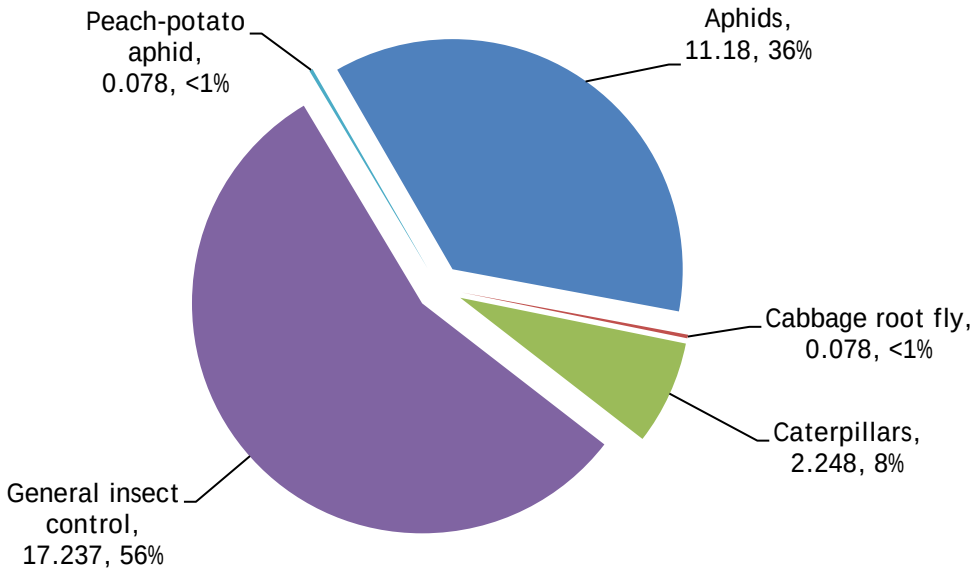


Figure 80: Spring cabbage: reasons for insecticide use (spha).



Biological controls – spring cabbage

Basic area treated: 0.08 hectares
Area treated: 0.08 spray hectares
0.4% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.078	0.078		

Pesticide Usage on winter cabbage crops:

19.23 hectares of winter cabbage crops grown in Northern Ireland all of which were grown in County Down

116.96 treated hectares

65.07kg applied

100% of crops received at least one treatment

Spring cabbage received on average 4.5 fungicide, 2.7 herbicide, 2.0 insecticide, 1.0 biological control applications.

Figure 81: Pesticide usage on winter cabbage crops in Northern Ireland (spha), 2011.

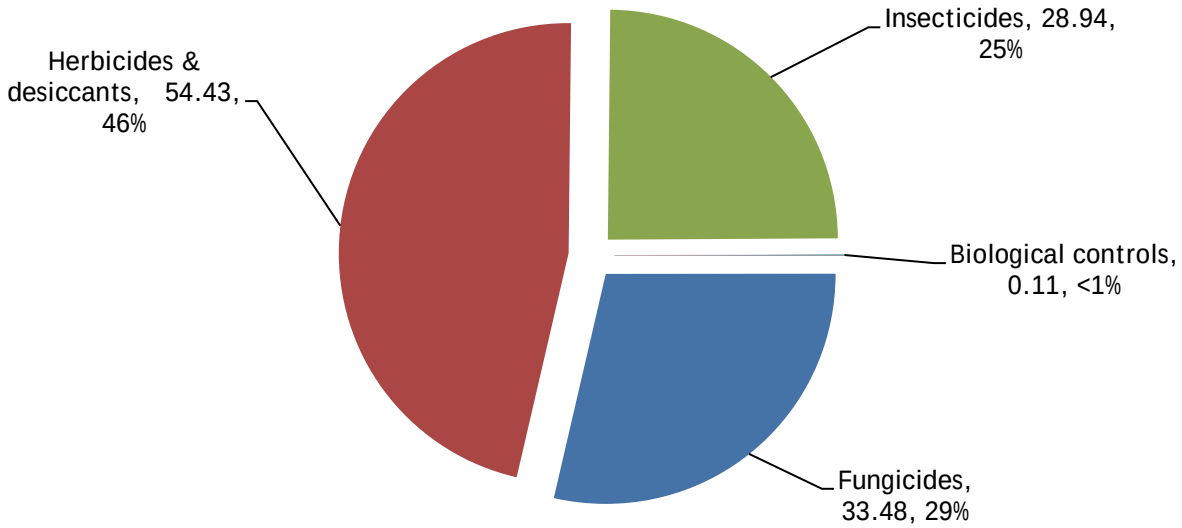


Figure 82: Weight of pesticides applied to winter cabbage crops in Northern Ireland (kg), 2011.

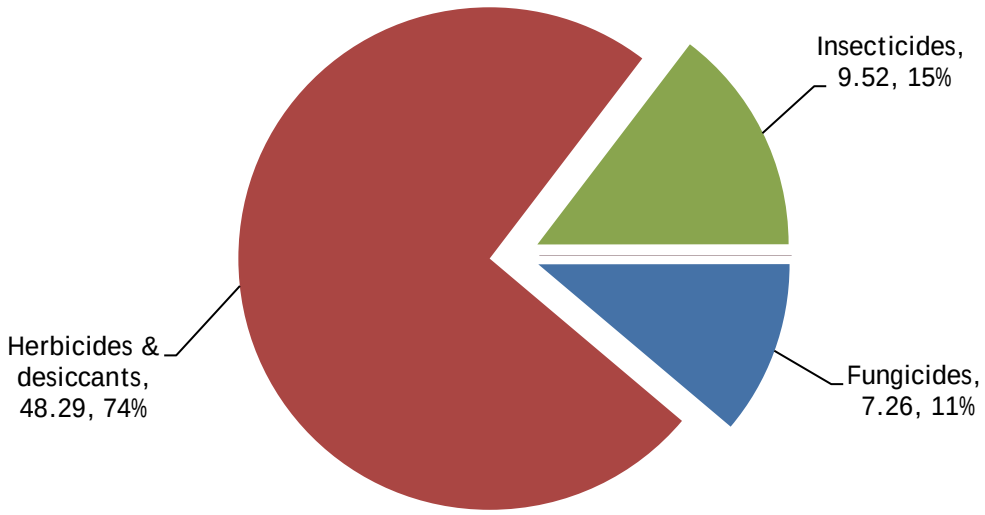
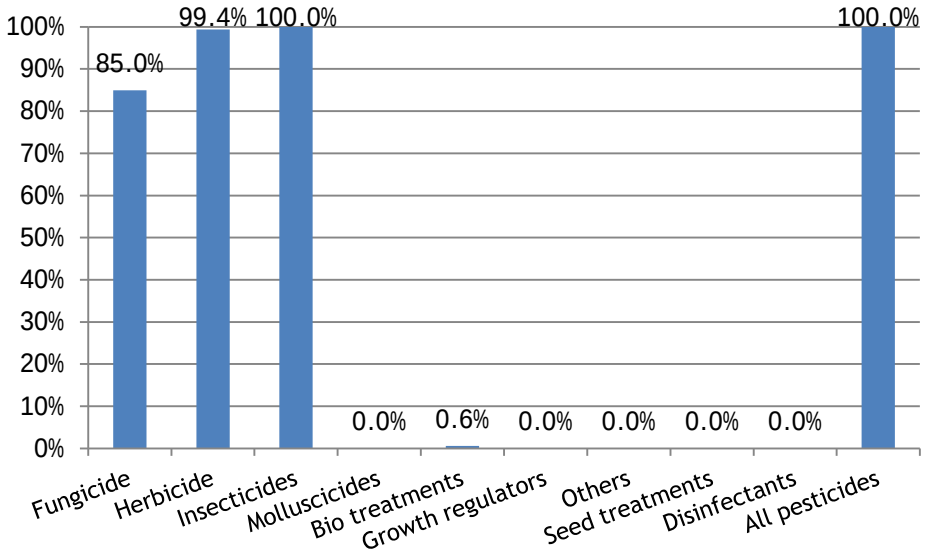


Figure 83: Proportional area of winter cabbage crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – winter cabbage

Basic area treated: 16.34 hectares
Area treated: 33.48 spray hectares
Weight of active substances applied: 7.26kg
85% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	22.703	16.214	1.46	68.28%
Azoxystrobin	9.725	9.725	1.216	29.25%
Chlorothalonil	0.262	0.121	0.318	0.79%
Fosetyl-aluminium	0.223	0.112	2.68	0.67%
Boscalid/pyraclostrobin	0.112	0.112	0.037	0.34%
Propamocarb hydrochloride	0.112	0.112	0.403	0.34%
Tolclofos-methyl	0.112	0.112	1.117	0.34%

Figure 84: Fungicide active substance usage on winter cabbage crops in Northern Ireland (spha), 2011.

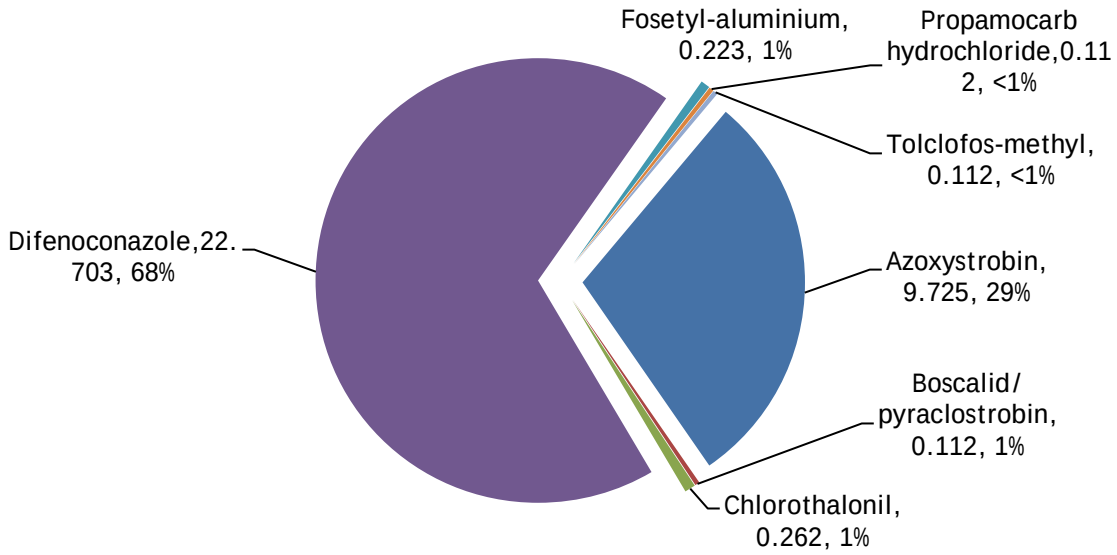


Figure 85: Weight of fungicide active substances applied to winter cabbage crops in Northern Ireland (kg), 2011.

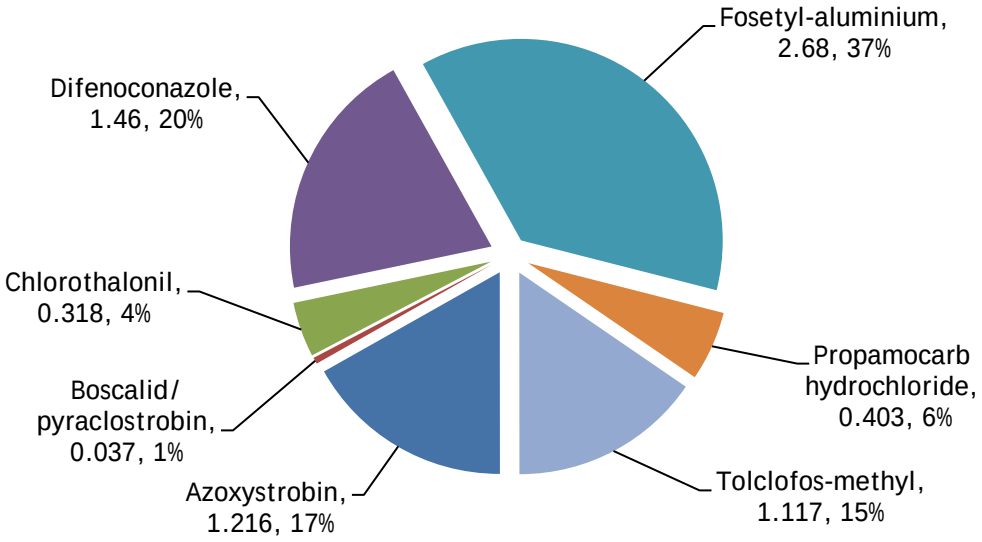
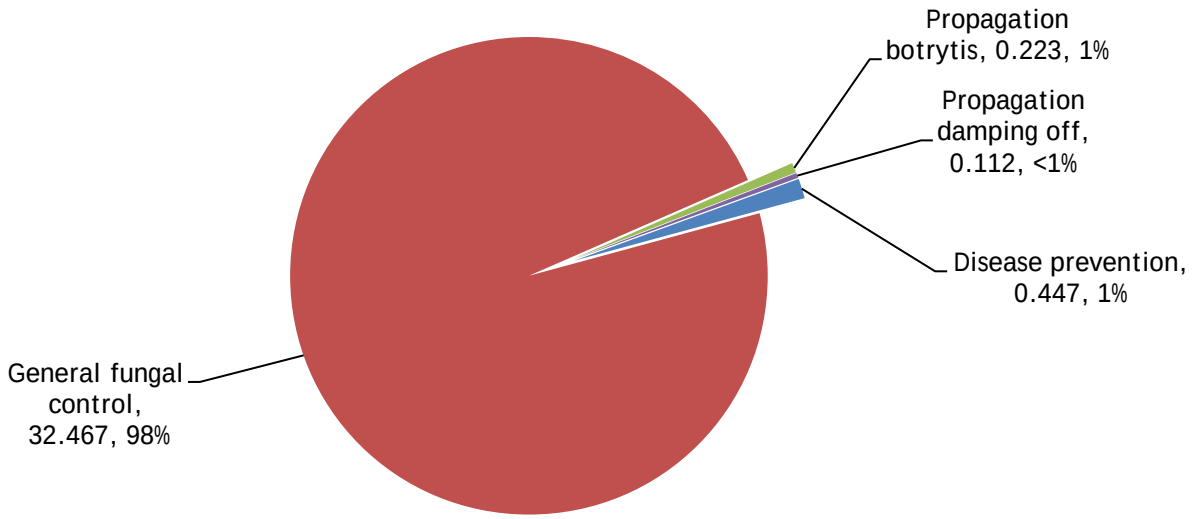


Figure 86: Winter cabbage: reasons for fungicide use (spha).



Herbicides & desiccants – winter cabbage

Basic area treated: 19.11 hectares
Area treated: 54.43 spray hectares
Weight of active substances applied: 48.29kg
99.4% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	19.106	19.106	11.574	35.10%
Propachlor	9.725	9.725	23.341	17.87%
Propyzamide	9.725	9.725	3.89	17.87%
Glyphosate	9.381	9.381	7.795	17.24%
Aminopyralid/fluroxypyr	6.489	6.489	1.687	11.92%

Figure 87: Herbicide & desiccant active substance usage on winter cabbage crops in Northern Ireland (spha), 2011.

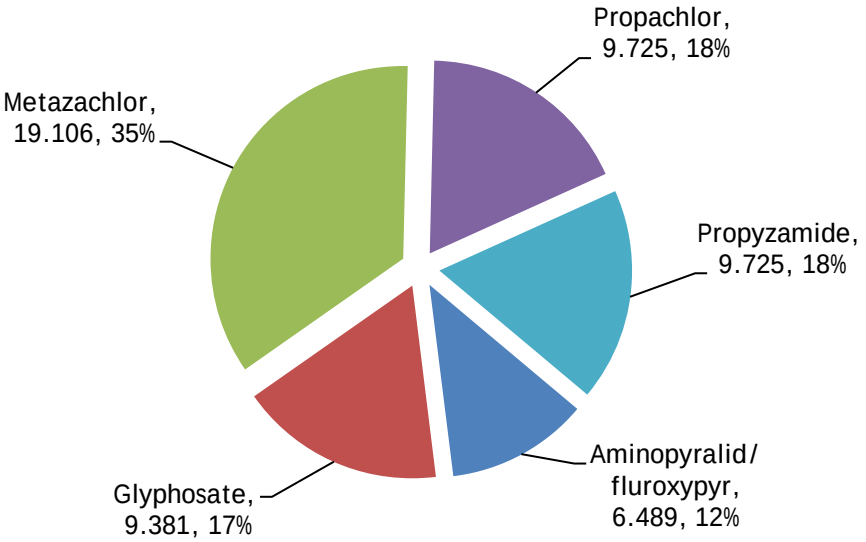


Figure 88: Weight of herbicide & desiccant active substances applied to winter cabbage crops in Northern Ireland (kg), 2011.

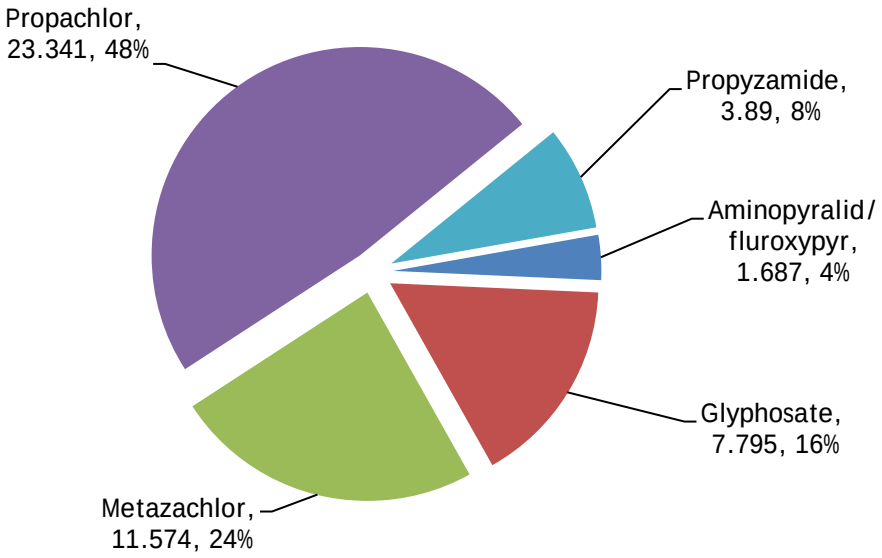
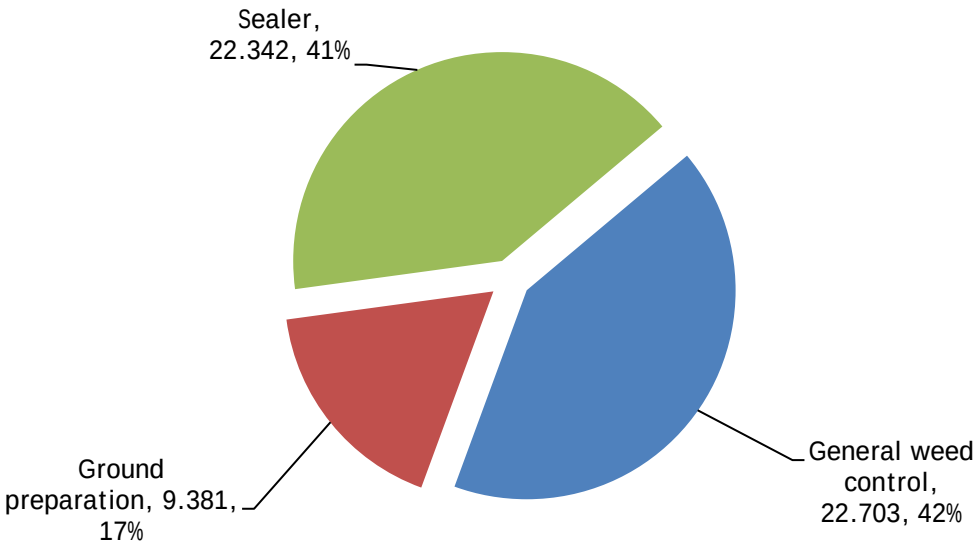


Figure 89: Winter cabbage: reasons for herbicide & desiccant use (spha).



Insecticides – winter cabbage

Basic area treated: 19.23 hectares
Area treated: 28.94 spray hectares
Weight of active substances applied: 9.52kg
100% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	15.62	12.729	0.083	53.97%
Pymetrozine	6.601	6.601	1.32	22.81%
Lambda-cyhalothrin/pirimicarb	6.489	6.489	1.363	22.42%
Chlorpyrifos	0.112	0.112	6.699	0.39%
Pirimicarb	0.112	0.112	0.023	0.39%

Figure 90: Insecticide active substance usage on winter cabbage crops in Northern Ireland (spha), 2011.

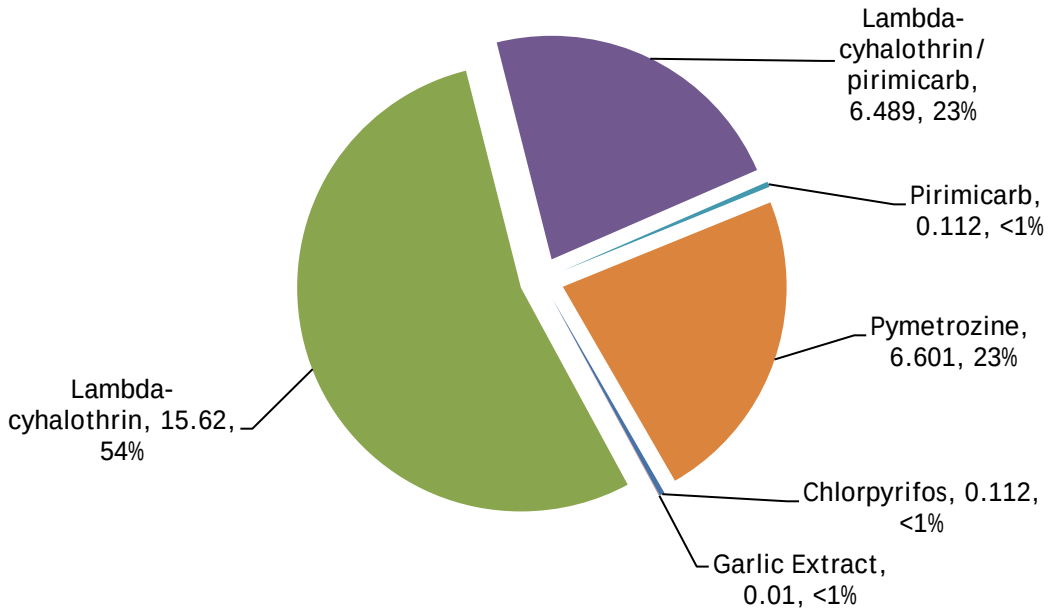


Figure 91: Weight of insecticide active substances applied to winter cabbage crops in Northern Ireland (kg), 2011.

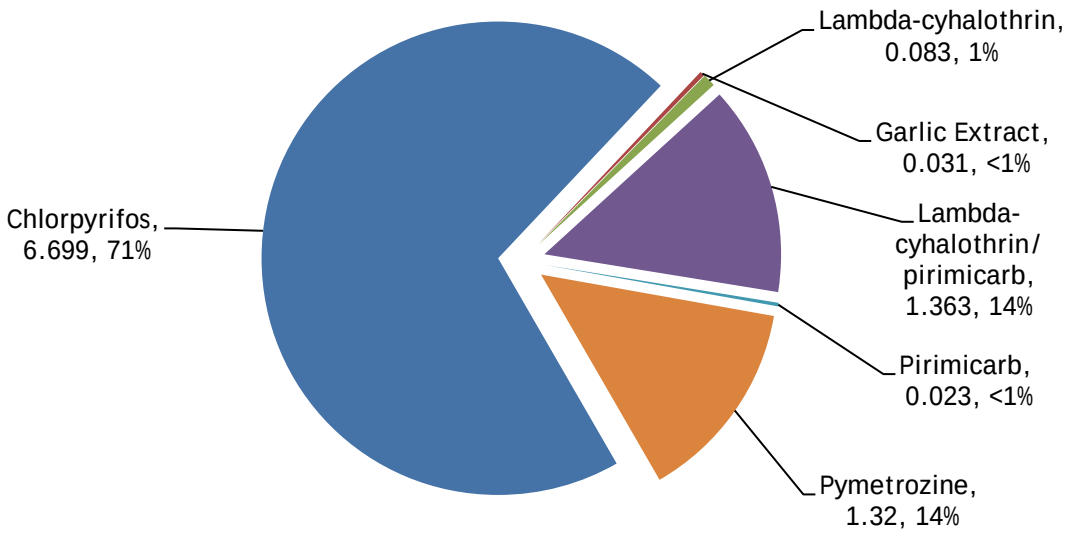
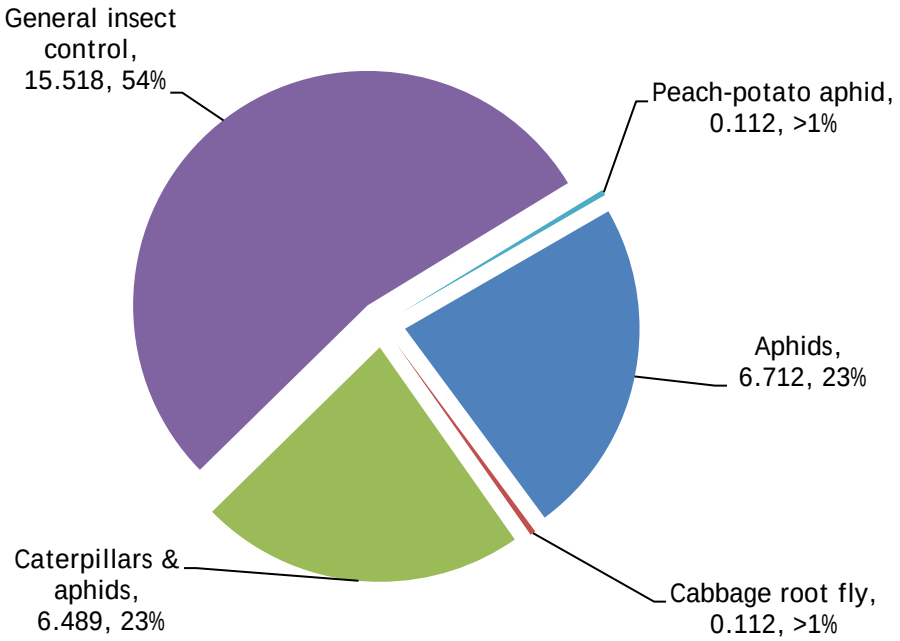


Figure 92: Winter cabbage: reasons for insecticide use (spha).



Biological controls – winter cabbage

Basic area treated: 0.112 hectares
Area treated: 0.112 spray hectares
0.6% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.112	0.112		

Pesticide Usage on summer cabbage crops:

16.36 hectares of summer cabbage crops grown in Northern Ireland

125.54 treated hectares

68.13kg applied

100% of crops received at least one treatment

Summer cabbage received on average 3.5 fungicide, 2.5 herbicide, 2.3 insecticide, 1.0 biological control applications.

Figure 93: Regional distribution of summer cabbage crops grown in Northern Ireland (ha), 1991 - 2011.

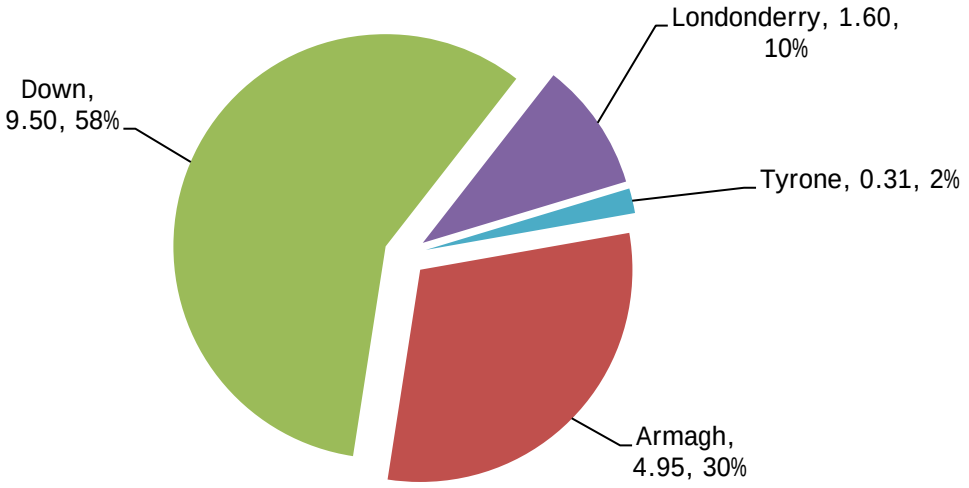


Figure 94: Pesticide usage on summer cabbage crops in Northern Ireland (spha), 2011.

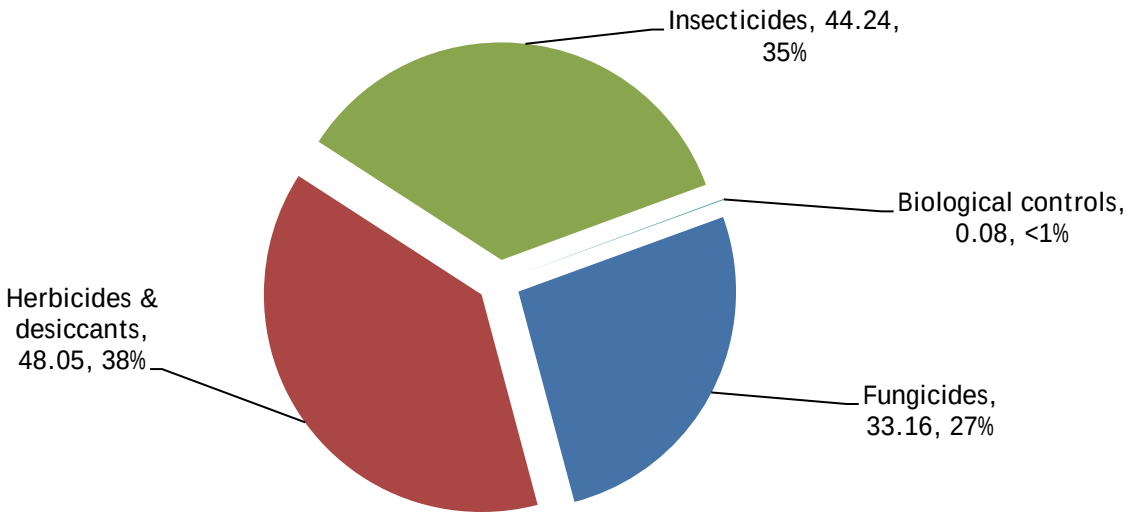


Figure 95: Weight of pesticides applied to summer cabbage crops in Northern Ireland (kg), 2011.

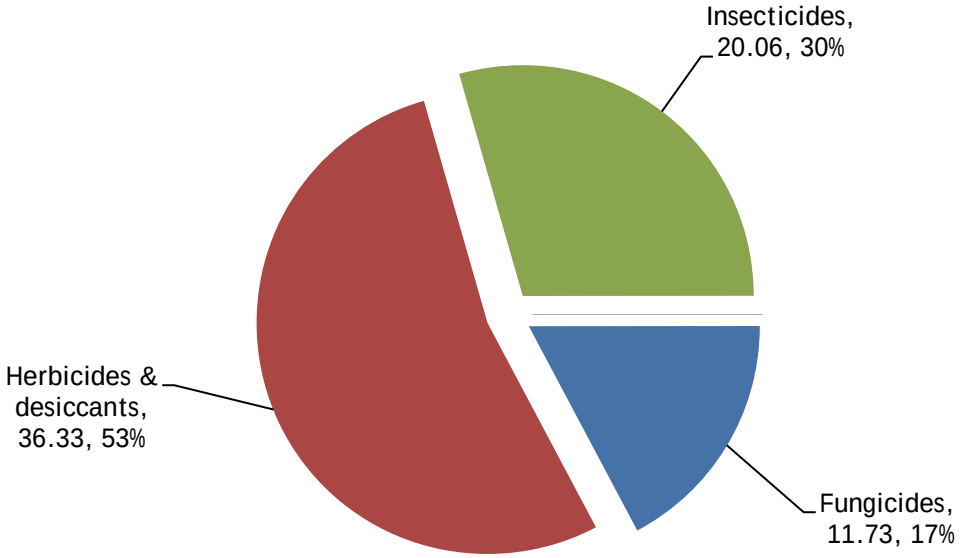
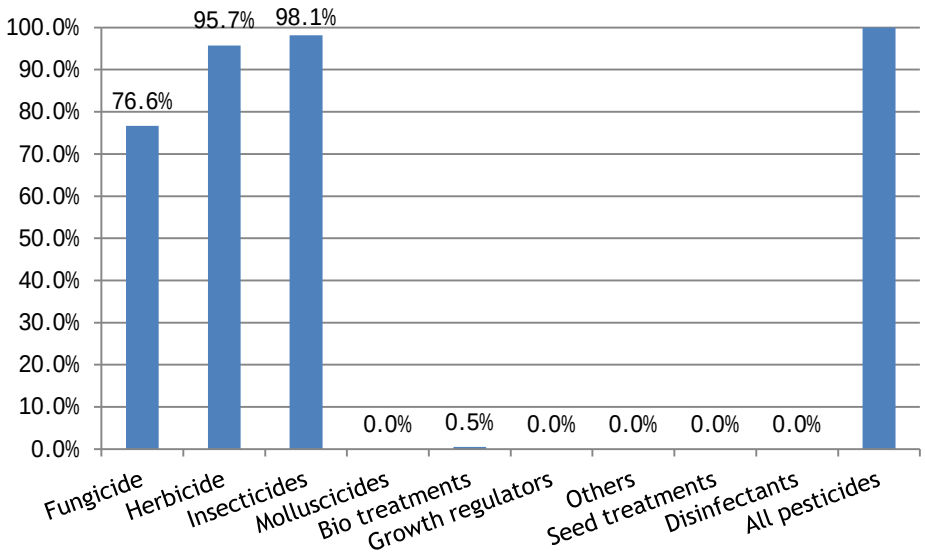


Figure 96: Proportional area of summer cabbage crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – summer cabbage

Basic area treated: 16.34 hectares
Area treated: 33.48 spray hectares
Weight of active substances applied: 11.73kg
76.6% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	16.786	12.447	1.259	50.88%
Azoxystrobin	6.942	3.471	1.562	21.04%
Chlorothalonil/metalaxyl-M	4.339	4.339	4.664	13.15%
Prothioconazole	4.339	4.339	0.833	13.15%
Chlorothalonil	0.168	0.084	0.209	0.51%
Fosetyl-aluminium	0.168	0.084	2.011	0.51%

Figure 97: Fungicide active substance usage on summer cabbage crops in Northern Ireland (spha), 2011.

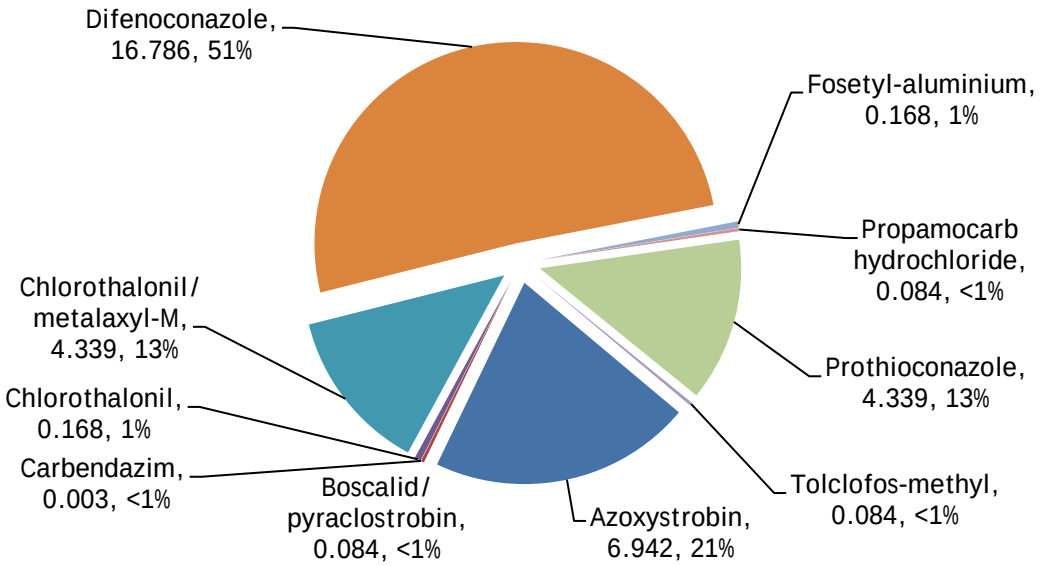


Figure 98: Weight of fungicide active substances applied to summer cabbage crops in Northern Ireland (kg), 2011.

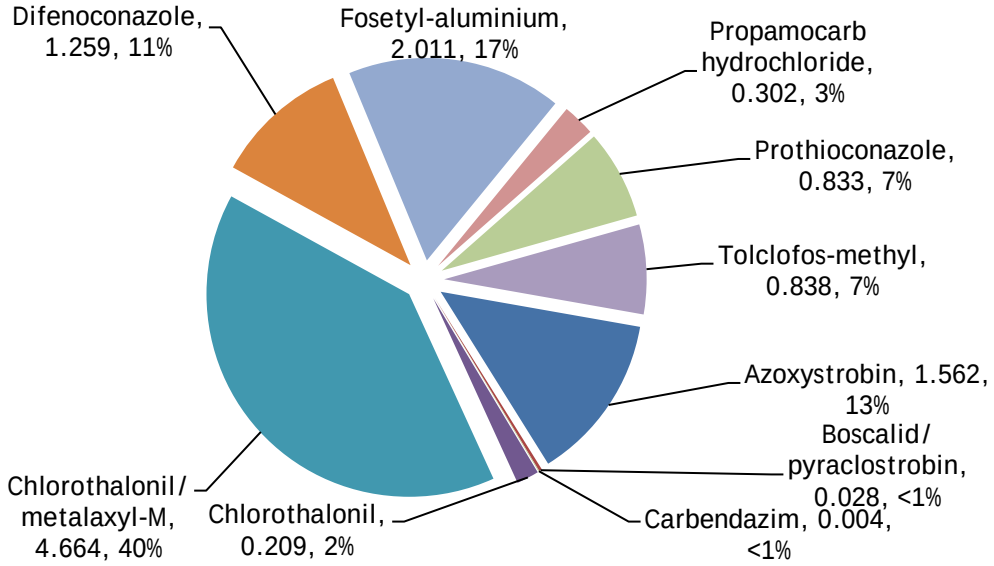
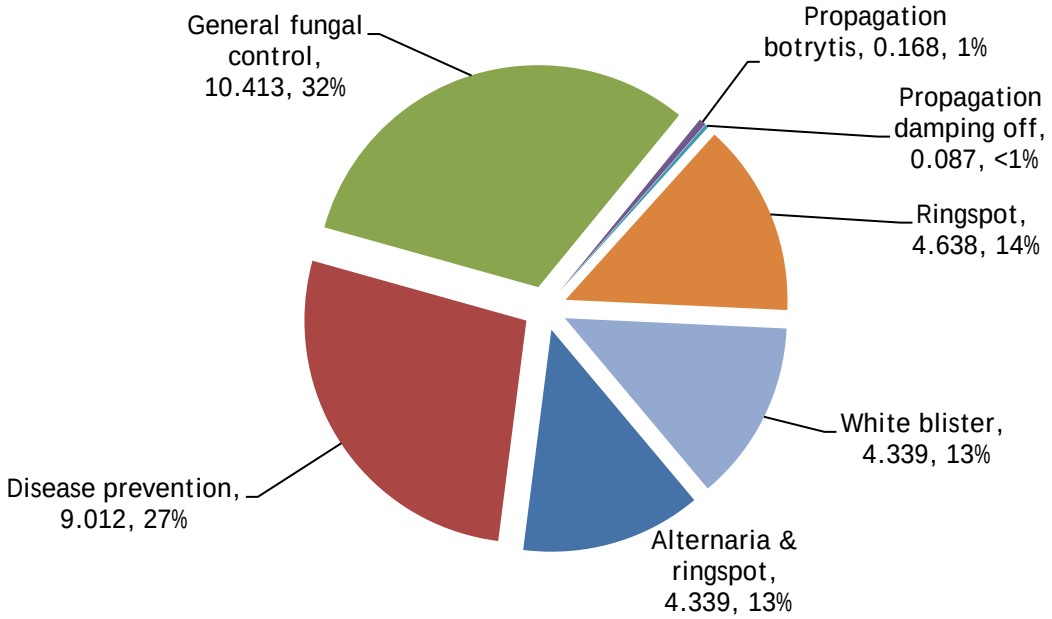


Figure 99: Summer cabbage: reasons for fungicide use (spha).



Herbicides & desiccants – summer cabbage

Basic area treated: 15.66 hectares
Area treated: 48.05 spray hectares
Weight of active substances applied: 36.33kg
95.7% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	22.289	15.347	16.717	46.38%
Glyphosate	10.582	10.582	14.047	22.02%
Clomazone	10.413	3.471	0.725	21.67%
Pendimethalin	3.471	3.471	4.582	7.22%
Diquat	1.298	1.298	0.26	2.70%

Figure 100: Herbicide & desiccant active substance usage on summer cabbage crops in Northern Ireland (spha), 2011.

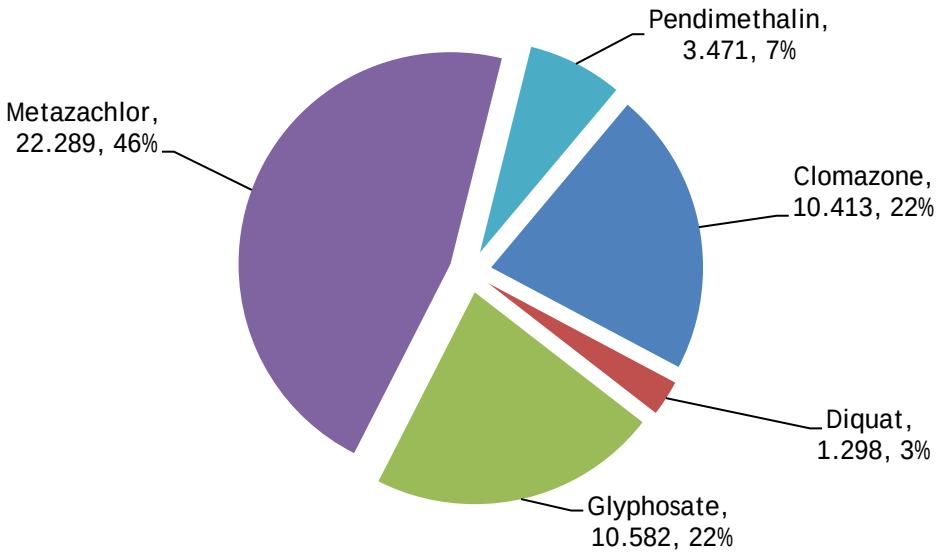


Figure 101: Weight of herbicide & desiccant active substances applied to summer cabbage crops in Northern Ireland (kg), 2011.

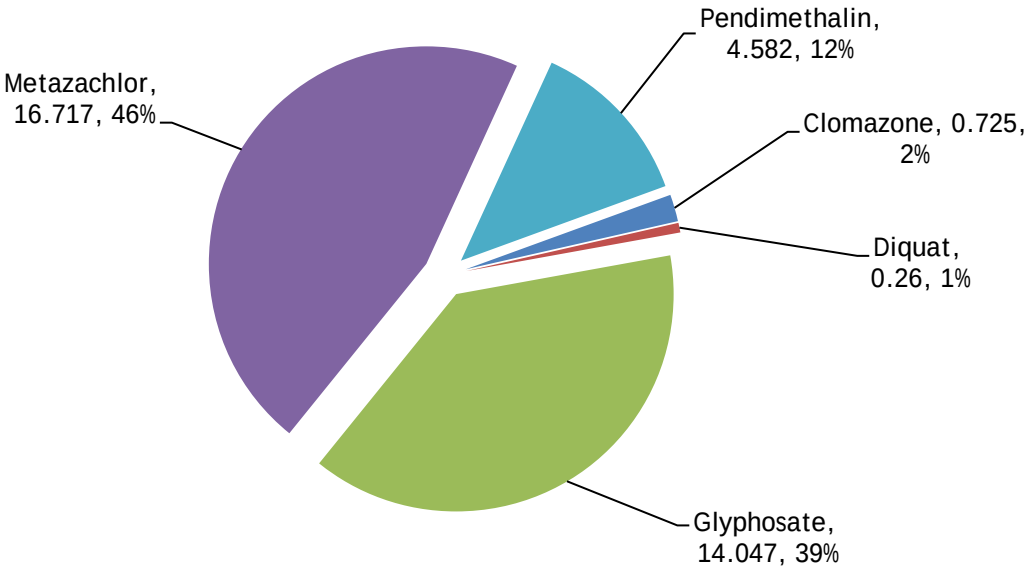
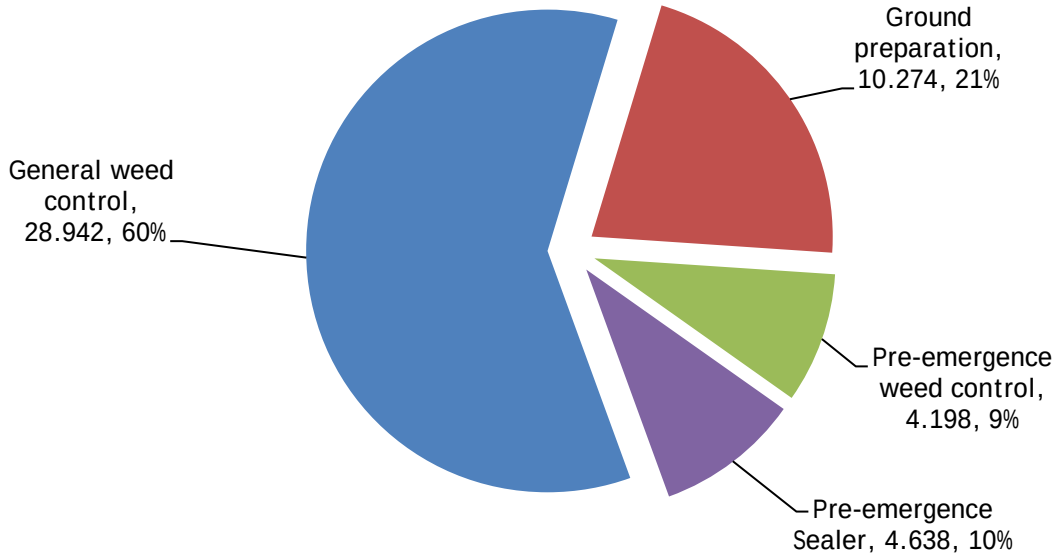


Figure 102: Summer cabbage: reasons for herbicide & desiccant use (spha).



Insecticides – summer cabbage

Basic area treated: 16.05 hectares
Area treated: 44.24 spray hectares
Weight of active substances applied: 20.06kg
98.1% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin/pirimicarb	9.407	9.407	1.894	21.26%
Pirimicarb	7.893	7.893	0.972	17.84%
Indoxacarb	6.942	3.471	0.177	15.69%
Lambda-cyhalothrin	6.025	6.025	0.031	13.62%
Deltamethrin	5.381	5.381	0.04	12.16%

Figure 103: Insecticide active substance usage on summer cabbage crops in Northern Ireland (spha), 2011.

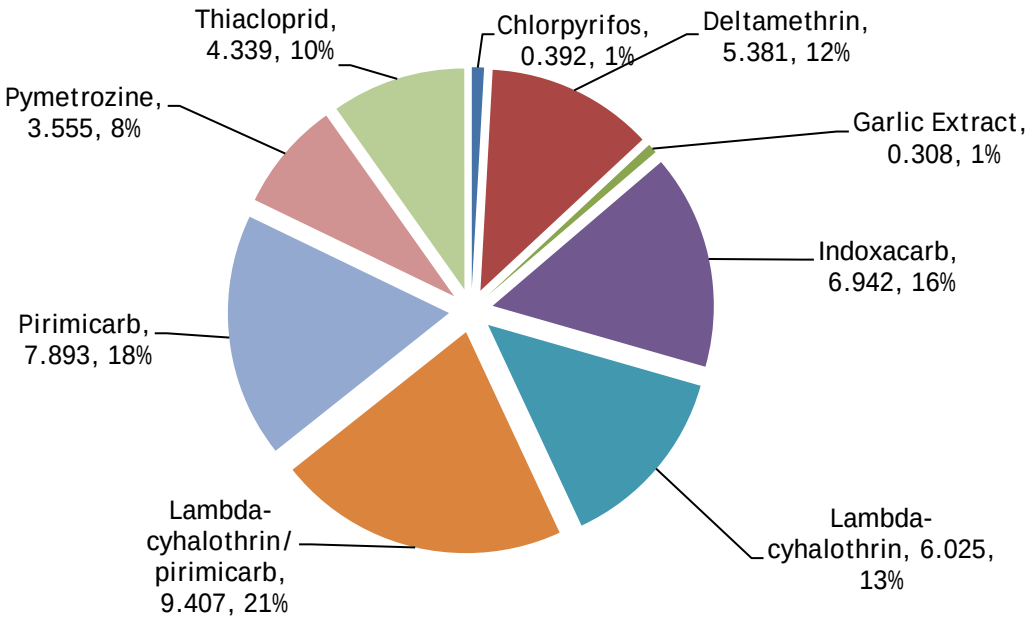


Figure 104: Weight of insecticide active substances applied to summer cabbage crops in Northern Ireland (kg), 2011.

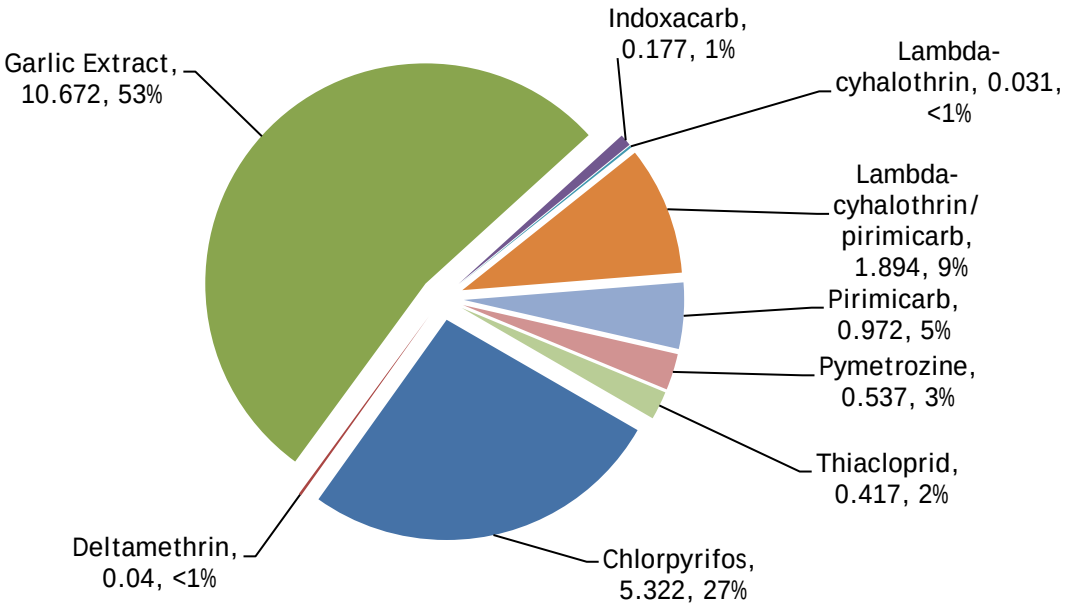
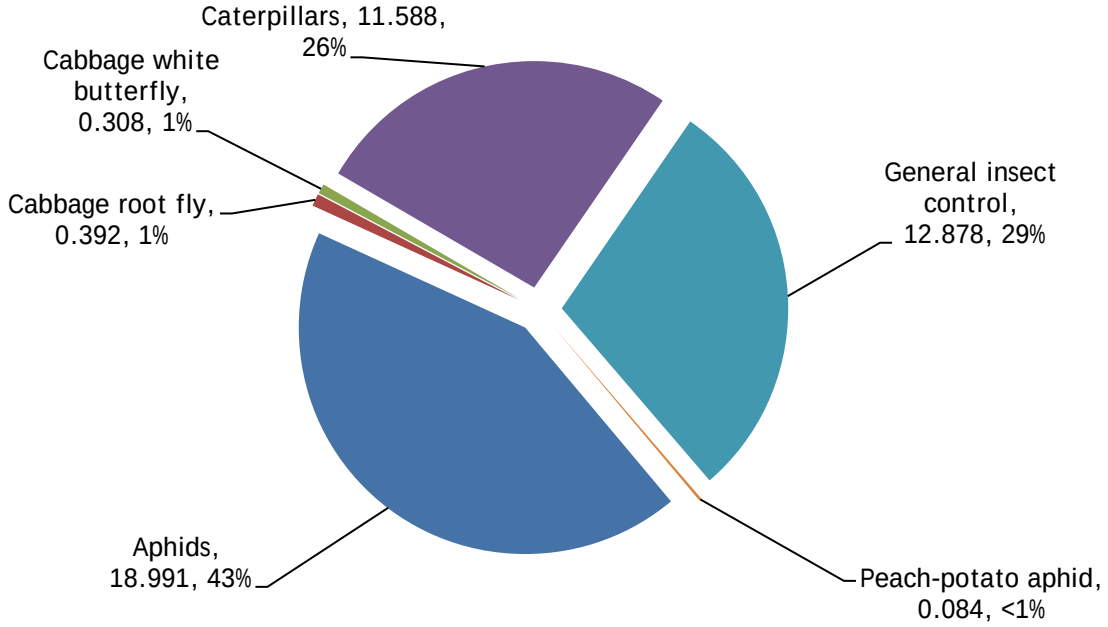


Figure 105: Summer cabbage: reasons for insecticide use (spha).



Biological controls – summer cabbage

Basic area treated: 0.084 hectares
Area treated: 0.084 spray hectares
0.5% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.084	0.084		

Pesticide Usage on savoy cabbage crops:

121.63 hectares of savoy cabbage crops grown in Northern Ireland

759.87 treated hectares

359.54kg applied

83.8% of crops received at least one treatment

Savoy cabbage received on average 2.9 fungicide, 2.0 herbicide, 2.0 insecticide, 1.0 molluscicide, 1.0 seed treatment and 1.0 biological control applications.

Figure 106: Regional distribution of savoy cabbage crops grown in Northern Ireland (ha), 1991 - 2011.

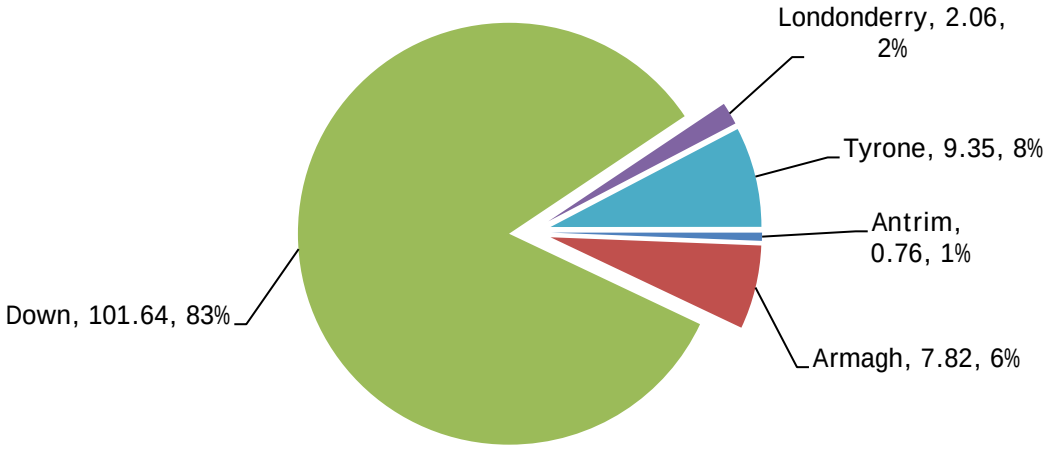


Figure 107: Pesticide usage on savoy cabbage crops in Northern Ireland (spha), 2011.

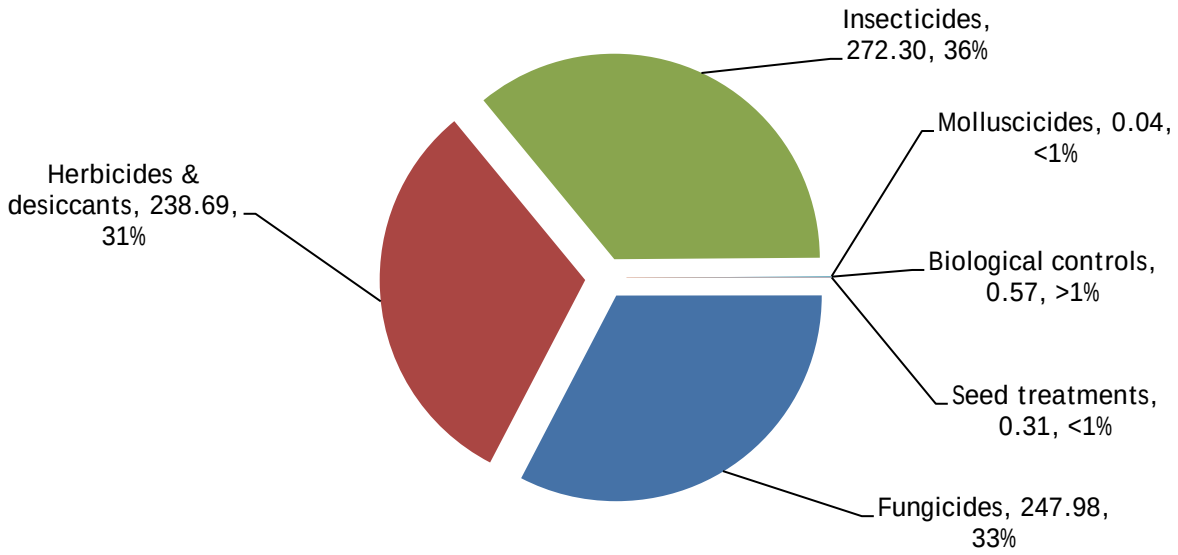


Figure 108: Weight of pesticides applied to savoy cabbage crops in Northern Ireland (kg), 2011.

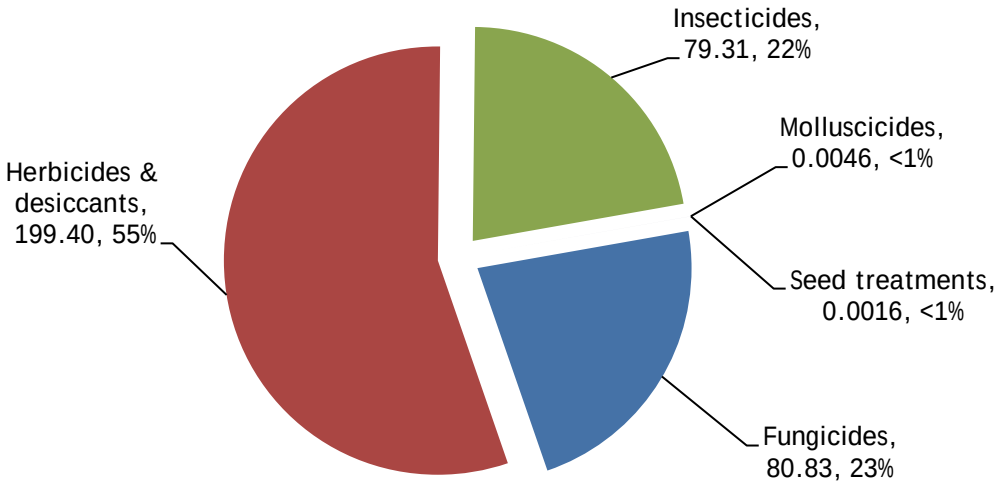
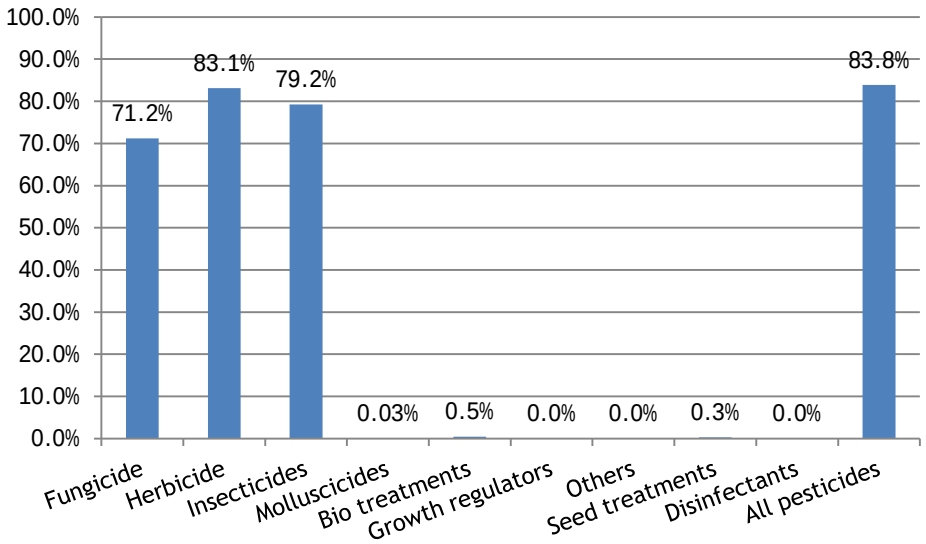


Figure 109: Proportional area of savoy cabbage crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – savoy cabbage

Basic area treated: 86.6 hectares
Area treated: 247.98 spray hectares
Weight of active substances applied: 80.83kg
71.2% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	132.284	75.881	9.759	53.60%
Azoxystrobin	32.52	15.166	6.885	13.18%
Azoxystrobin/difenoconazole	23.895	23.895	7.766	9.68%
Prothioconazole	17.33	17.33	3.327	7.02%
Chlorothalonil/metalaxyl-M	15.298	14.99	16.446	6.20%

Figure 110: Fungicide active substance usage on savoy cabbage crops in Northern Ireland (spha), 2011.

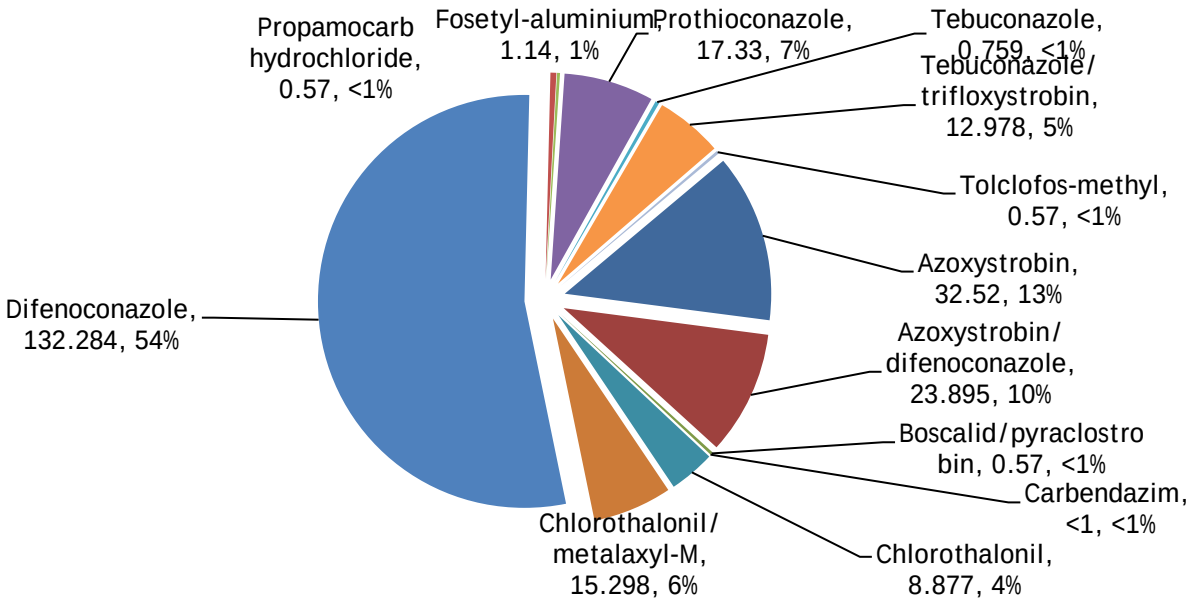


Figure 110: Weight of fungicide active substances applied to savoy cabbage crops in Northern Ireland (kg), 2011.

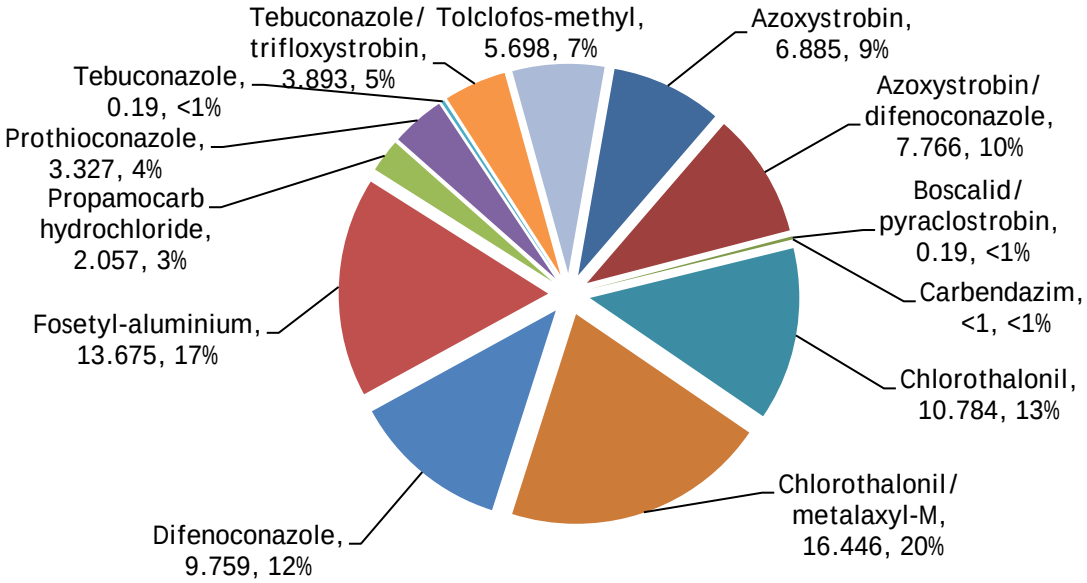
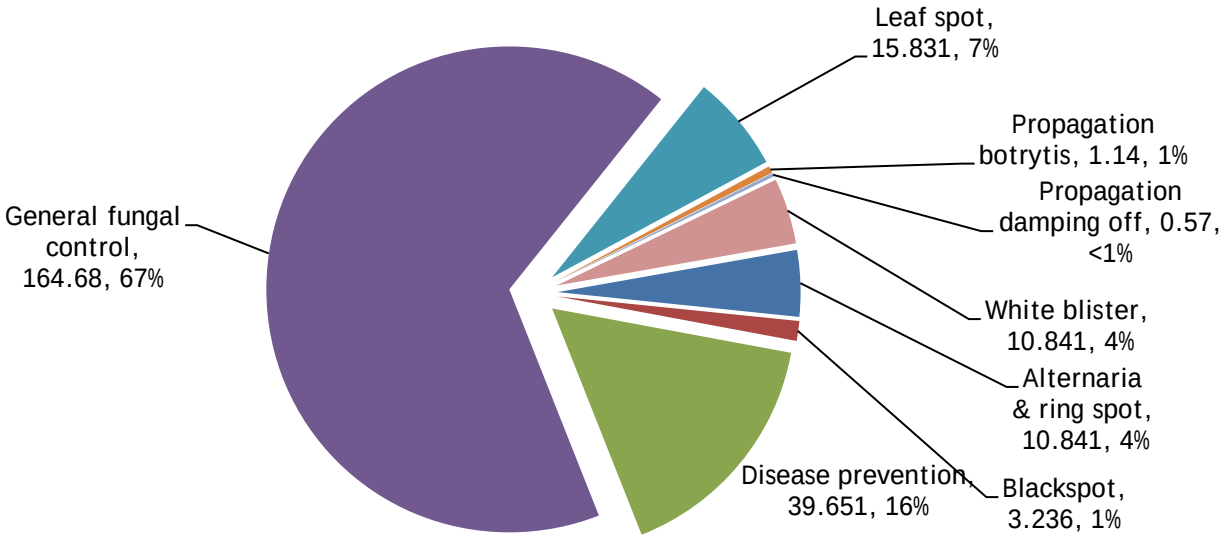


Figure 112: Savoy cabbage: reasons for fungicide use (spha).



Herbicides & desiccants – savoy cabbage

Basic area treated: 101.06 hectares
Area treated: 238.69 spray hectares
Weight of active substances applied: 199.40kg
83.1% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	109.023	91.361	75.321	45.68%
Glyphosate	59.219	58.576	72.172	24.81%
Clomazone	26.031	8.677	1.812	10.91%
Pendimethalin	18.168	18.168	19.35	7.61%
Propachlor	15.221	15.221	28.148	6.38%

Figure 113: Herbicide & desiccant active substance usage on savoy cabbage crops in Northern Ireland (spha), 2011.

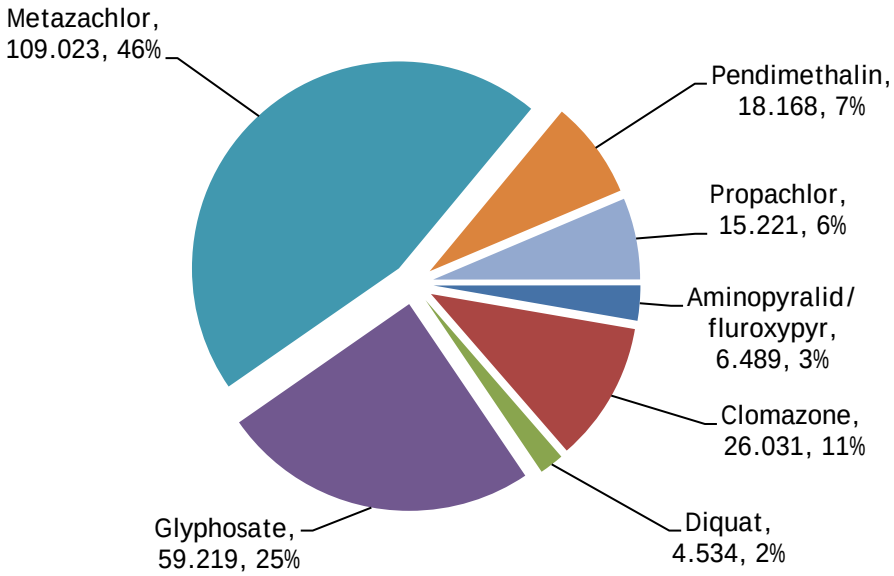


Figure 114: Weight of herbicide & desiccant active substances applied to savoy cabbage crops in Northern Ireland (kg), 2011.

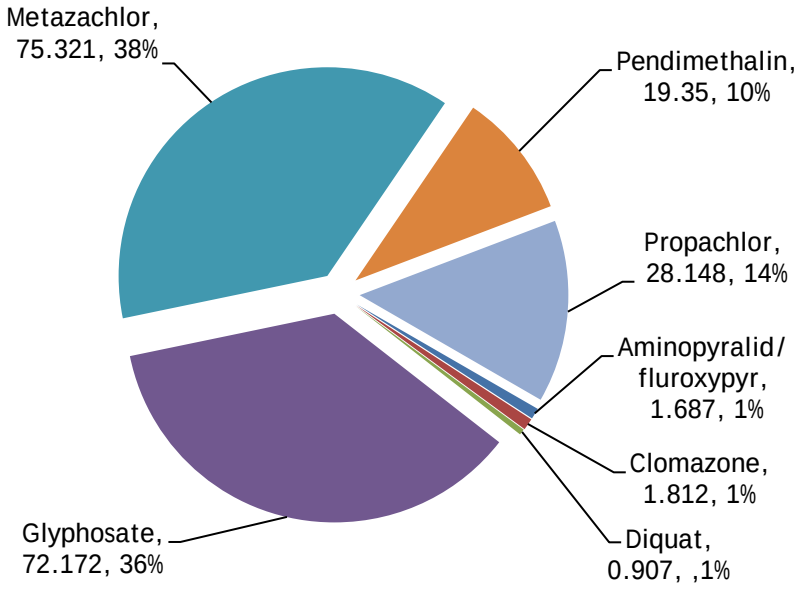
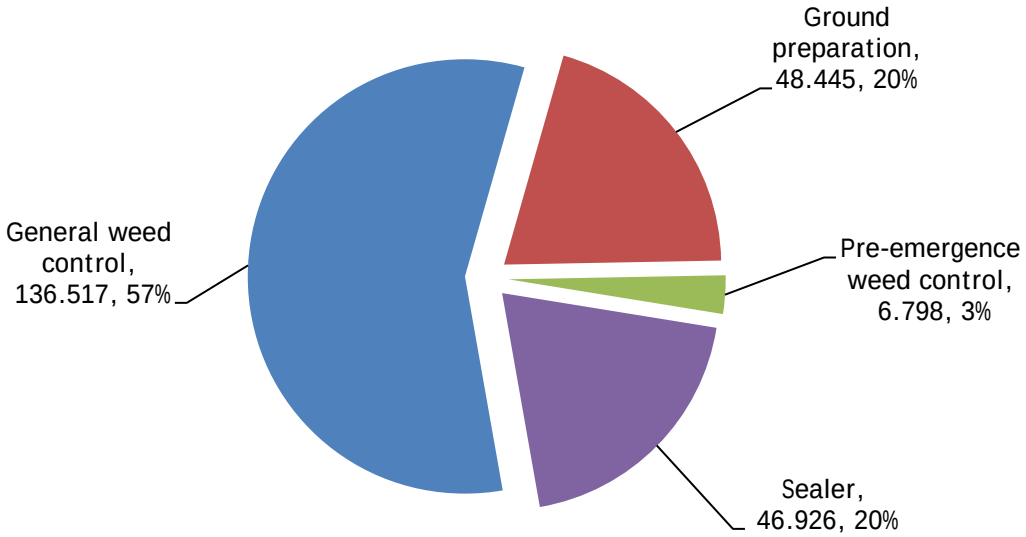


Figure 115: Savoy cabbage: reasons for herbicide & desiccant use (spha).



Insecticides – savoy cabbage

Basic area treated: 96.38 hectares
Area treated: 272.30 spray hectares
Weight of active substances applied: 79.31kg
79.2% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pirimicarb	48.219	22.263	9.171	17.71%
Cypermethrin	43.923	15.473	1.098	16.13%
Lambda-cyhalothrin	42.418	35.755	0.246	15.58%
Lambda-cyhalothrin/pirimicarb	37.966	37.966	6.958	13.94%
Pymetrozine	30.902	22.225	5.313	11.35%

Figure 116: Insecticide active substance usage on savoy cabbage crops in Northern Ireland (spha), 2011.

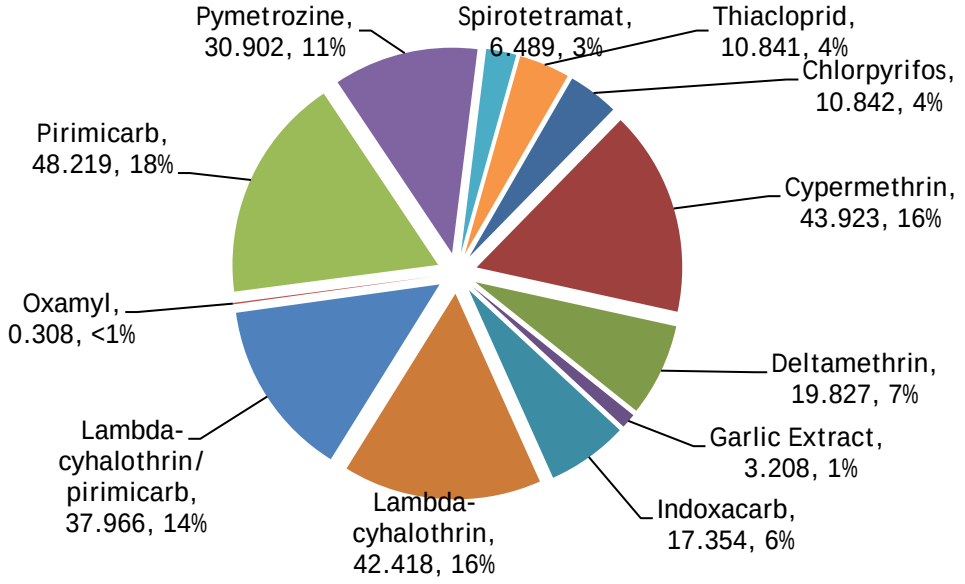


Figure 117: Weight of insecticide active substances applied to savoy cabbage crops in Northern Ireland (kg), 2011.

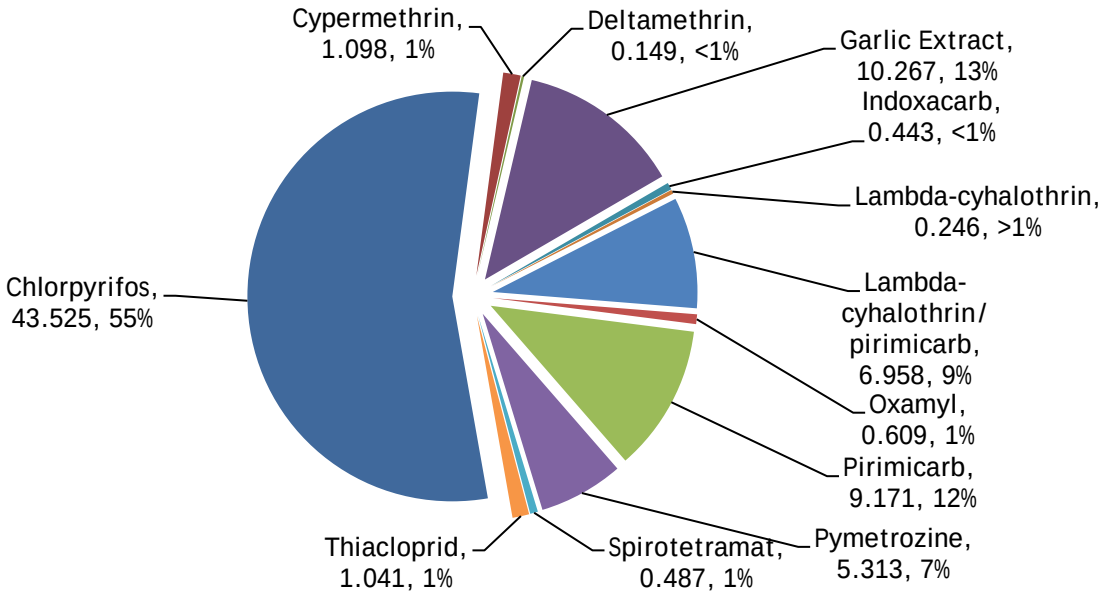
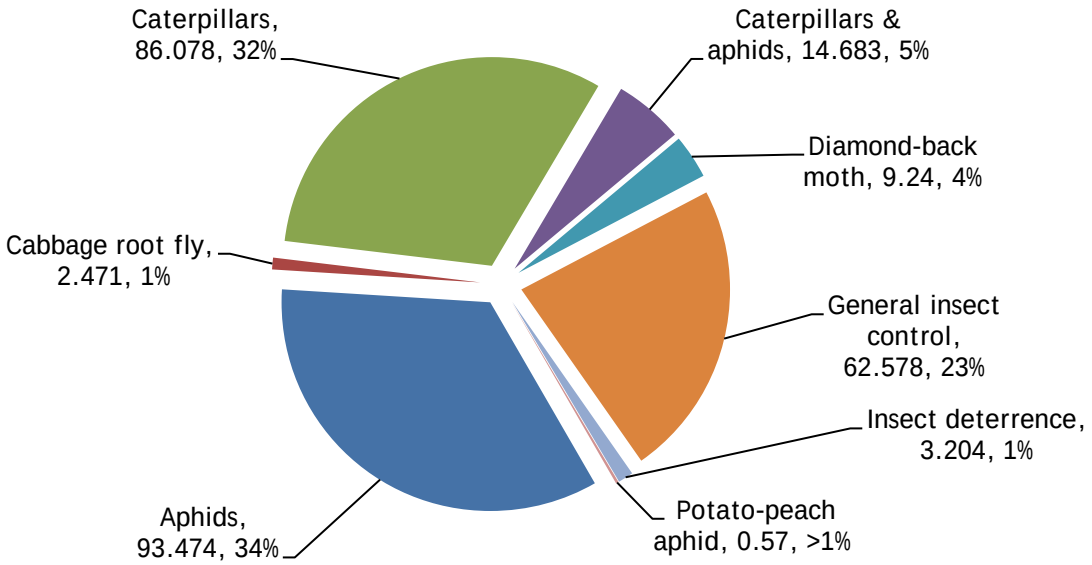


Figure 118: Savoy cabbage: reasons for insecticide use (spha).



Molluscicides – savoy cabbage

Basic area treated: 0.039 hectares
Area treated: 0.039 spray hectares
Weight of active substances applied: 0.005kg
0.03% of the area grown treated molluscicides
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Methiocarb	0.039	0.039	0.005	

Biological controls – savoy cabbage

Basic area treated: 0.57 hectares
Area treated: 0.57 spray hectares
0.5% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.57	0.57		

Pesticide Usage on white cabbage crops:

51.01 hectares of white cabbage crops grown in Northern Ireland

485.92 treated hectares

226.56kg applied

95.8% of crops received at least one treatment

White cabbage received on average 4.2 fungicide, 2.2 herbicide, 3.7 insecticide and 1.0 biological control applications.

Figure 119: Regional distribution of white cabbage crops grown in Northern Ireland (ha), 1991 - 2011.

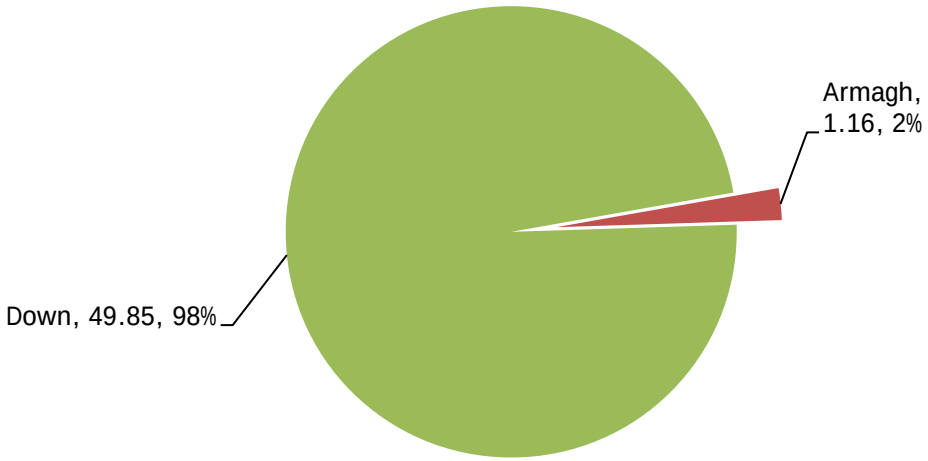


Figure 120: Pesticide usage on white cabbage crops in Northern Ireland (spha), 2011.

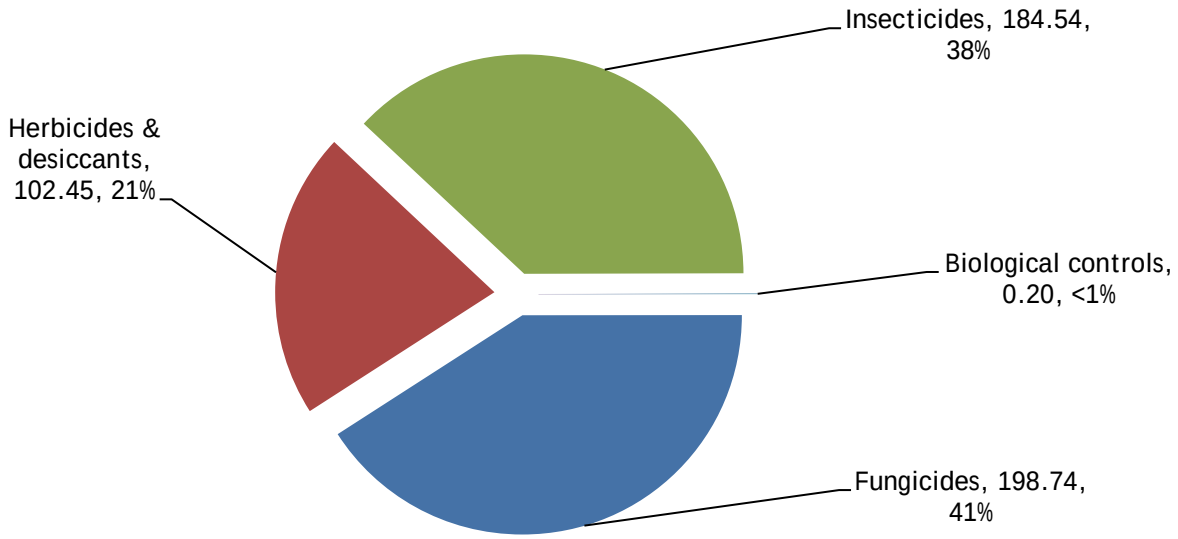


Figure 121: Weight of pesticides applied to white cabbage crops in Northern Ireland (kg), 2011.

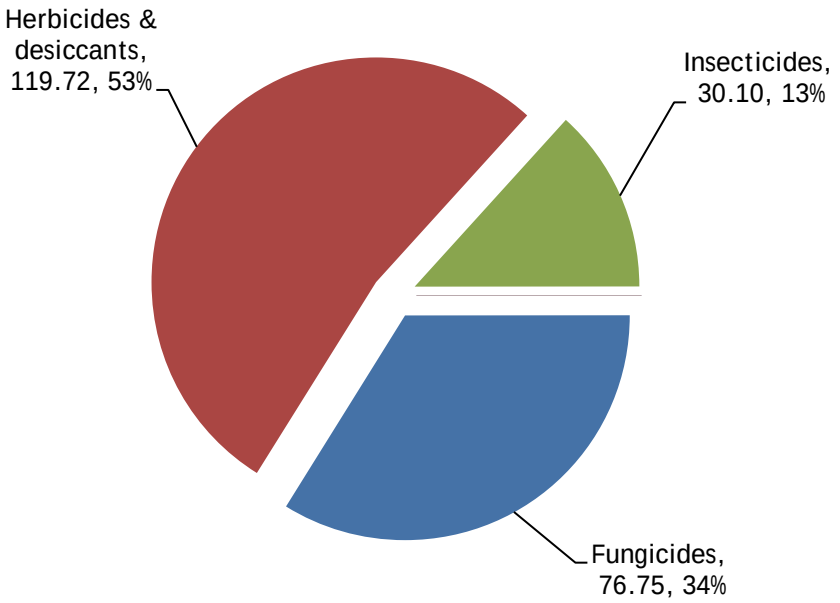
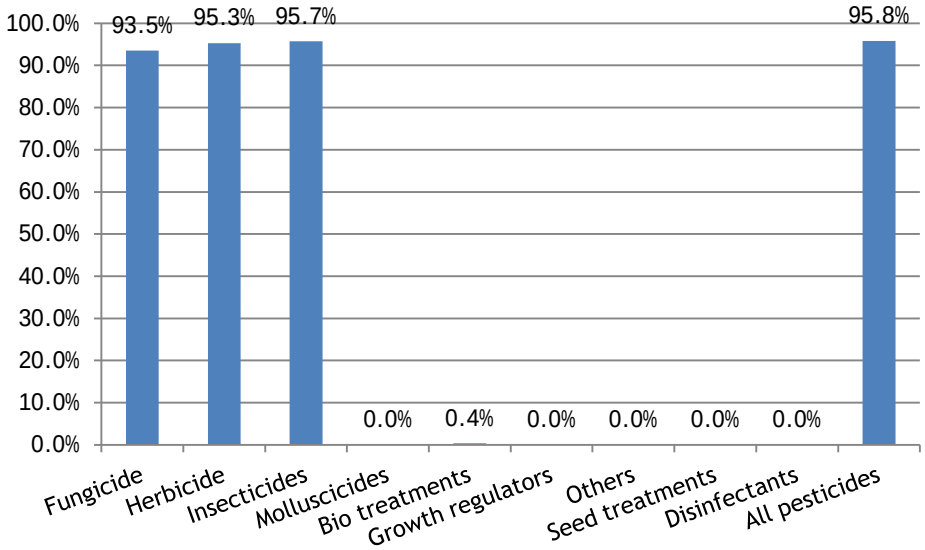


Figure 122: Proportional area of white cabbage crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – white cabbage

Basic area treated: 47.70 hectares
Area treated: 198.74 spray hectares
Weight of active substances applied: 76.75kg
93.5% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	78.211	47.45	5.866	39.44%
Azoxystrobin/difenoconazole	28.793	14.492	9.358	14.52%
Chlorothalonil/metalaxyl-M	27.508	27.508	29.571	13.87%
Prothioconazole	22.741	22.741	4.366	11.47%
Azoxystrobin	14.912	3.728	3.355	7.52%

Figure 123: Fungicide active substance usage on white cabbage crops in Northern Ireland (spha), 2011.

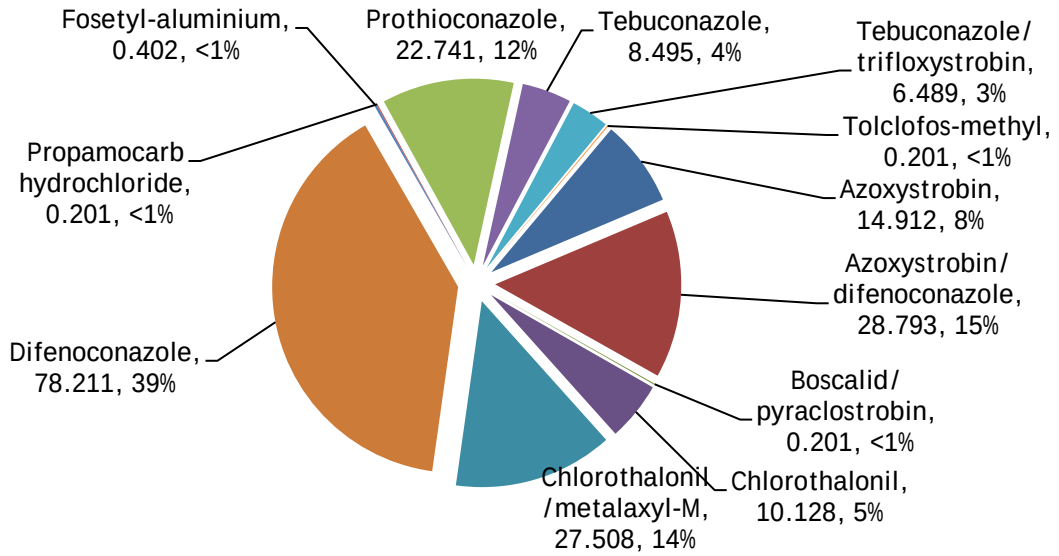


Figure 124: Weight of fungicide active substances applied to white cabbage crops in Northern Ireland (kg), 2011.

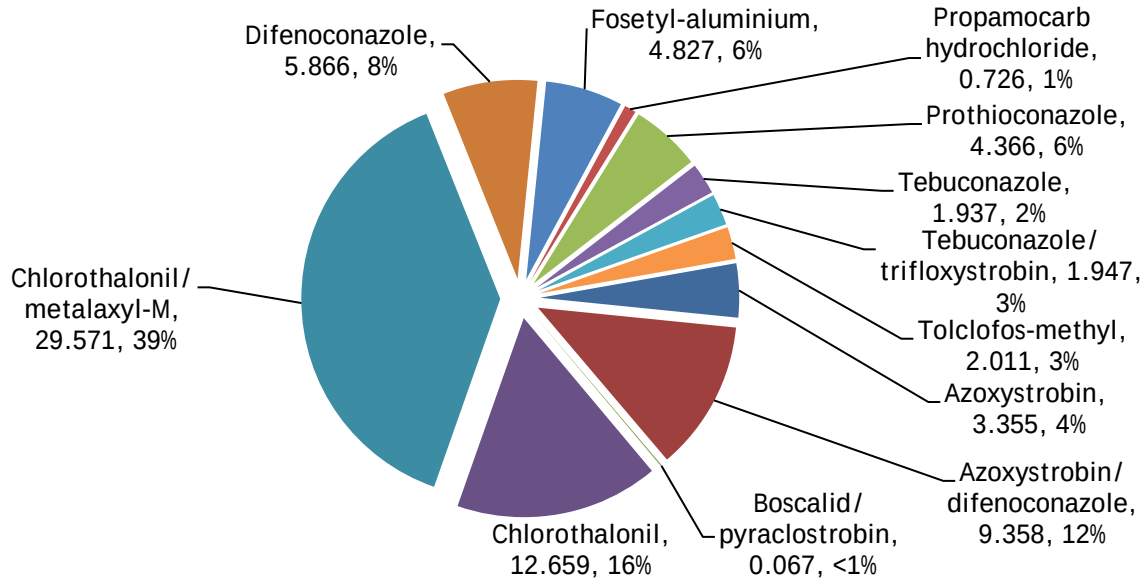
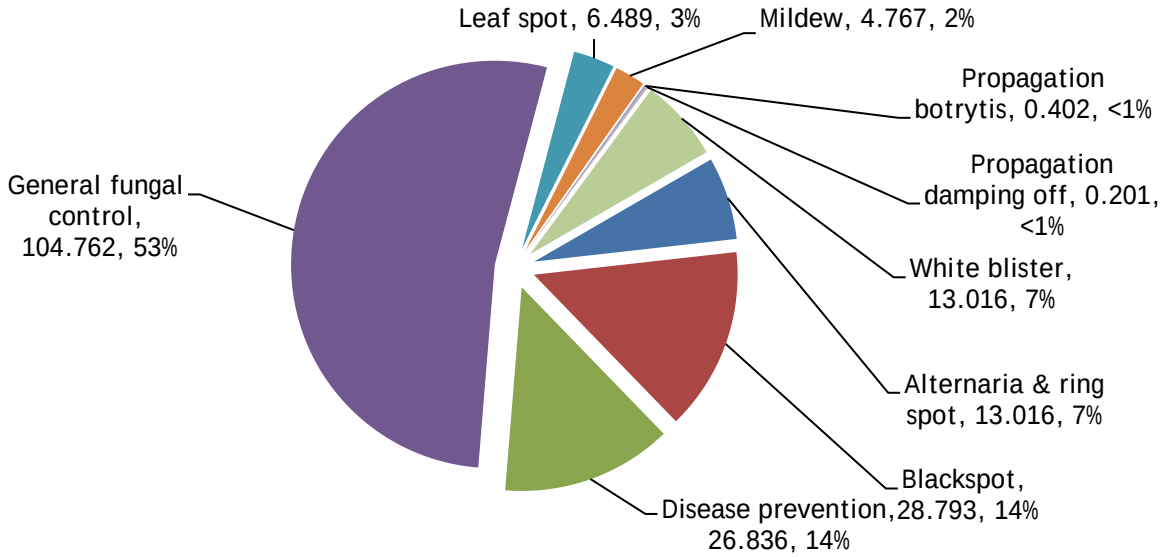


Figure 125: White cabbage: reasons for fungicide use (spha).



Herbicides & desiccants – white cabbage

Basic area treated: 48.61 hectares
Area treated: 102.45 spray hectares
Weight of active substances applied: 119.72kg
95.3% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	41.573	34.117	31.18	40.58%
Glyphosate	41.199	36.432	55.378	40.21%
Clomazone	11.184	3.728	0.778	10.92%
Propachlor	4.767	4.767	27.458	4.65%
Pendimethalin	3.728	3.728	4.921	3.64%

Figure 126: Herbicide & desiccant active substance usage on white cabbage crops in Northern Ireland (spha), 2011.

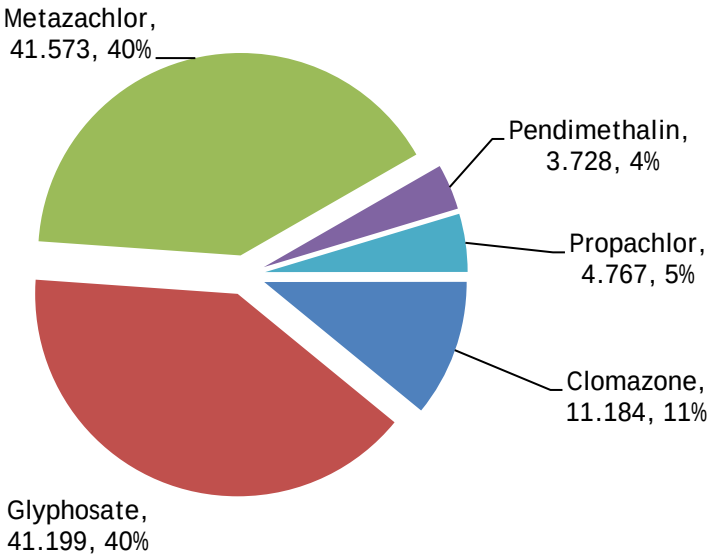


Figure 127: Weight of herbicide & desiccant active substances applied to white cabbage crops in Northern Ireland (kg), 2011.

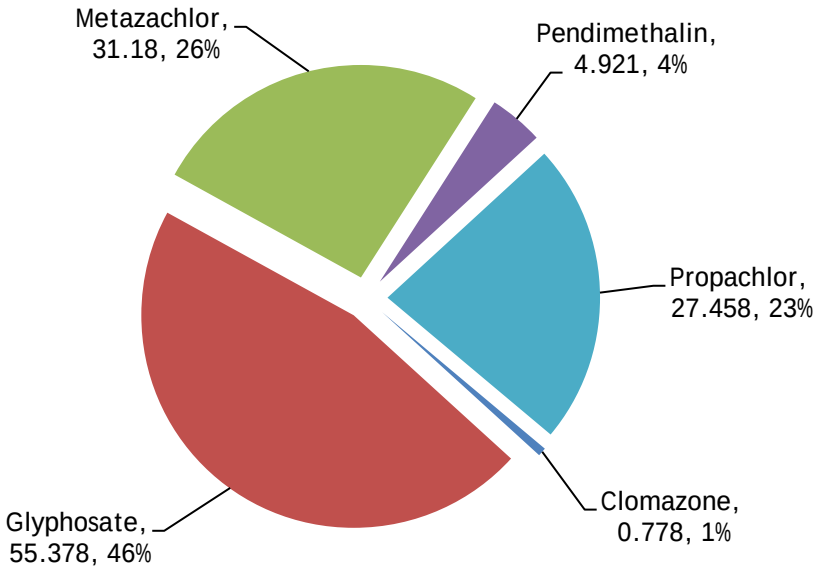
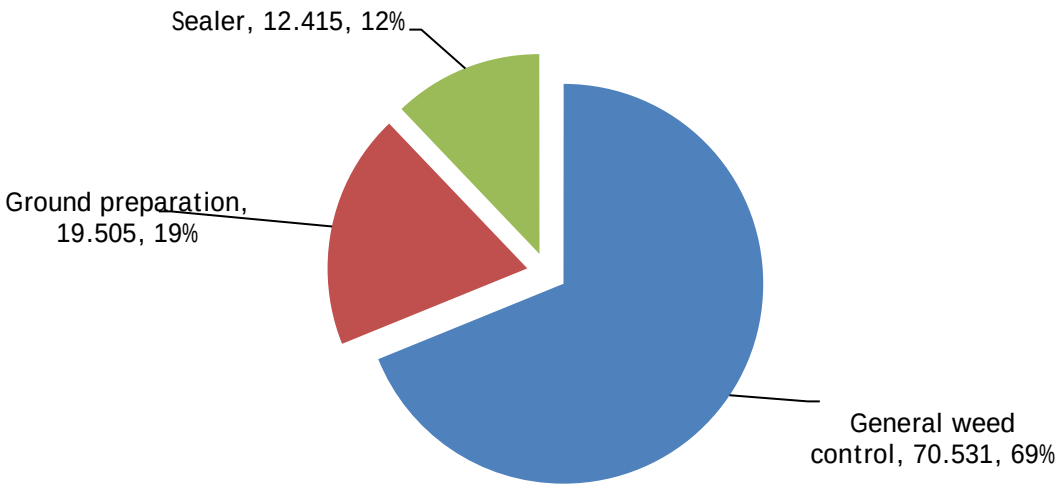


Figure 128: White cabbage: reasons for herbicide & desiccant use (spha).



Insecticides – white cabbage

Basic area treated: 48.81 hectares
Area treated: 184.54 spray hectares
Weight of active substances applied: 30.10kg
95.7% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	40.78	21.712	0.443	22.10%
Pirimicarb	39.938	23.232	7.029	21.64%
Lambda-cyhalothrin/pirimicarb	24.338	24.338	4.798	13.19%
Thiacloprid	22.751	17.984	2.184	12.33%
Cypermethrin	19.467	6.489	0.487	10.55%

Figure 129: Insecticide active substance usage on white cabbage crops in Northern Ireland (spha), 2011.

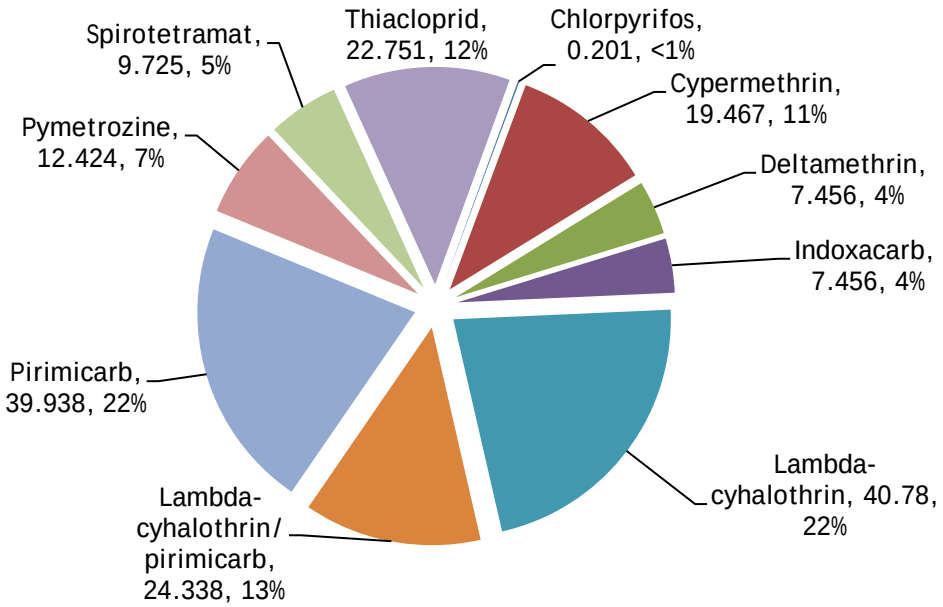


Figure 130: Weight of insecticide active substances applied to white cabbage crops in Northern Ireland (kg), 2011.

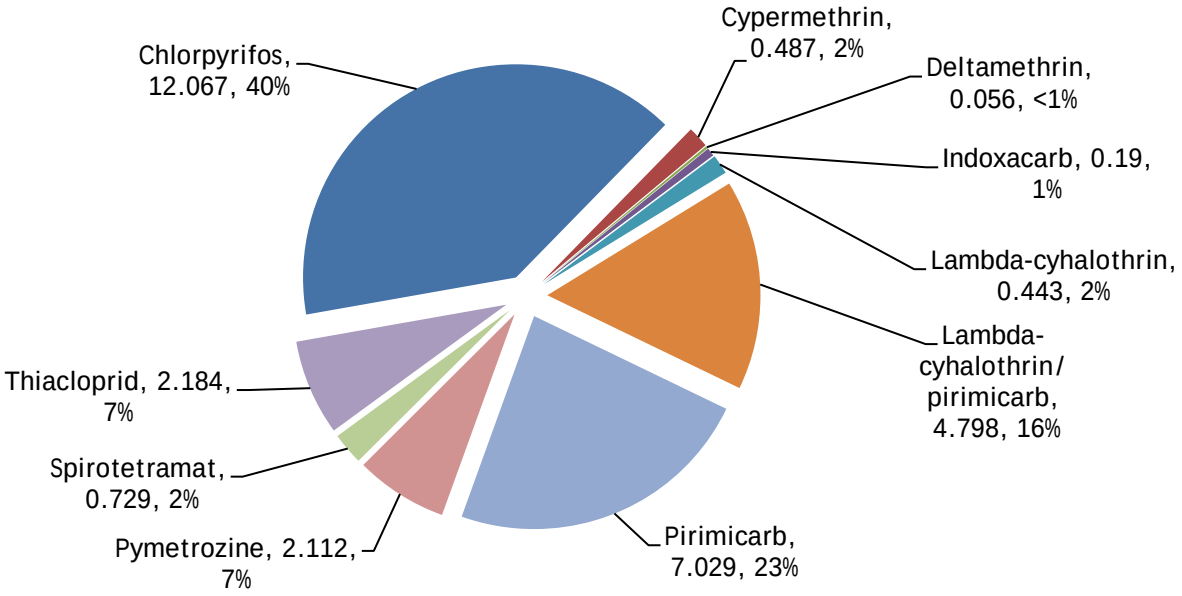
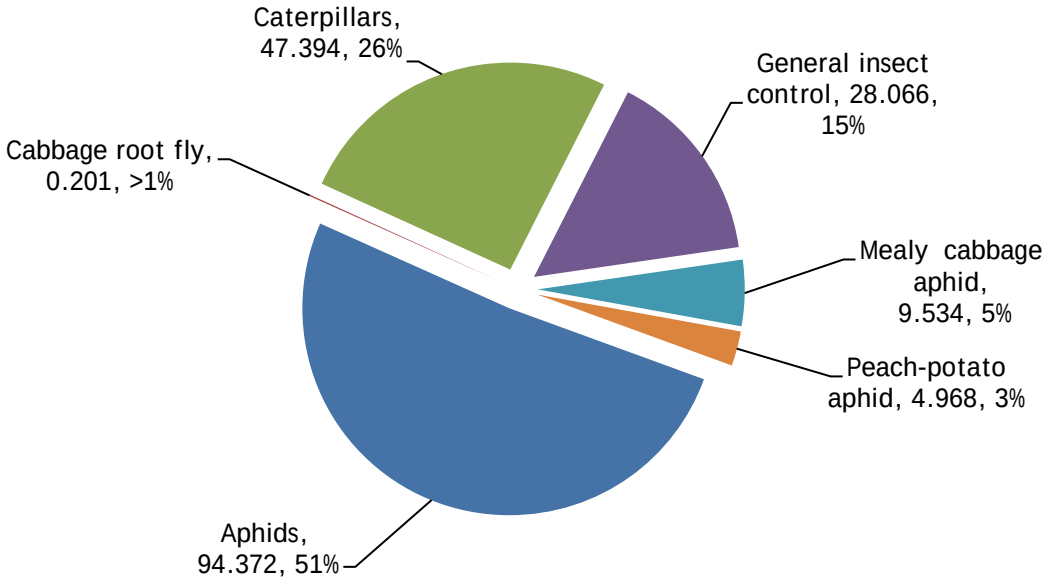


Figure 131: White cabbage: reasons for insecticide use (spha).



Biological controls – white cabbage

Basic area treated: 0.201 hectares
Area treated: 0.201 spray hectares
0.4% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.201	0.201		

Pesticide Usage on red cabbage crops:

12.20 hectares of red cabbage crops grown in Northern Ireland

16.94 treated hectares

18.70kg applied

81.8% of crops received at least one treatment

Red cabbage received on average 3.5 fungicide, 1.6 herbicide, 1.6 insecticide and 1.0 biological control applications.

Figure 132: Regional distribution of red cabbage crops grown in Northern Ireland (ha), 2011.

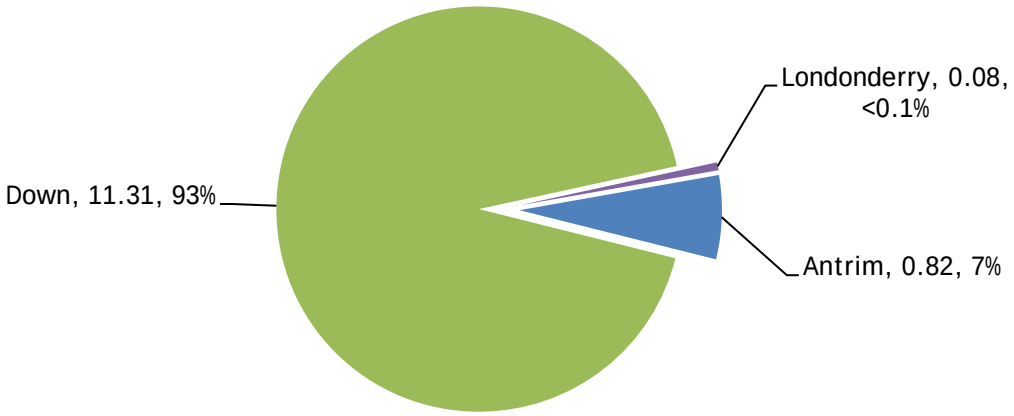


Figure 133: Pesticide usage on red cabbage crops in Northern Ireland (spha), 2011.

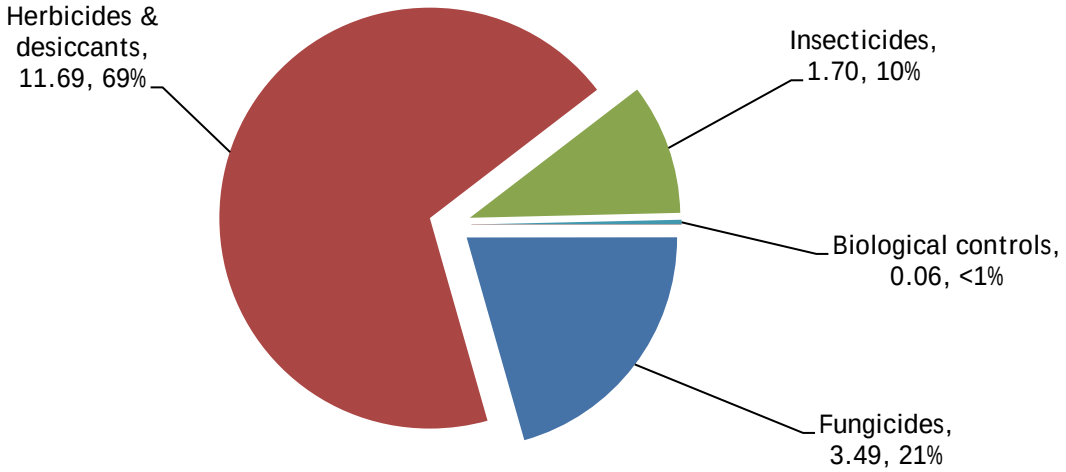


Figure 134: Weight of pesticides applied to red cabbage crops in Northern Ireland (kg), 2011.

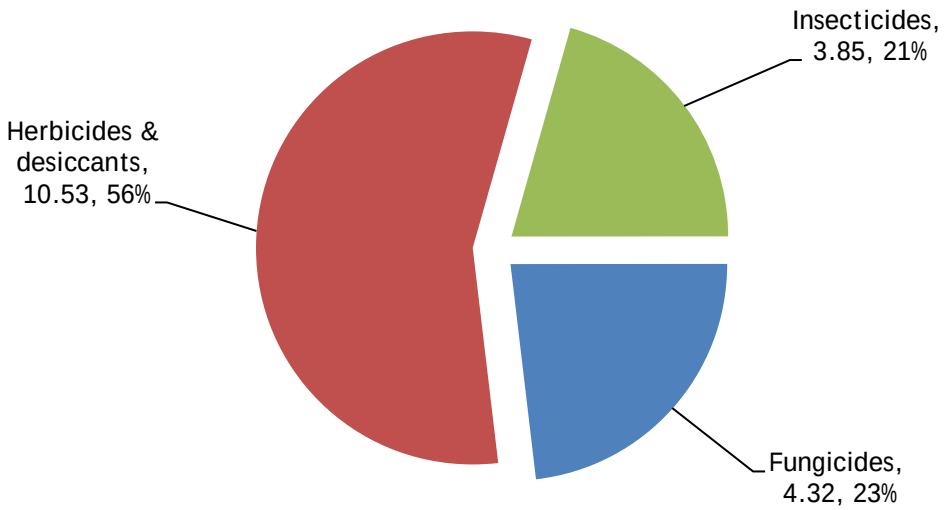
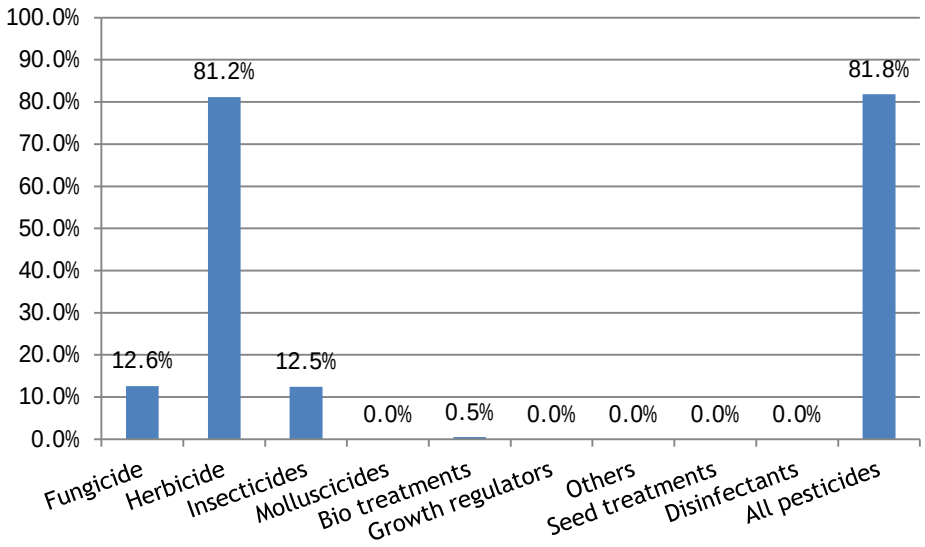


Figure 135: Proportional area of red cabbage crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – red cabbage

Basic area treated: 1.54 hectares
Area treated: 3.49 spray hectares
Weight of active substances applied: 4.32kg
12.6% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Chlorothalonil/metalaxyl-M	1.457	1.457	1.566	43.54%
Tebuconazole	0.816	0.816	0.204	24.39%
Difenoconazole	0.641	0.641	0.048	19.16%
Chlorothalonil	0.126	0.062	0.156	3.77%
Fosetyl-aluminium	0.123	0.061	1.475	3.68%

Figure 136: Fungicide active substance usage on red cabbage crops in Northern Ireland (spha), 2011.

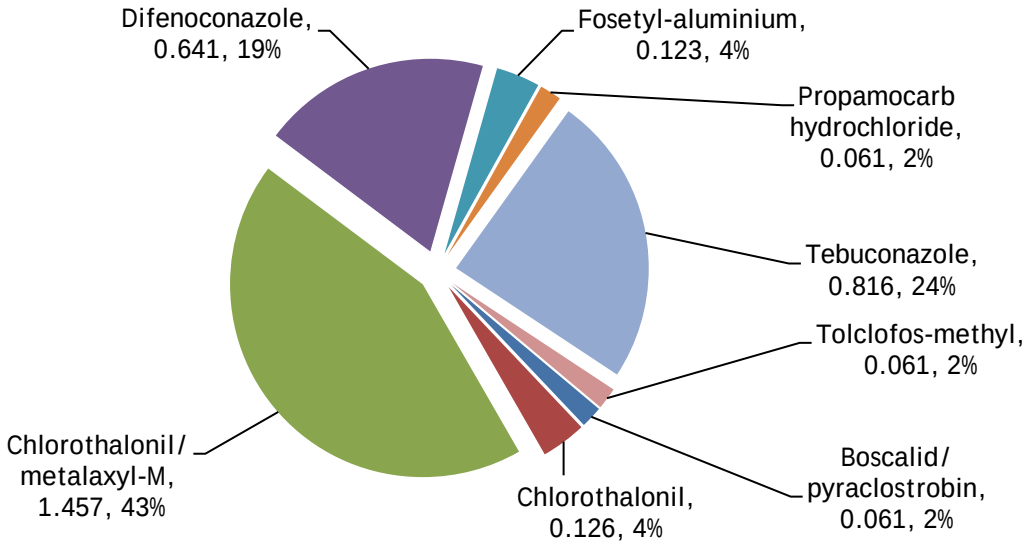


Figure 137: Weight of fungicide active substances applied to red cabbage crops in Northern Ireland (kg), 2011.

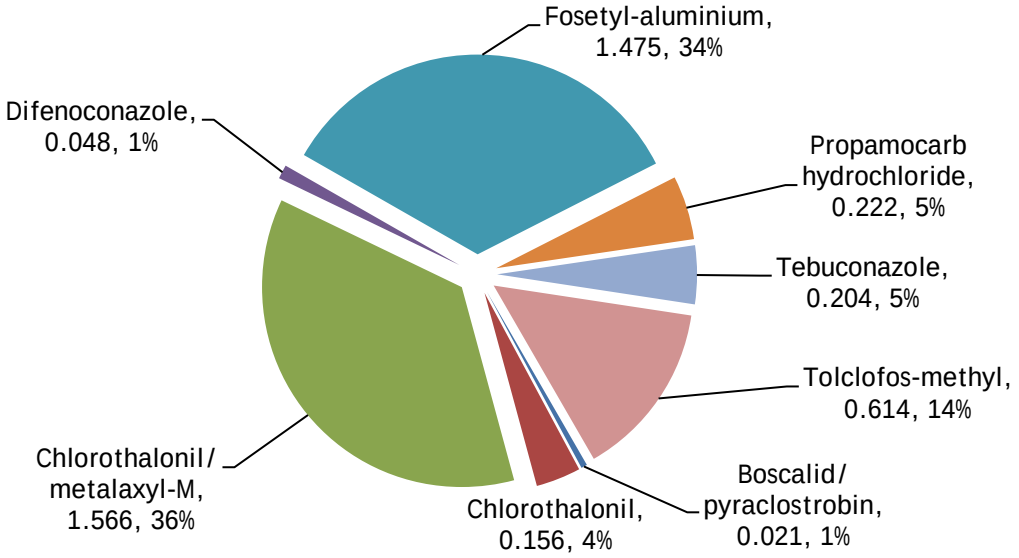
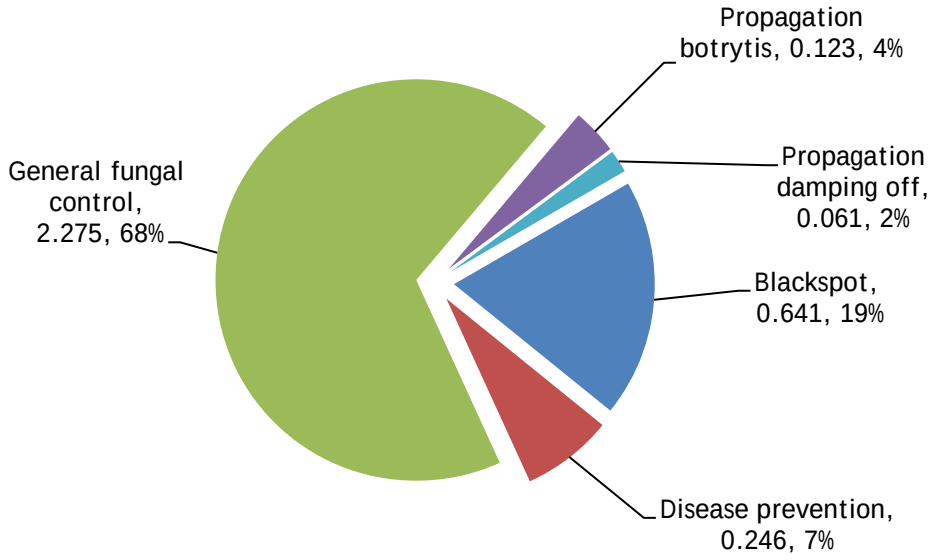


Figure 138: Red cabbage: reasons for fungicide use (spha).



Herbicides & desiccants – red cabbage

Basic area treated: 9.90 hectares
Area treated: 11.69 spray hectares
Weight of active substances applied: 10.53kg
81.2% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	6.663	6.663	4.997	56.99%
Glyphosate	4.213	4.213	4.55	36.03%
Pendimethalin	0.816	0.816	0.979	6.98%

Figure 139: Herbicide & desiccant active substance usage on red cabbage crops in Northern Ireland (spha), 2011.

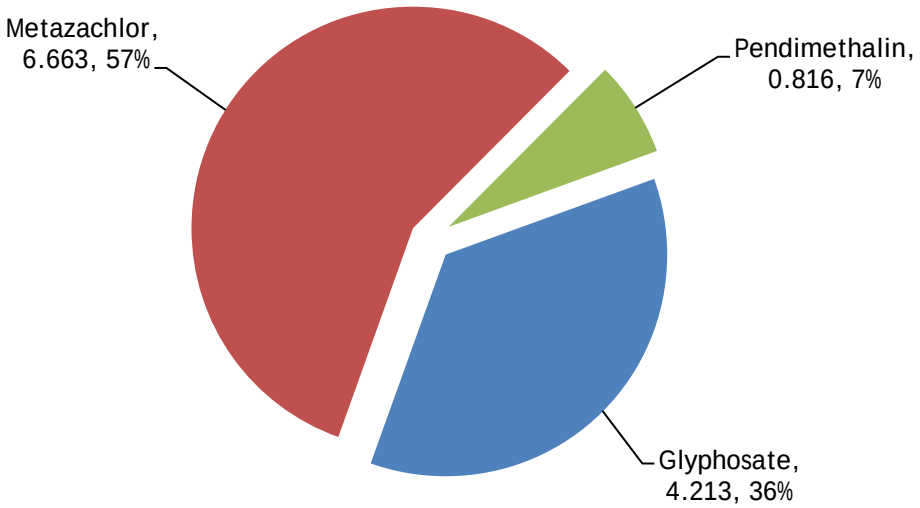


Figure 140: Weight of herbicide & desiccant active substances applied to red cabbage crops in Northern Ireland (kg), 2011.

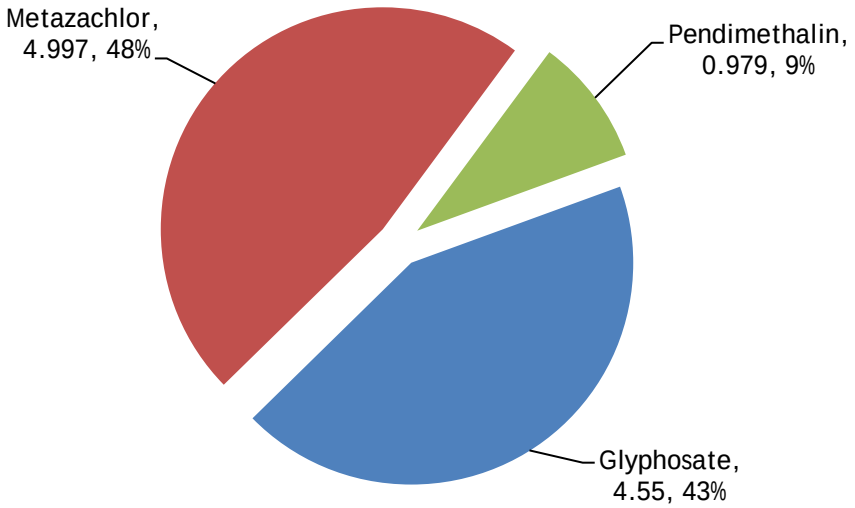
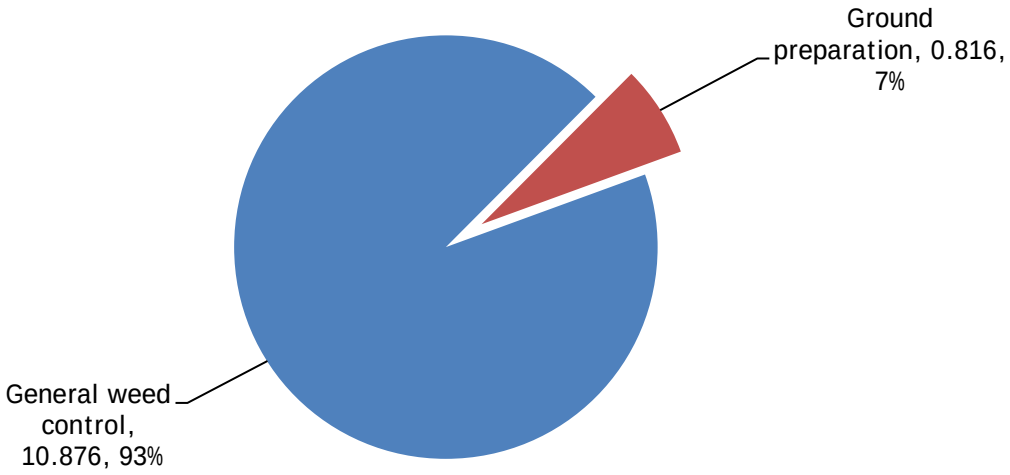


Figure 141: Red cabbage: reasons for herbicide & desiccant use (spha).



Insecticides – red cabbage

Basic area treated: 1.52 hectares
Area treated: 1.70 spray hectares
Weight of active substances applied: 3.85kg
12.5% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	0.877	0.877	0.013	51.50%
Lambda-cyhalothrin/pirimicarb	0.641	0.641	0.135	37.64%
Chlorpyrifos	0.061	0.061	3.687	3.58%
Pymetrozine	0.061	0.061	0.012	3.58%
Thiacloprid	0.061	0.061	0.006	3.58%

Figure 142: Insecticide active substance usage on red cabbage crops in Northern Ireland (spha), 2011.

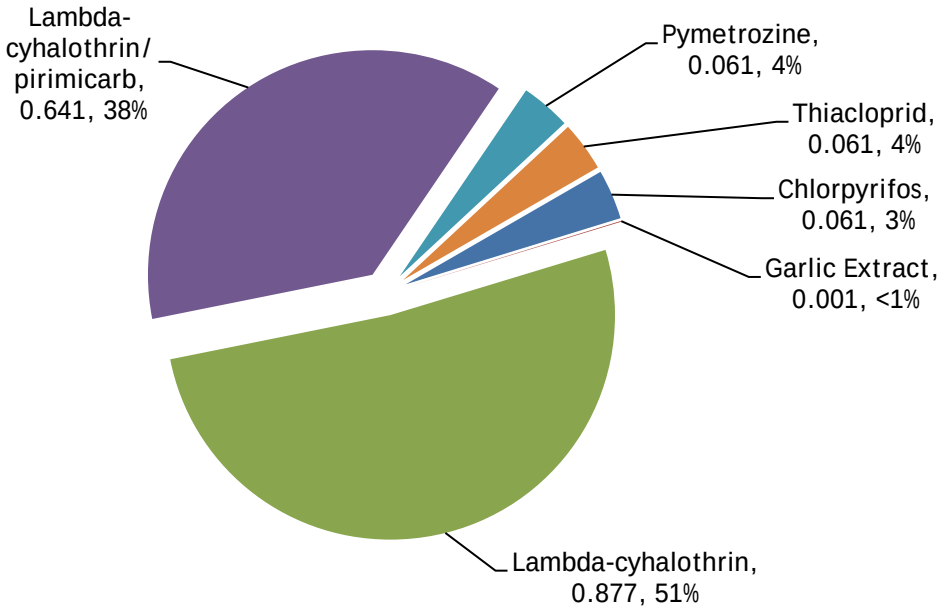


Figure 143: Weight of insecticide active substances applied to red cabbage crops in Northern Ireland (kg), 2011.

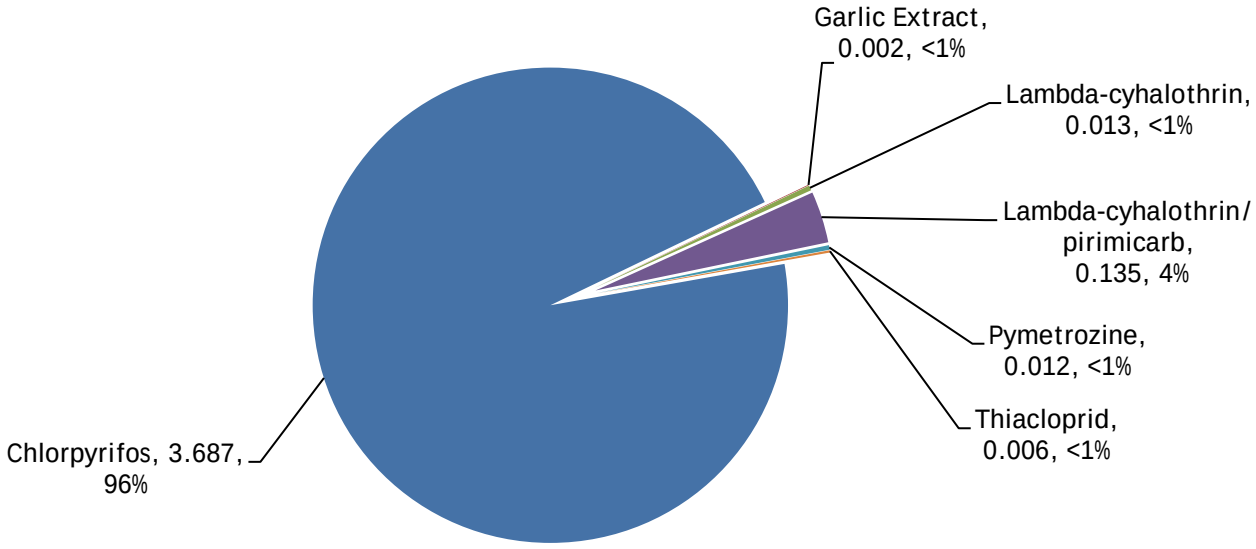
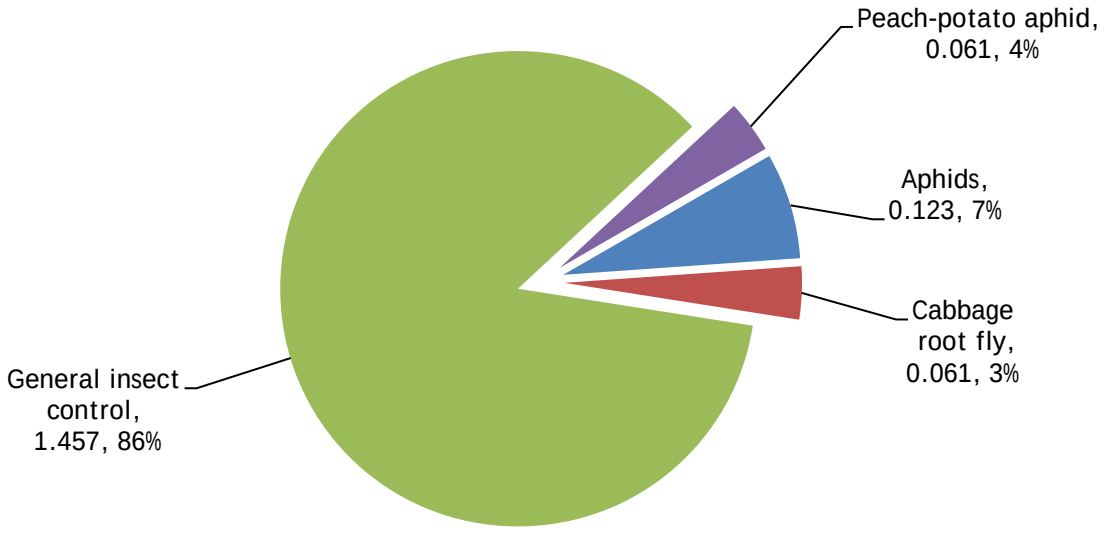


Figure 144: Red cabbage: reasons for insecticide use (spha).



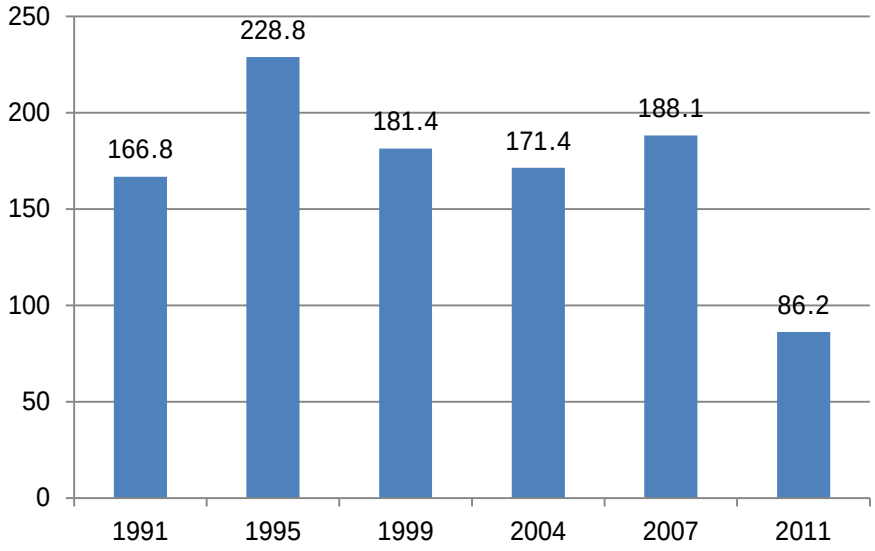
Biological controls – red cabbage

Basic area treated: 0.061 hectares
Area treated: 0.061 spray hectares
0.5% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.061	0.061		

Cauliflower crops:

Figure 145: Comparison of the area of cauliflower crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on autumn cauliflower crops:

22.42 hectares of autumn cauliflower crops grown in Northern Ireland

289.32 treated hectares

158.08kg applied

100% of crops received at least one treatment

Autumn cauliflower crops received on average 4.1 fungicide, 2.1 herbicide, 2.6 insecticide and 1.0 biological control applications.

Figure 146: Regional distribution of autumn cauliflower cabbage crops grown in Northern Ireland (ha), 2011.

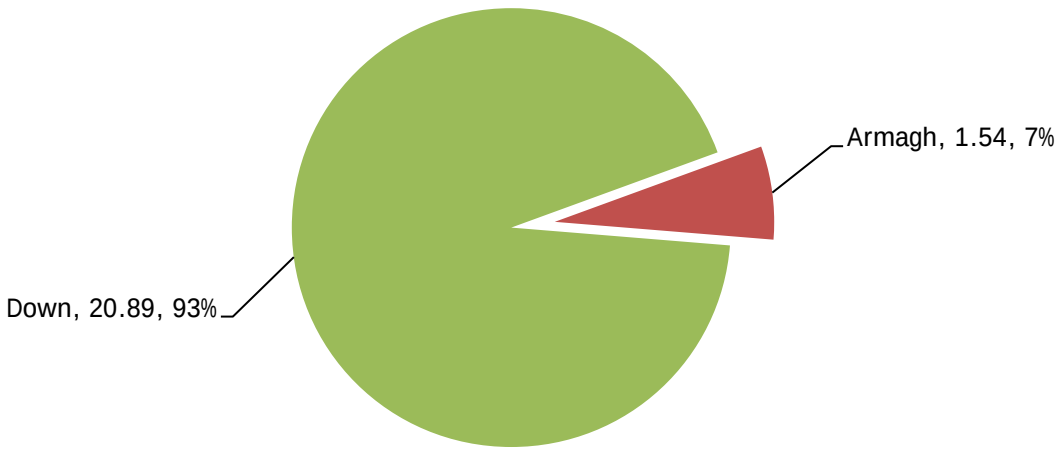


Figure 147: Pesticide usage on autumn cauliflower crops in Northern Ireland (spha), 2011.

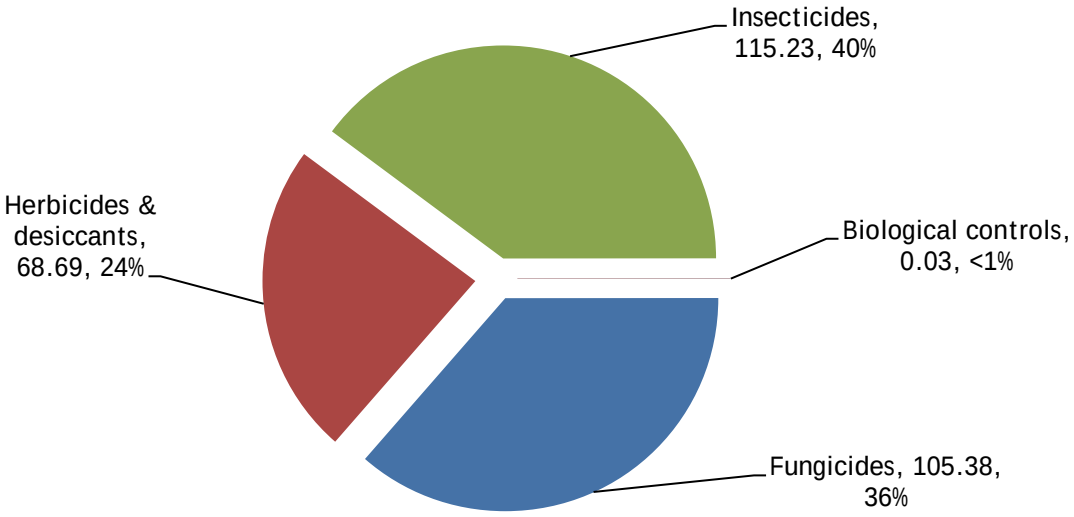


Figure 148: Weight of pesticides applied to autumn cauliflower crops in Northern Ireland (kg), 2011.

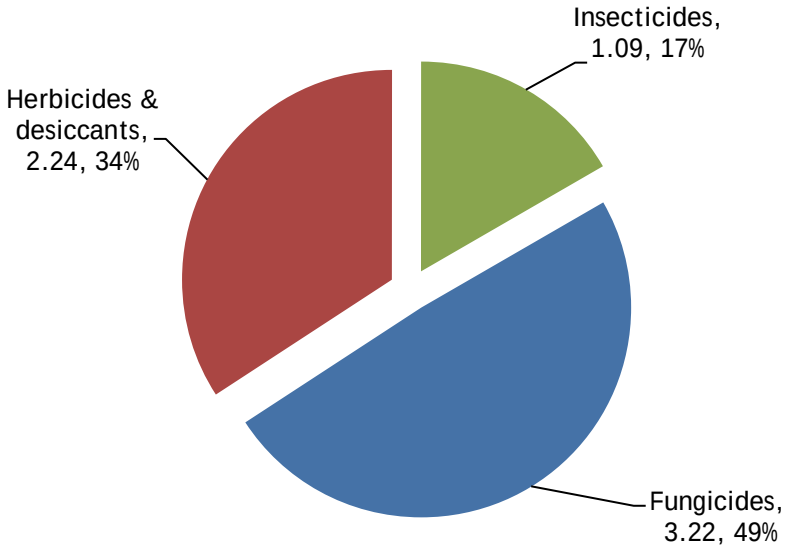
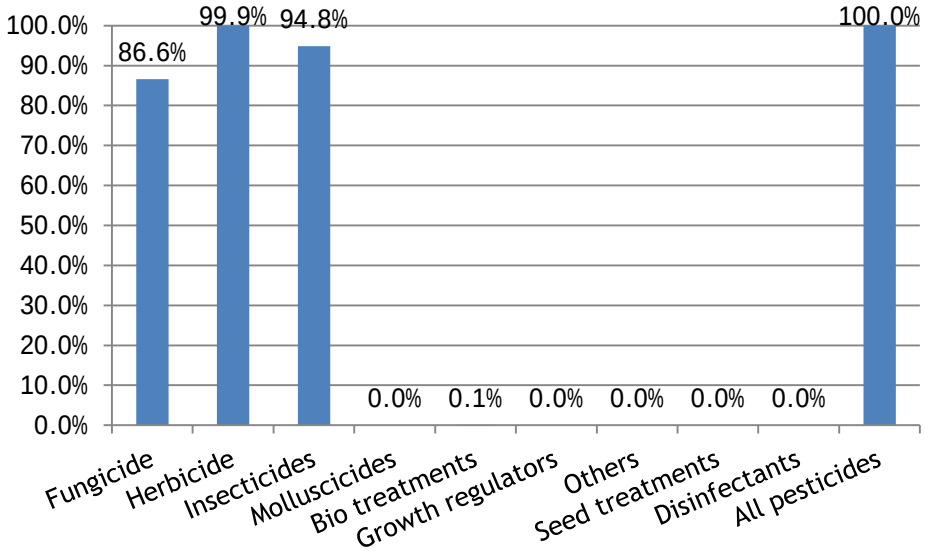


Figure 149: Proportional area of autumn cauliflower crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – autumn cauliflower

Basic area treated: 19.41 hectares
Area treated: 105.38 spray hectares
Weight of active substances applied: 36.44kg
86.6% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin/difenoconazole	35.868	9.837	11.657	34.06%
Difenoconazole	30.843	18.92	2.313	29.29%
Chlorothalonil/metalaxyl-M	13.862	13.862	14.901	13.16%
Azoxystrobin	11.698	3.899	2.73	11.11%
Tebuconazole	8.677	8.677	2.169	8.24%

Figure 150: Fungicide active substance usage on autumn cauliflower crops in Northern Ireland (spha), 2011.

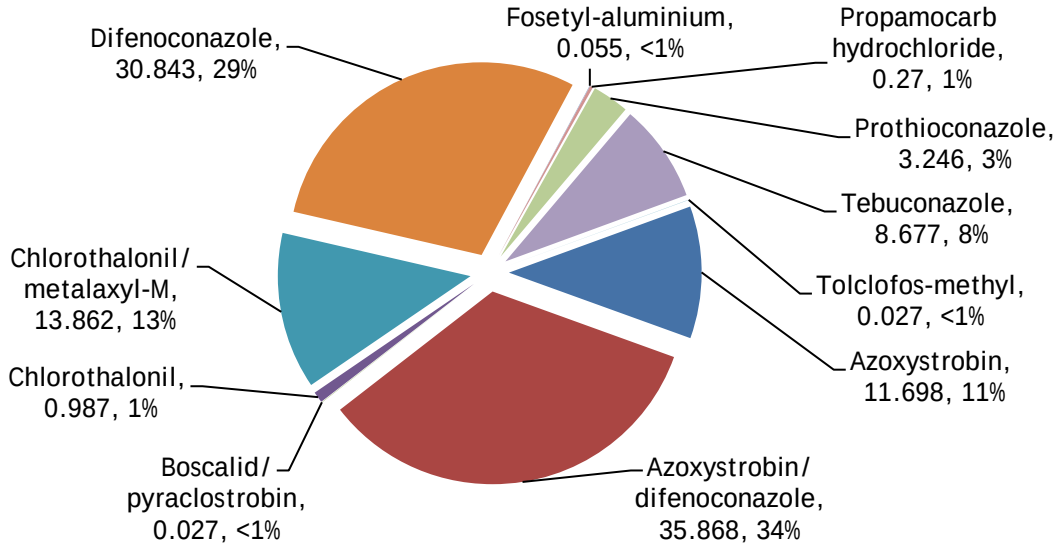


Figure 151: Weight of fungicide active substances applied to autumn cauliflower crops in Northern Ireland (kg), 2011.

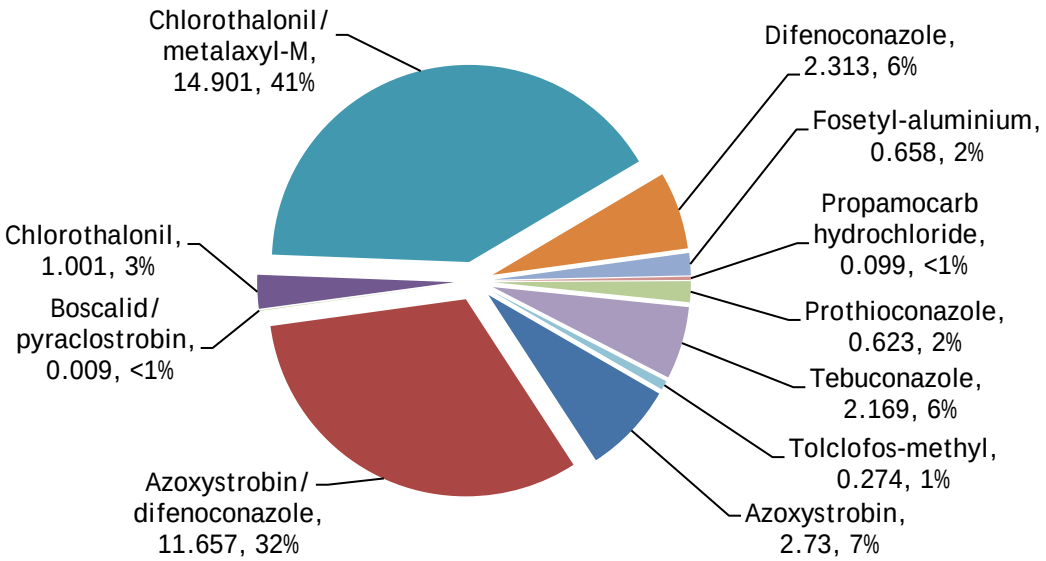
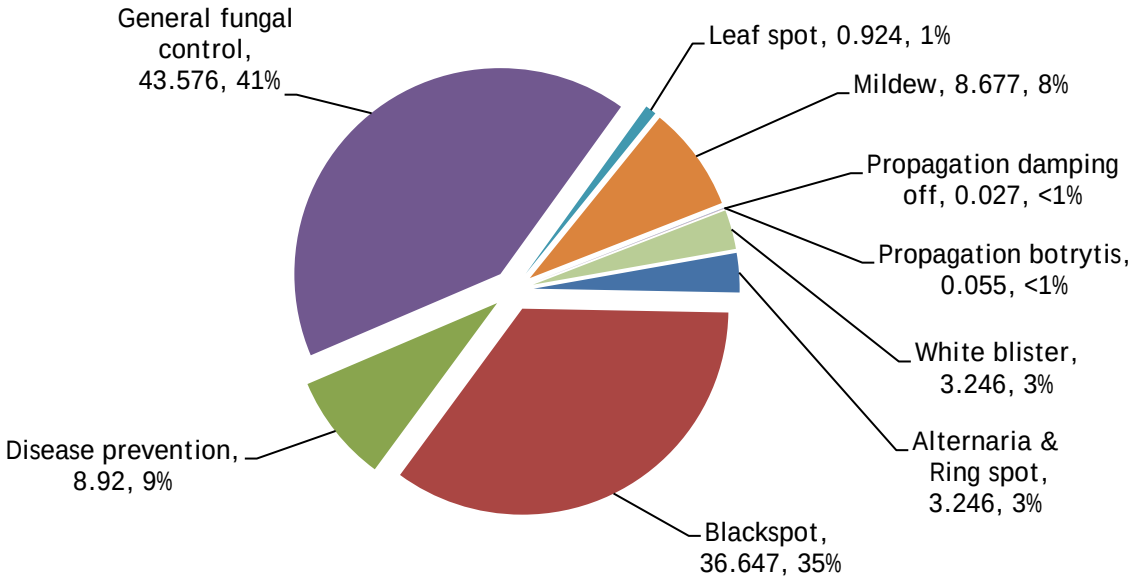


Figure 152: Autumn cauliflower: reasons for fungicide use (spha).



Herbicides & desiccants – autumn cauliflower

Basic area treated: 22.39 hectares
Area treated: 68.69 spray hectares
Weight of active substances applied: 105.20kg
99.9% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	22.902	14.225	33.119	33.34%
Metazachlor	21.516	13.717	16.137	31.32%
Clomazone	11.698	3.899	0.814	17.03%
Propachlor	8.677	8.677	49.98	12.63%
Pendimethalin	3.899	3.899	5.147	5.68%

Figure 153: Herbicide & desiccant active substance usage on autumn cauliflower crops in Northern Ireland (spha), 2011.

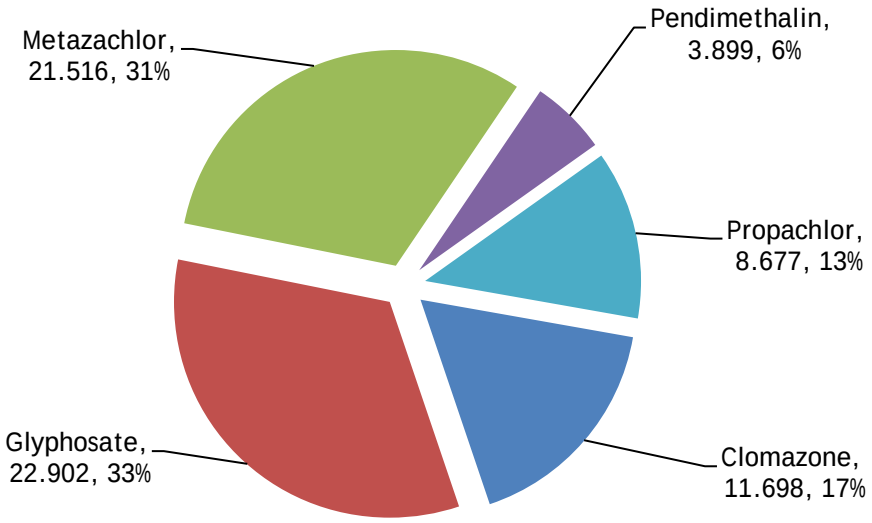


Figure 154: Weight of herbicide & desiccant active substances applied to autumn cauliflower crops in Northern Ireland (kg), 2011.

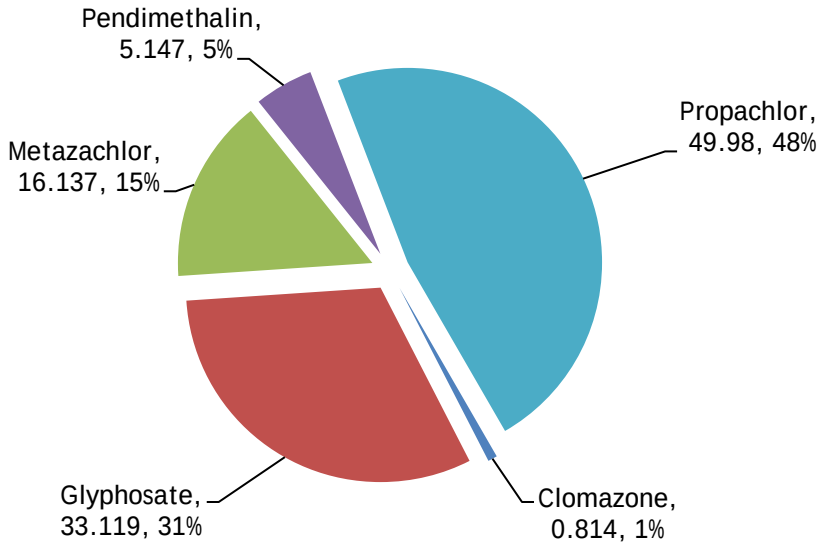
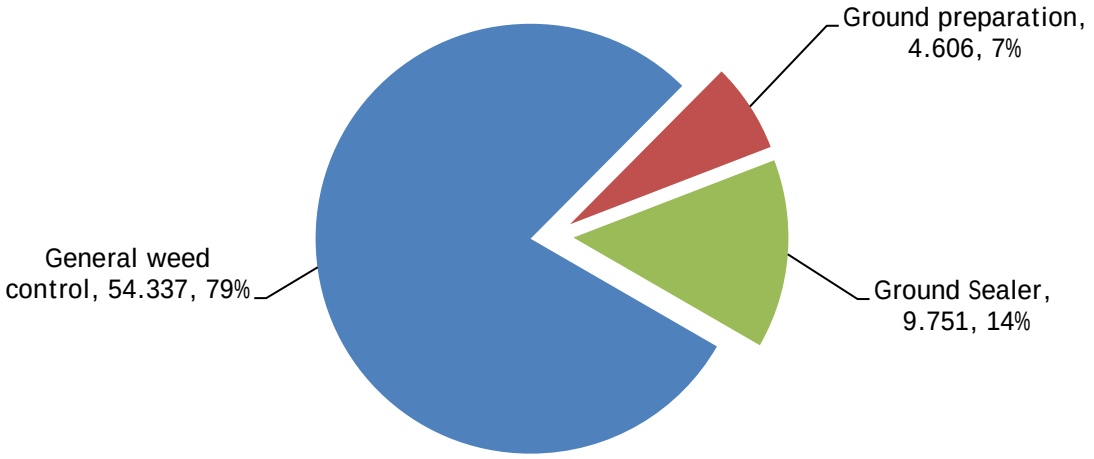


Figure 155: Autumn cauliflower: reasons for herbicide & desiccant use (spha).



Insecticides – autumn cauliflower

Basic area treated: 21.26 hectares
Area treated: 115.23 spray hectares
Weight of active substances applied: 16.44kg
94.8% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	50.531	15.822	0.687	43.85%
Thiacloprid	20.627	11.95	1.98	17.90%
Pymetrozine	16.503	12.604	2.911	14.32%
Lambda-cyhalothrin/pirimicarb	8.65	8.65	1.489	7.51%
Indoxacarb	7.799	3.899	0.199	6.77%

Figure 156: Insecticide active substance usage on autumn cauliflower crops in Northern Ireland (spha), 2011.

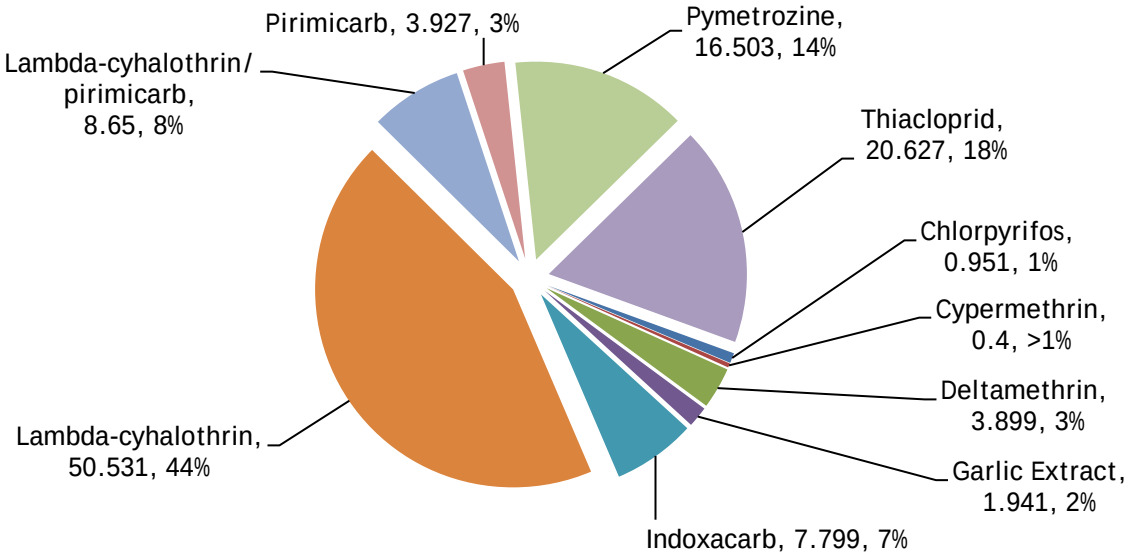


Figure 157: Weight of insecticide active substances applied to autumn cauliflower crops in Northern Ireland (kg), 2011.

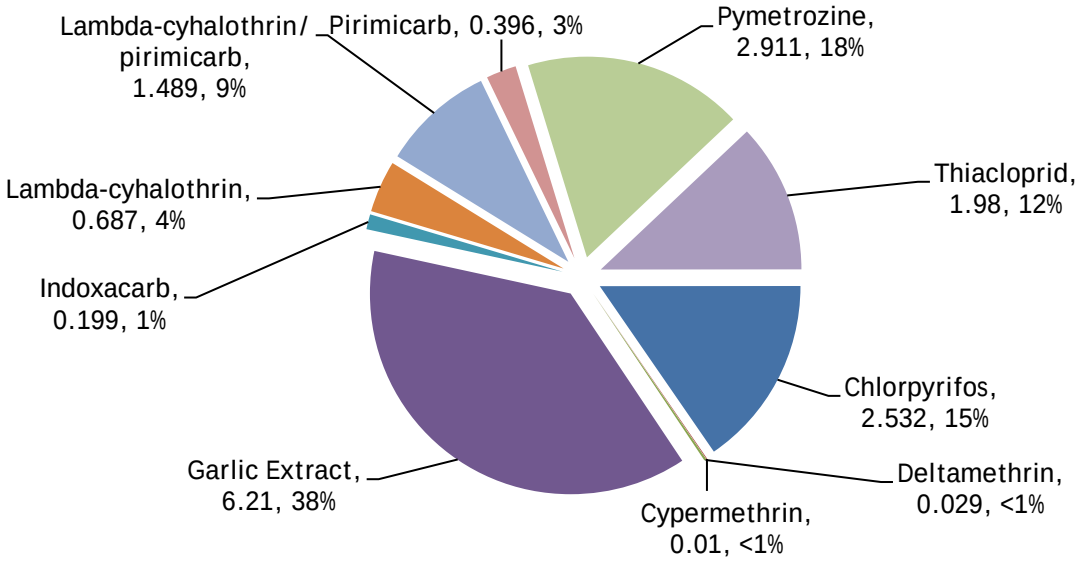
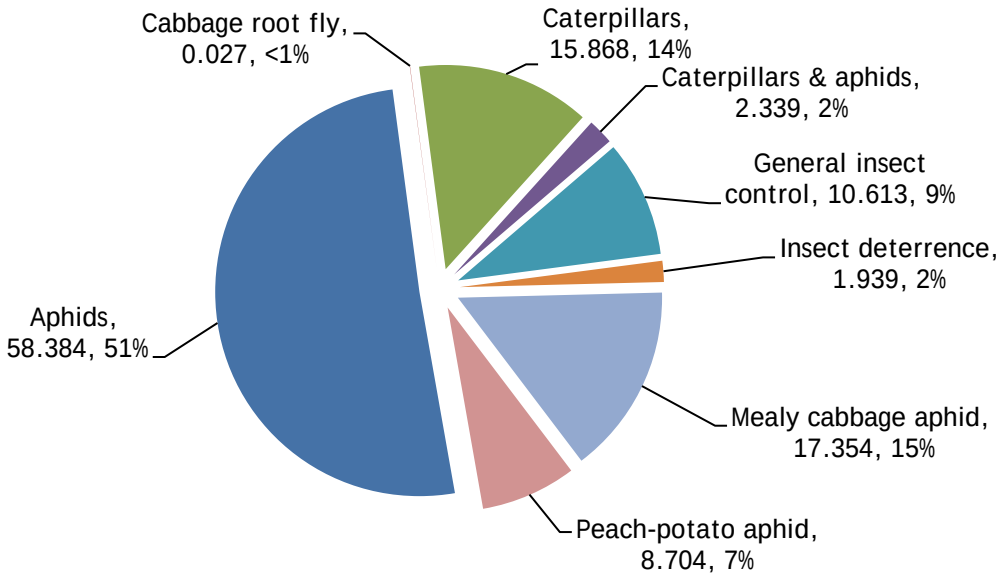


Figure 158: Autumn cauliflower: reasons for insecticide use (spha).



Biological controls – autumn cauliflower

Basic area treated: 0.027 hectares
Area treated: 0.027 spray hectares
0.1% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.027	0.027		

Pesticide Usage on summer cauliflower crops:

38.62 hectares of summer cauliflower crops grown in Northern Ireland

365.51 treated hectares

158.08kg applied

99.6% of crops received at least one treatment

Summer cauliflower received on average 3.7 fungicide, 2.6 herbicide, 2.3 insecticide and 1.0 biological control applications.

Figure 159: Regional distribution of summer cauliflower crops grown in Northern Ireland (ha), 2011.

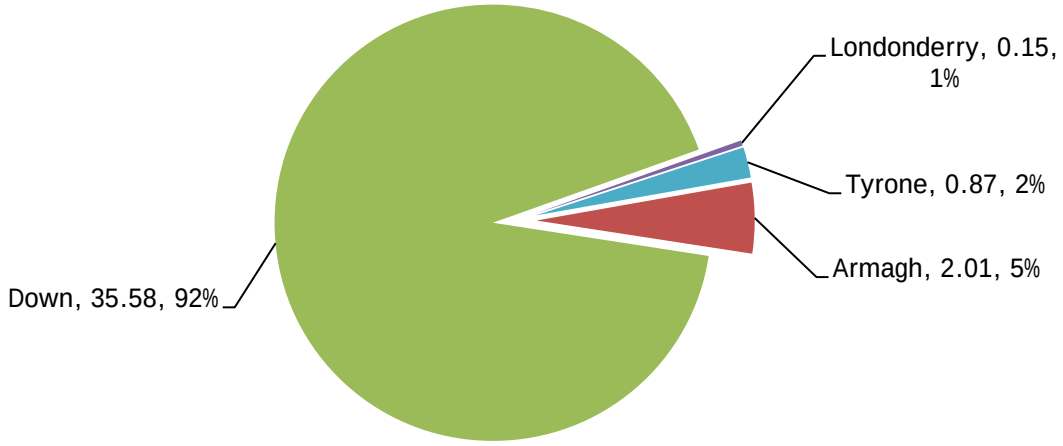


Figure 160: Pesticide usage on summer cauliflower crops in Northern Ireland (spha), 2011.

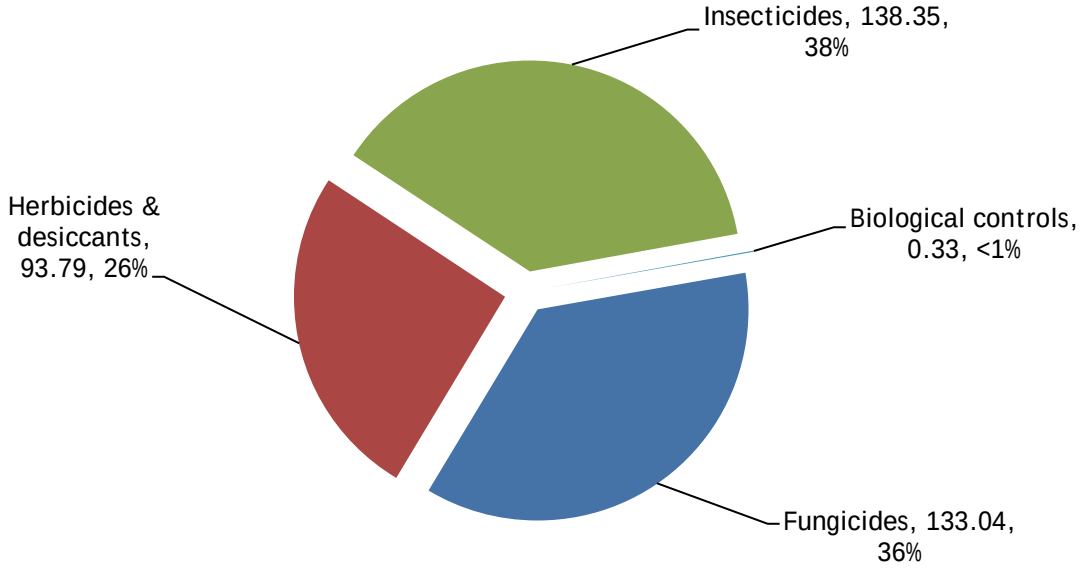


Figure 161: Weight of pesticides applied to summer cauliflower crops in Northern Ireland (kg), 2011.

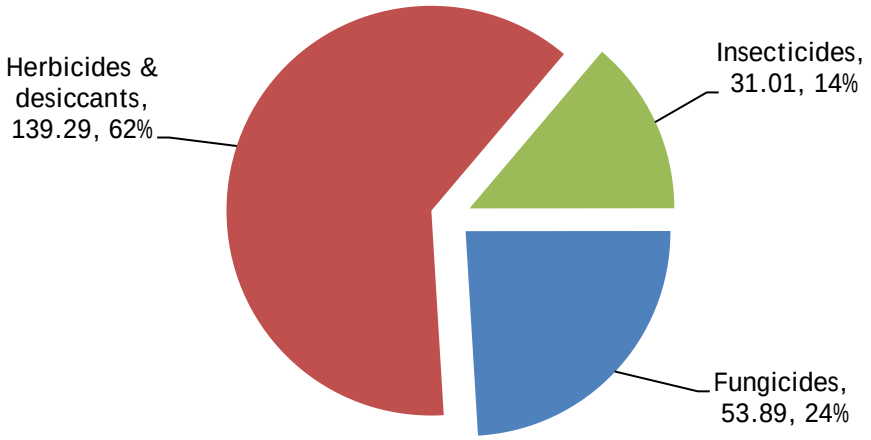
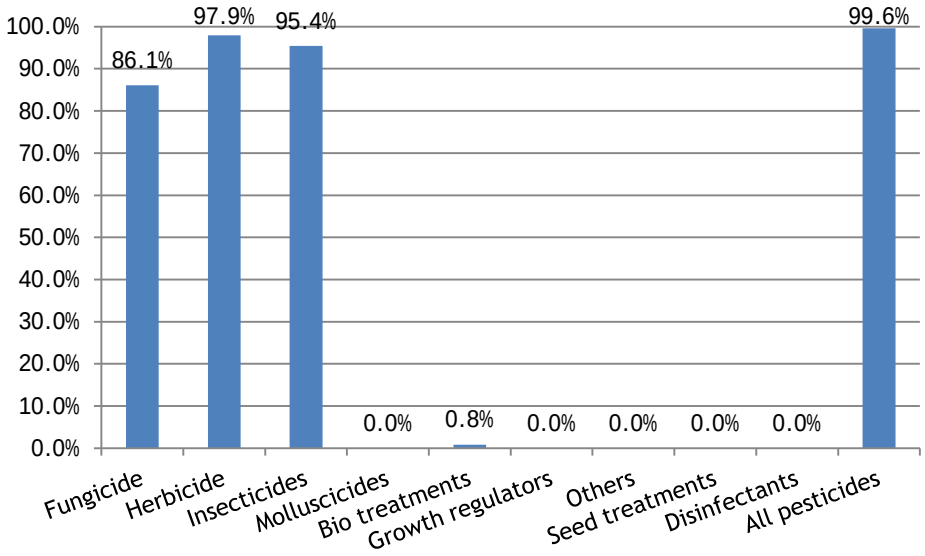


Figure 162: Proportional area of summer cauliflower crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – summer cauliflower

Basic area treated: 33.24 hectares
Area treated: 133.04 spray hectares
Weight of active substances applied: 11.73kg
86.1% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	44.361	32.427	3.084	33.53%
Azoxystrobin/difenoconazole	36.154	10.123	11.75	27.32%
Azoxystrobin	21.423	13.625	3.945	16.19%
Chlorothalonil/metalaxyl-M	15.17	15.17	16.308	11.46%
Tebuconazole	8.677	8.677	2.169	6.56%

Figure 163: Fungicide active substance usage on summer cauliflower crops in Northern Ireland (spha), 2011.

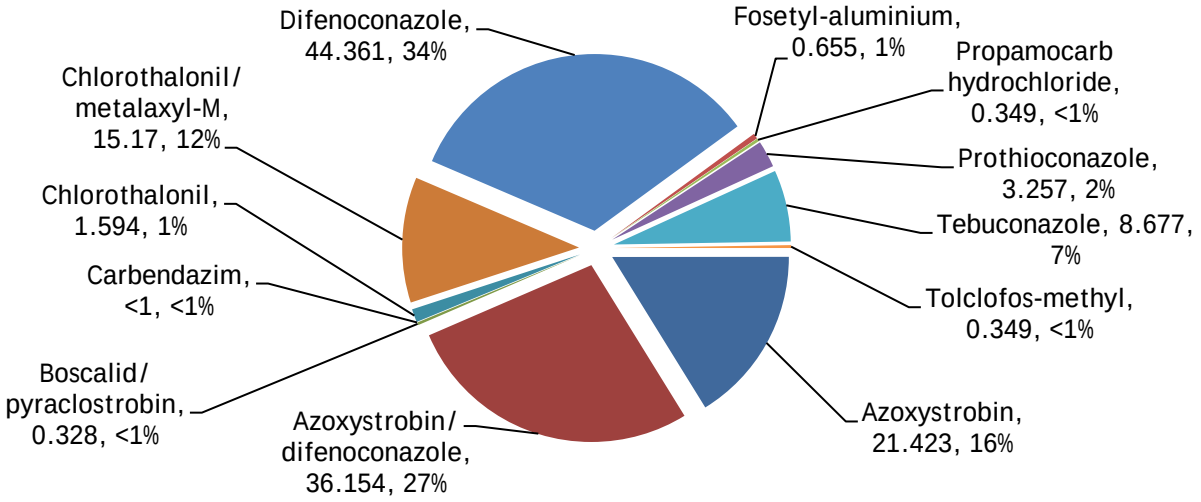


Figure 164: Weight of fungicide active substances applied to summer cauliflower crops in Northern Ireland (kg), 2011.

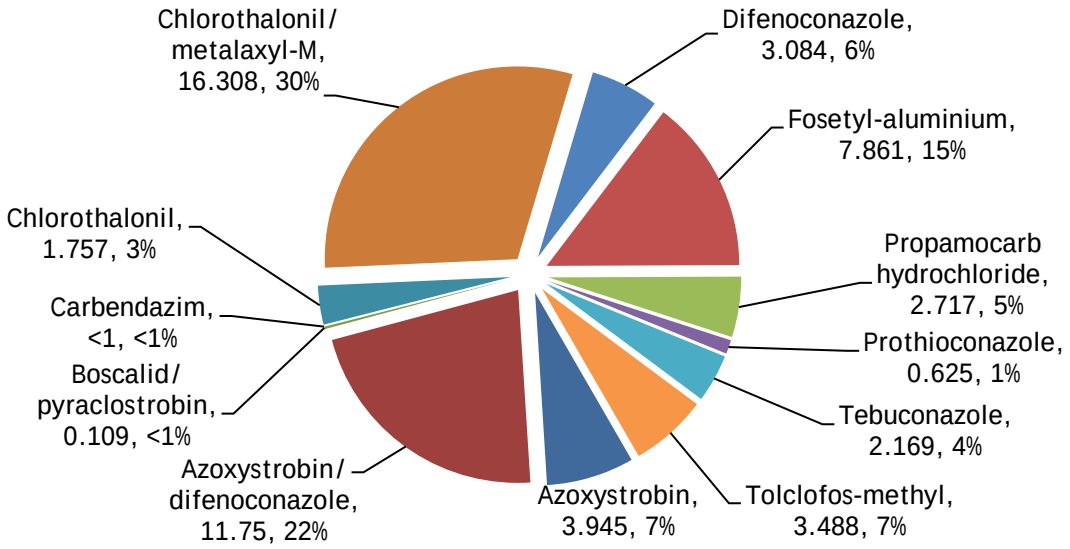
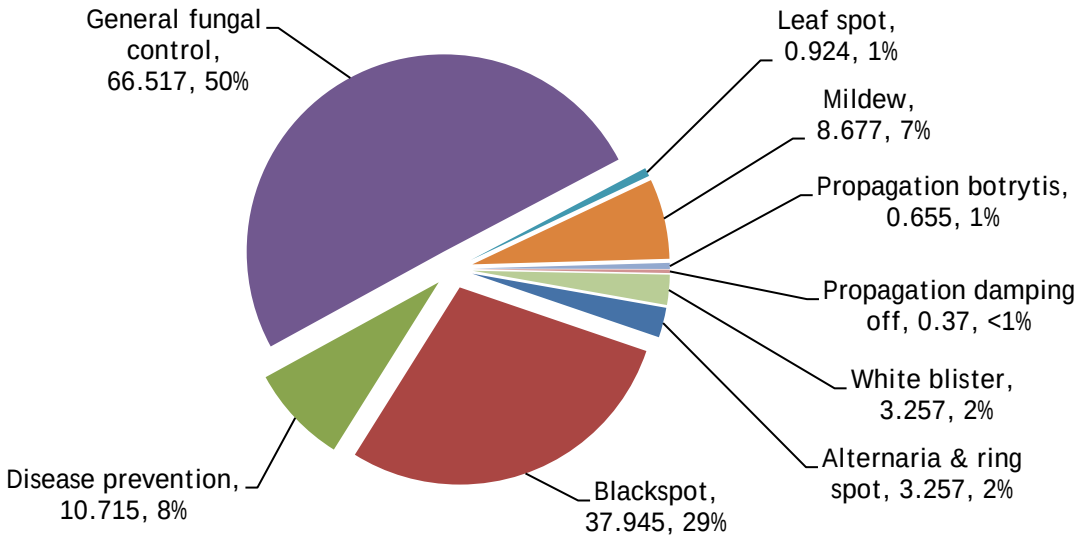


Figure 165: Summer cauliflower: reasons for fungicide use (spha).



Herbicides & desiccants – summer cauliflower

Basic area treated: 37.81 hectares
Area treated: 93.79 spray hectares
Weight of active substances applied: 139.29kg
95.4% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	32.003	28.104	21.571	34.12%
Glyphosate	28.695	20.018	36.699	30.59%
Propachlor	19.276	19.276	74.578	20.55%
Clomazone	9.046	5.147	0.601	9.64%
Pendimethalin	4.773	4.773	5.846	5.09%

Figure 166: Herbicide & desiccant active substance usage on summer cauliflower crops in Northern Ireland (spha), 2011.

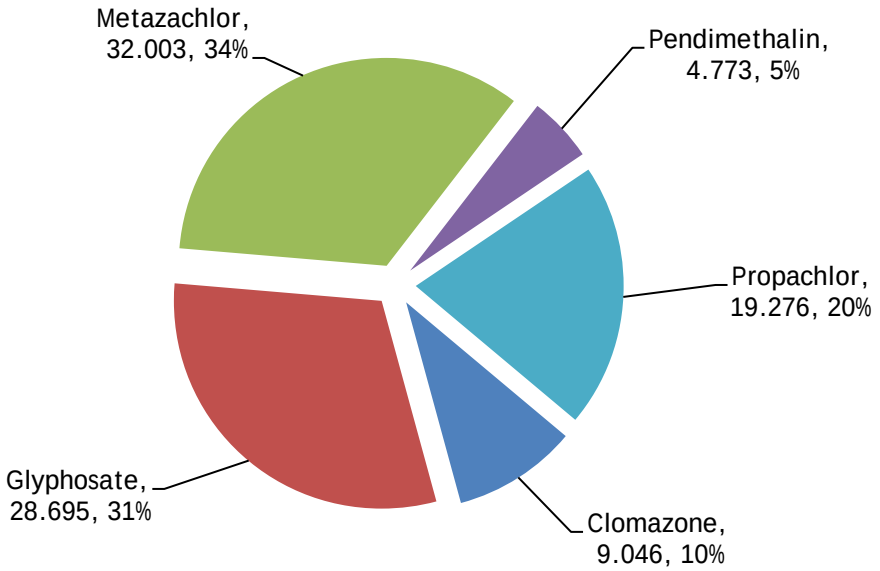


Figure 167: Weight of herbicide & desiccant active substances applied to summer cauliflower crops in Northern Ireland (kg), 2011.

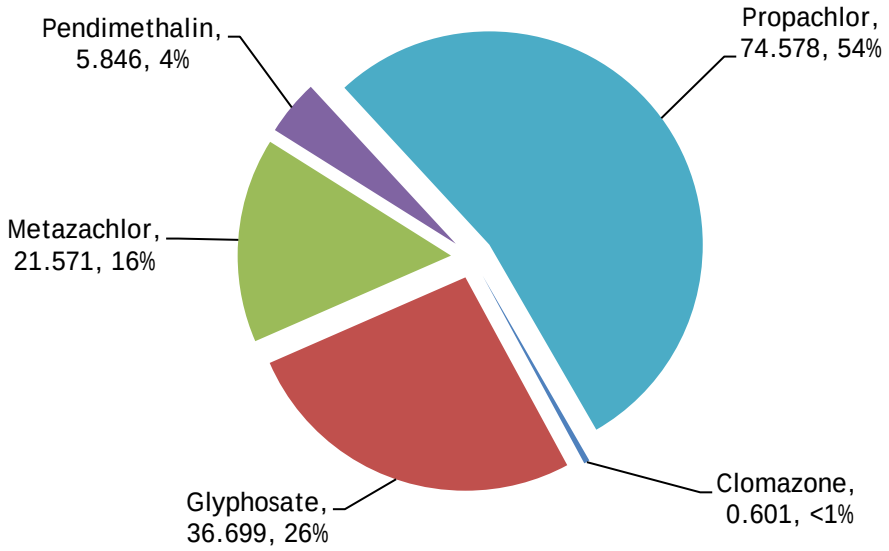
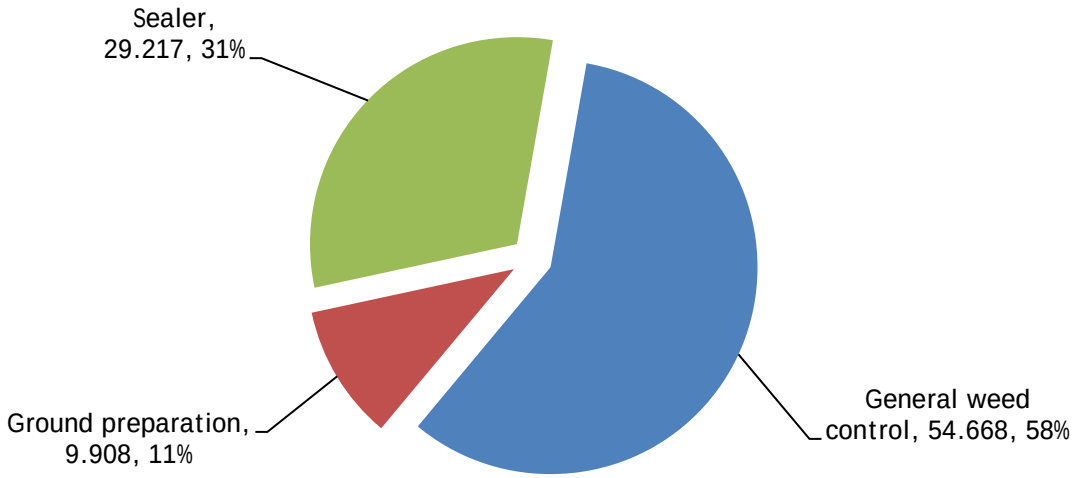


Figure 168: Summer cauliflower: reasons for herbicide & desiccant use (spha).



Insecticides – summer cauliflower

Basic area treated: 36.85 hectares
Area treated: 138.35 spray hectares
Weight of active substances applied: 16.44kg
95.4% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	60.267	25.558	0.711	43.56%
Thiacloprid	20.938	12.261	2.01	15.13%
Pymetrozine	16.803	12.904	2.971	12.14%
Pirimicarb	12.473	12.473	1.962	9.02%
Lambda-cyhalothrin/pirimicarb	8.009	8.009	1.354	5.79%

Figure 169: Insecticide active substance usage on summer cauliflower crops in Northern Ireland (spha), 2011.

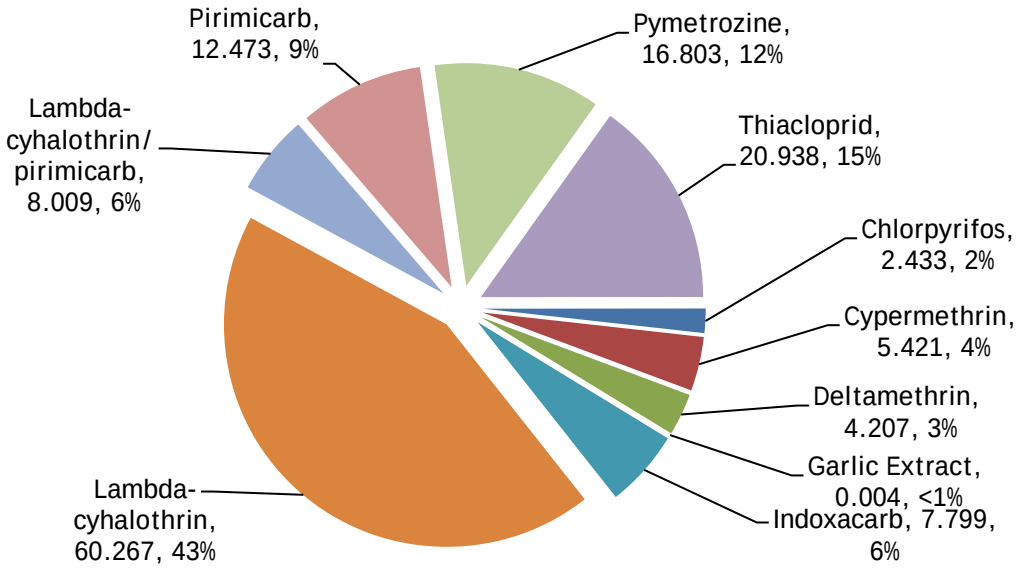


Figure 170: Weight of insecticide active substances applied to summer cauliflower crops in Northern Ireland (kg), 2011.

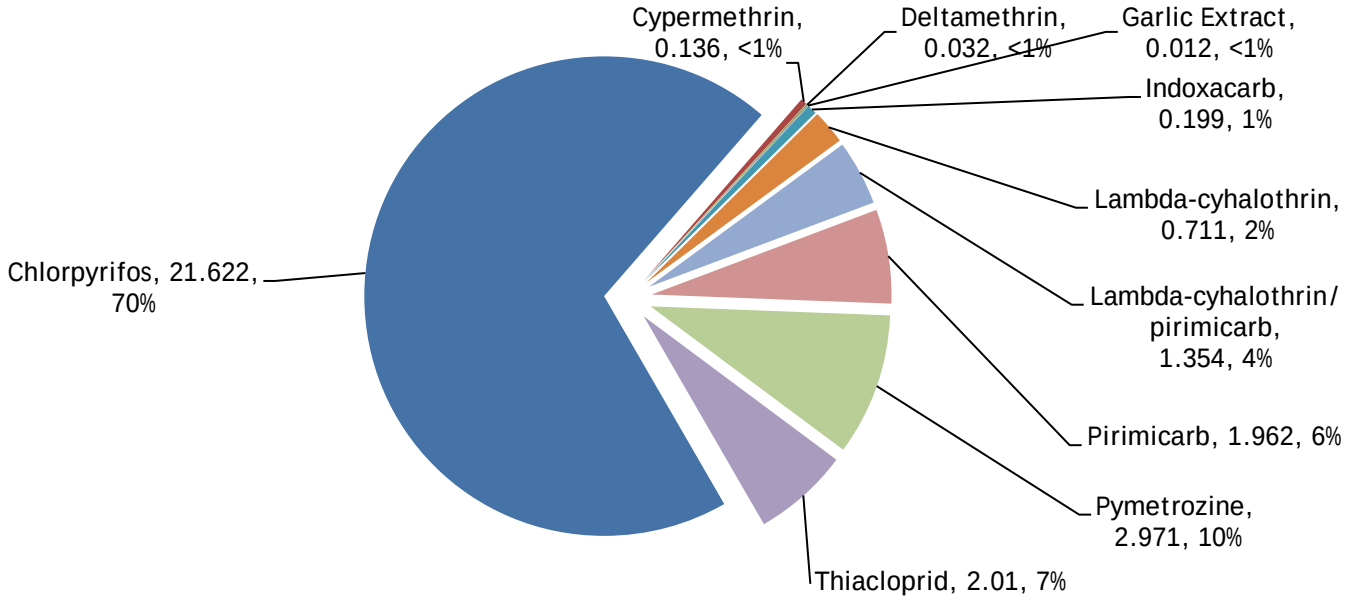
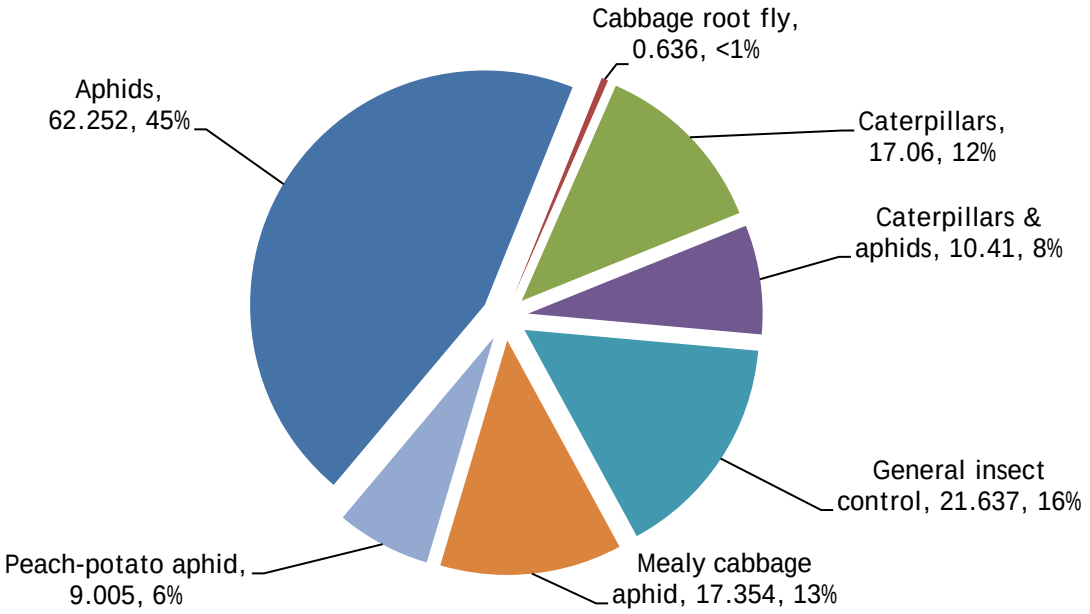


Figure 171: Summer cauliflower: reasons for insecticide use (spha).



Biological controls – summer cauliflower

Basic area treated: 0.328 hectares
Area treated: 0.328 spray hectares
0.8% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.328	0.328		

Pesticide Usage on winter cauliflower crops:

25.12 hectares of winter cauliflower crops grown in Northern Ireland

300.74 treated hectares

167.73kg applied

99.4% of crops received at least one treatment

Winter cauliflower received on average 3.6 fungicide, 2.6 herbicide, 4.3 insecticide and 1.0 biological control applications.

Figure 172: Regional distribution of winter cauliflower crops grown in Northern Ireland (ha), 2011.

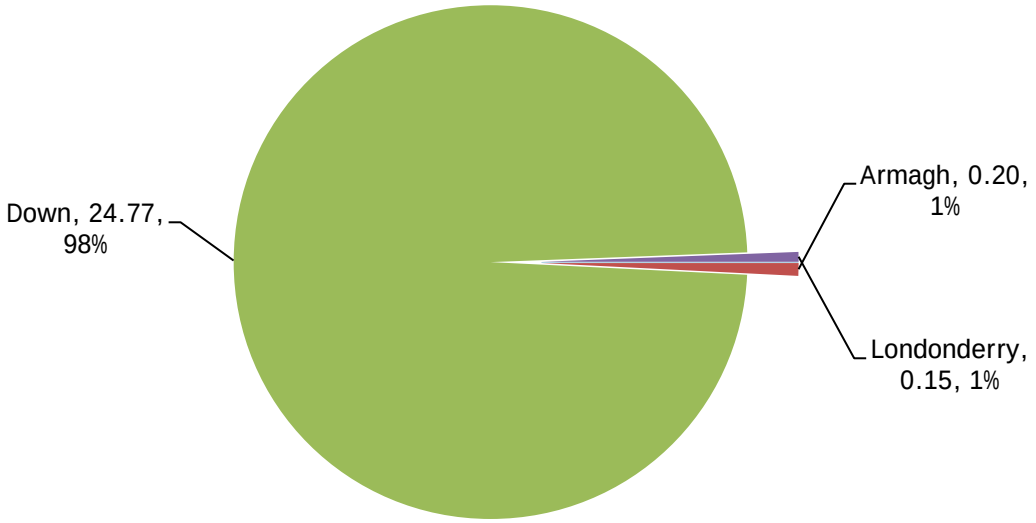


Figure 173: Pesticide usage on winter cauliflower crops in Northern Ireland (spha), 2011.

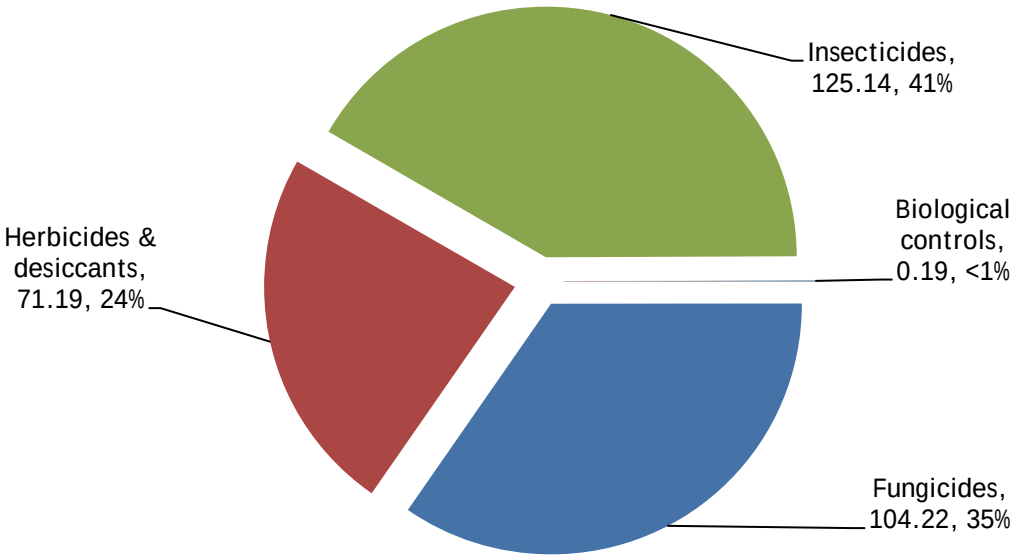


Figure 174: Weight of pesticides applied to winter cauliflower crops in Northern Ireland (kg), 2011.

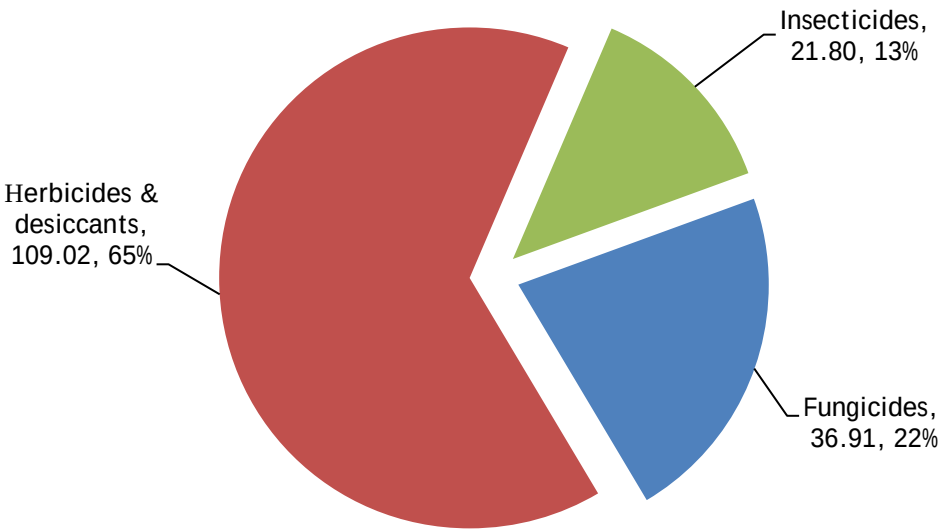
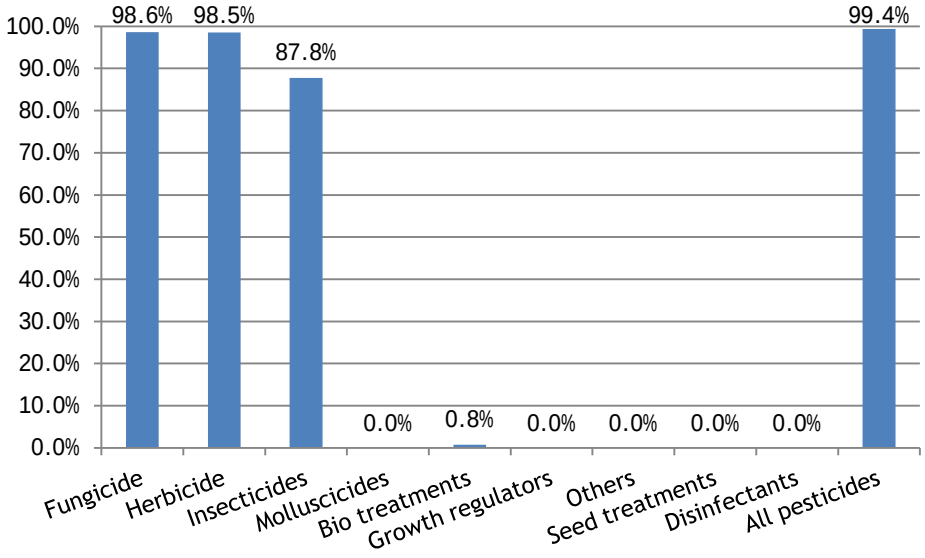


Figure 175: Proportional area of winter cauliflower crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – winter cauliflower

Basic area treated: 24.77 hectares
Area treated: 104.22 spray hectares
Weight of active substances applied: 36.91kg
98.6% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin/difenoconazole	37.6	11.569	12.22	36.08%
Difenoconazole	35.825	24.552	2.687	34.37%
Azoxystrobin	11.698	3.899	2.73	11.22%
Chlorothalonil/metalaxyl-M	8.677	8.677	9.328	8.33%
Tebuconazole	8.677	8.677	2.169	8.33%

Figure 176: Fungicide active substance usage on winter cauliflower crops in Northern Ireland (spha), 2011.

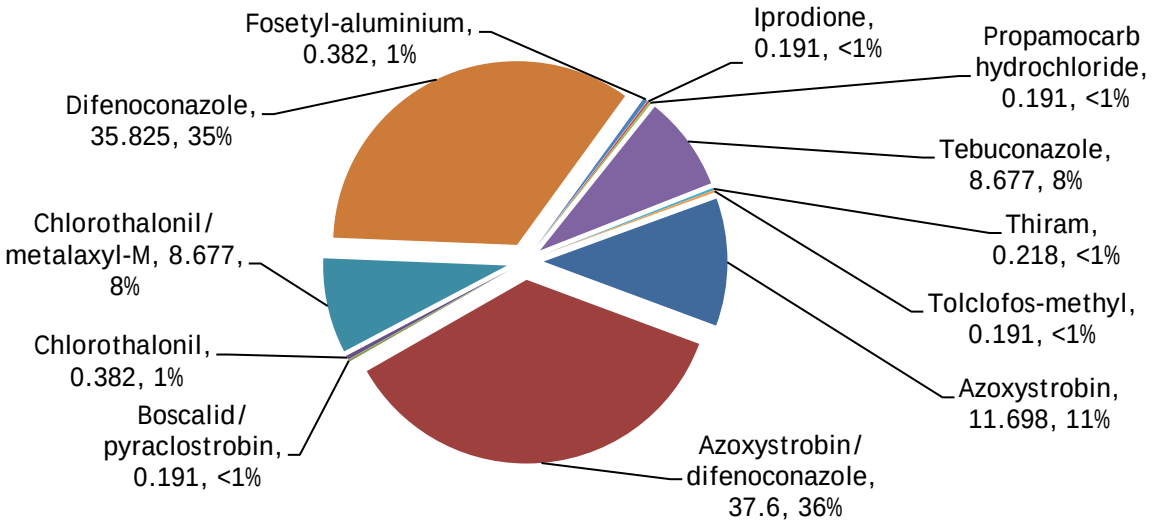


Figure 177: Weight of fungicide active substances applied to winter cauliflower crops in Northern Ireland (kg), 2011.

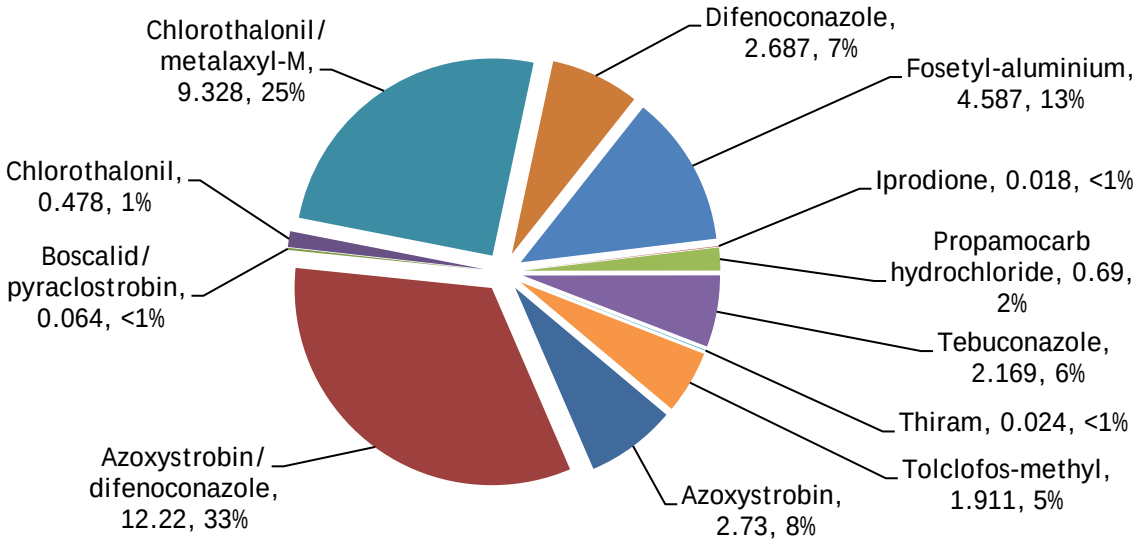
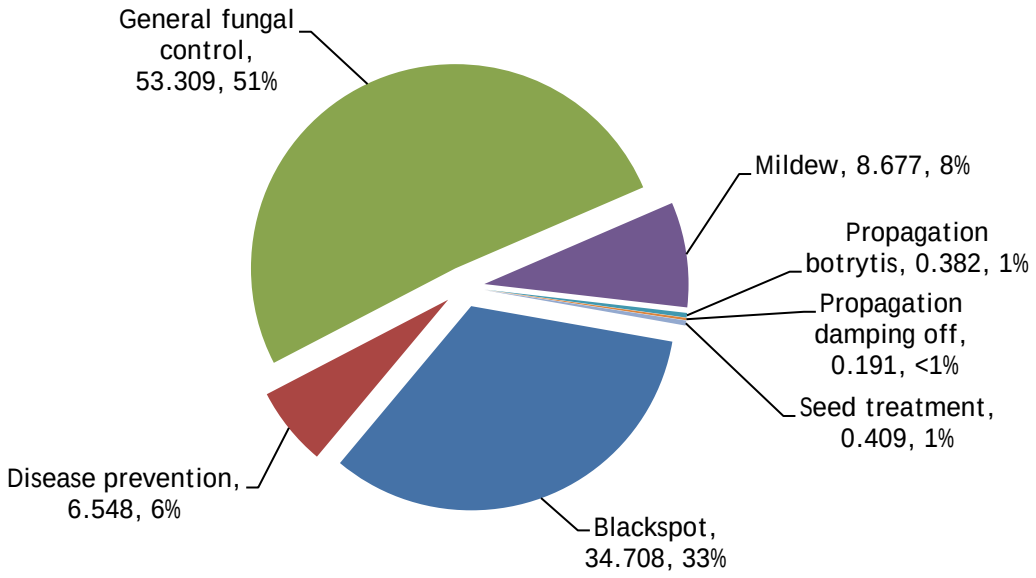


Figure 178: Winter cauliflower: reasons for fungicide use (spha).



Herbicides & desiccants – winter cauliflower

Basic area treated: 24.75 hectares
Area treated: 125.14 spray hectares
Weight of active substances applied: 109.02kg
98.6% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	29.53	20.853	40.043	41.48%
Metazachlor	17.385	9.587	13.039	24.42%
Clomazone	11.698	3.899	0.814	16.43%
Propachlor	8.677	8.677	49.98	12.19%
Pendimethalin	3.899	3.899	5.147	5.48%

Figure 179: Herbicide & desiccant active substance usage on winter cauliflower crops in Northern Ireland (spha), 2011.

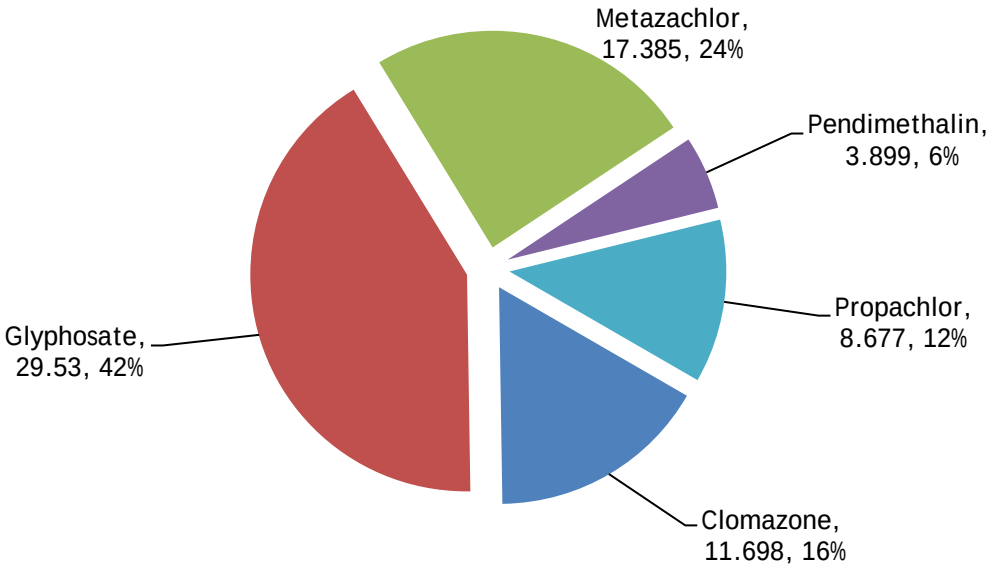


Figure 180: Weight of herbicide & desiccant active substances applied to winter cauliflower crops in Northern Ireland (kg), 2011.

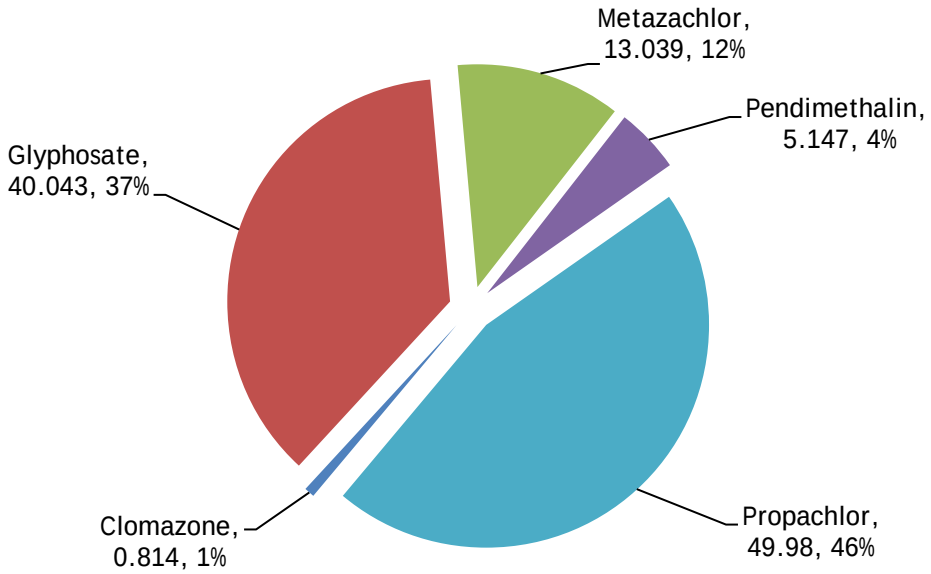
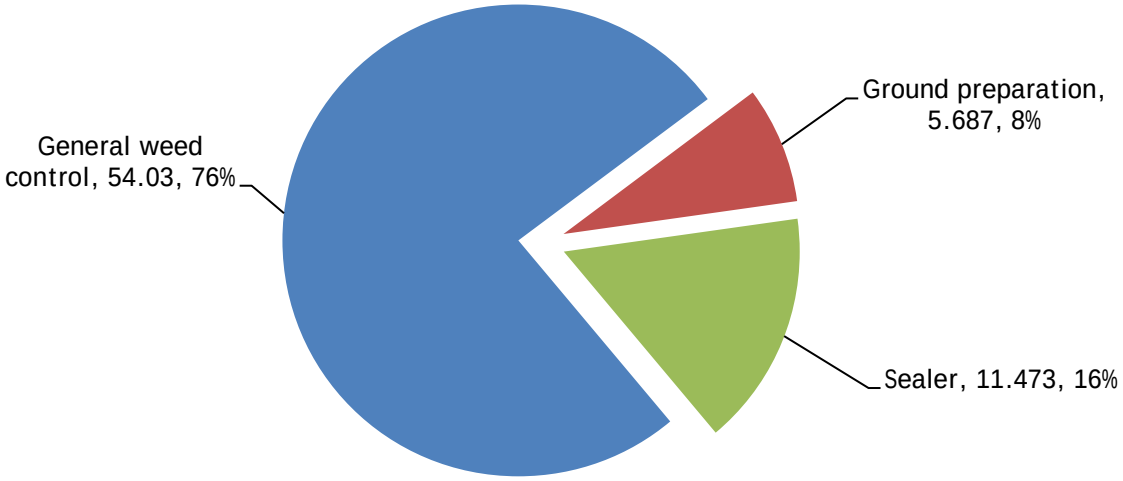


Figure 181: Winter cauliflower: reasons for herbicide & desiccant use (spha).



Insecticides – winter cauliflower

Basic area treated: 22.05 hectares
Area treated: 125.14 spray hectares
Weight of active substances applied: 21.8kg
87.8% of the area grown treated with insecticides
High levels of chlorpyrifos due to application of pre-planting drench
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	47.285	12.576	0.67	37.79%
Pymetrozine	23.156	19.256	4.241	18.50%
Thiacloprid	17.545	8.868	1.684	14.02%
Lambda-cyhalothrin/pirimicarb	10.388	10.388	1.854	8.30%
Pirimicarb	9.282	6.686	1.52	7.42%

Figure 182: Insecticide active substance usage on winter cauliflower crops in Northern Ireland (spha), 2011.

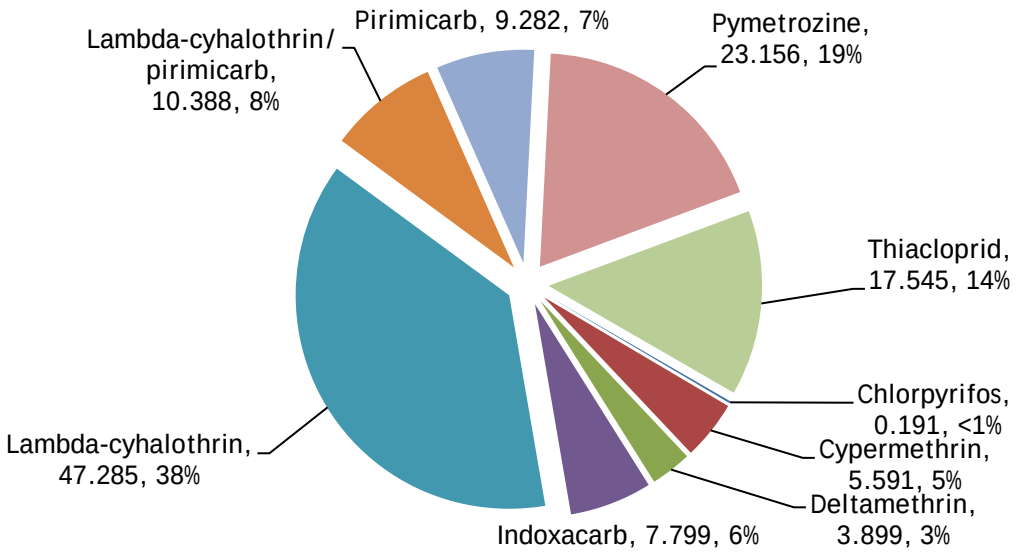


Figure 183: Weight of insecticide active substances applied to winter cauliflower crops in Northern Ireland (kg), 2011.

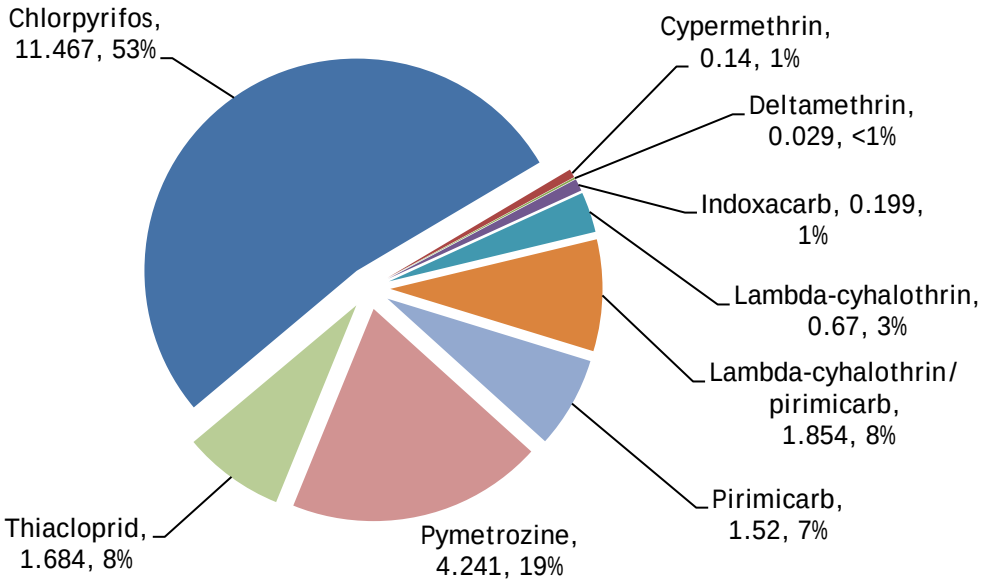
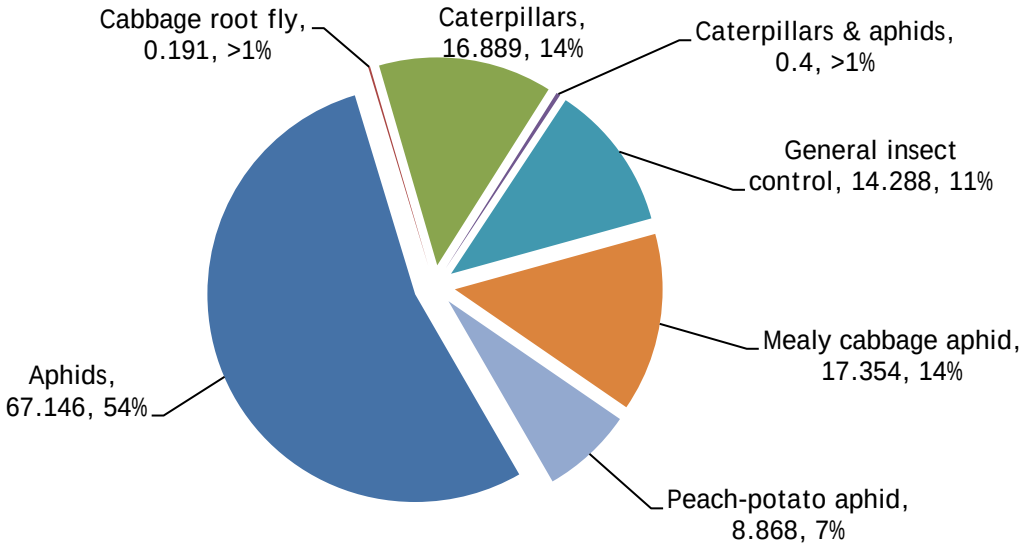


Figure 184: Winter cauliflower: reasons for insecticide use (spha).



Biological controls – winter cauliflower

Basic area treated: 0.191 hectares
Area treated: 0.191 spray hectares
0.8% of the area grown treated with biological controls
All applications were for disease prevention
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.191	0.191		

Pesticide Usage on kale crops:

0.87 hectares of kale crops grown in Northern Ireland all of which were grown in county Antrim

5.24 treated hectares

3.81kg applied

100% of crops received at least one treatment

Kale crops received on average 1.0 fungicide, 3.0 herbicide and 2.0 insecticide applications.

Figure 185: Pesticide usage on kale crops in Northern Ireland (spha), 2011.

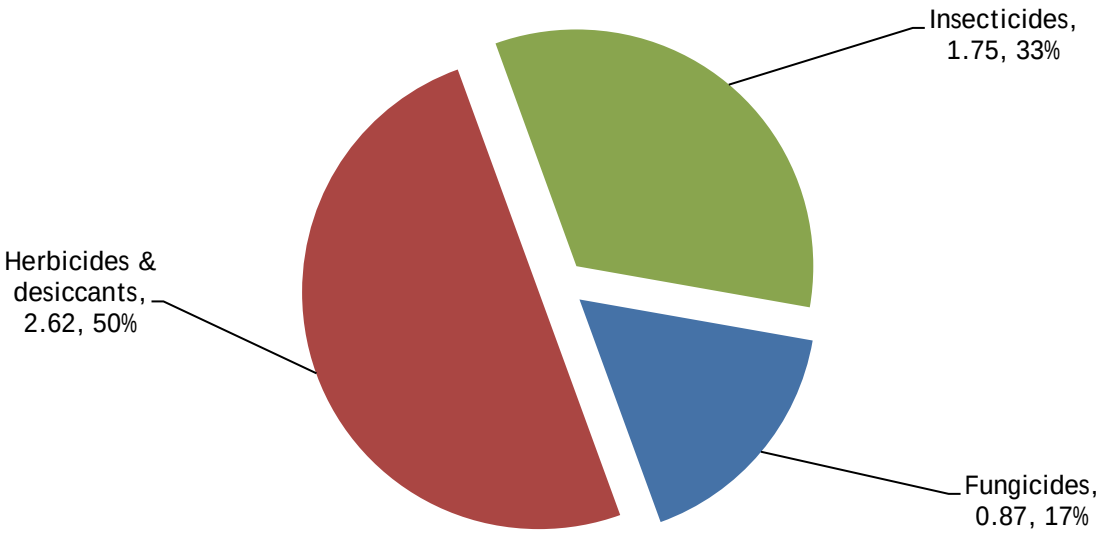


Figure 186: Weight of pesticides applied to kale crops in Northern Ireland (kg), 2011.

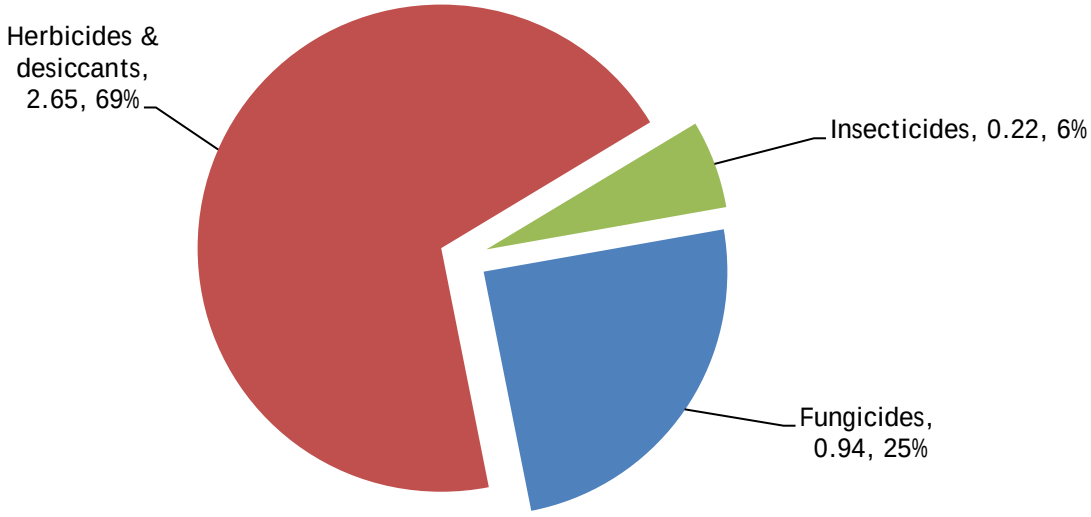
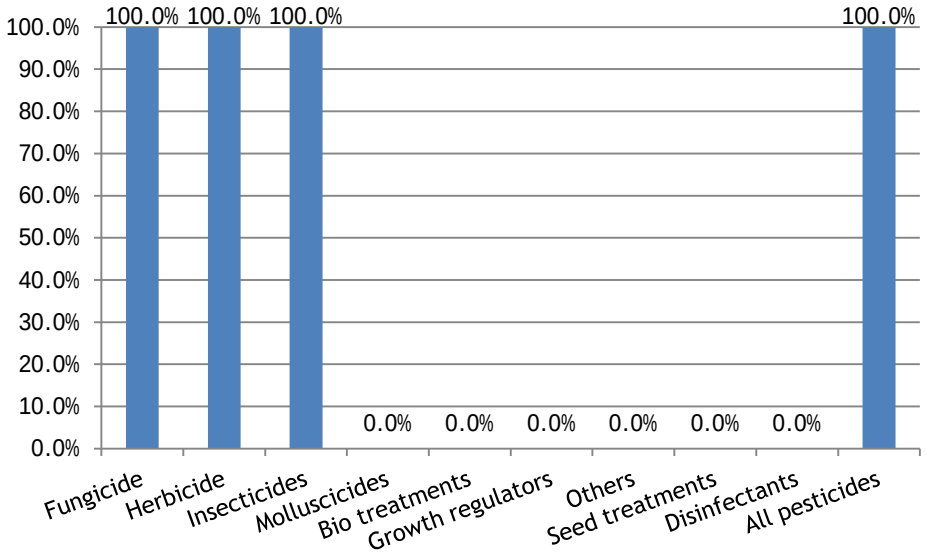


Figure 187: Proportional area of kale crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – kale

Basic area treated: 0.87 hectares
Area treated: 0.87 spray hectares
Weight of active substances applied: 0.94kg
100% of the area grown treated with fungicides
All applications were for general fungal control
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Chlorothalonil/metalaxyl-M	0.873	0.873	0.939	100%

Herbicides & desiccants – kale

Basic area treated: 0.87 hectares
Area treated: 2.62 spray hectares
Weight of active substances applied: 2.65kg
100% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	0.873	0.873	0.943	33.32%
Metazachlor	0.873	0.873	0.655	33.32%
Pendimethalin	0.873	0.873	1.048	33.32%

Figure 188: Herbicide & desiccant active substance usage on kale crops in Northern Ireland (spha), 2011.

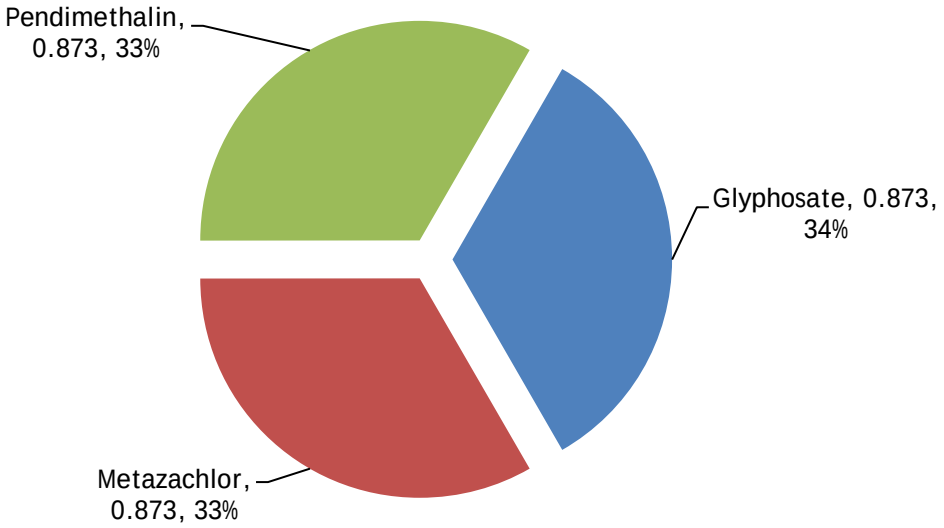


Figure 189: Weight of herbicide & desiccant active substances applied to kale crops in Northern Ireland (kg), 2011.

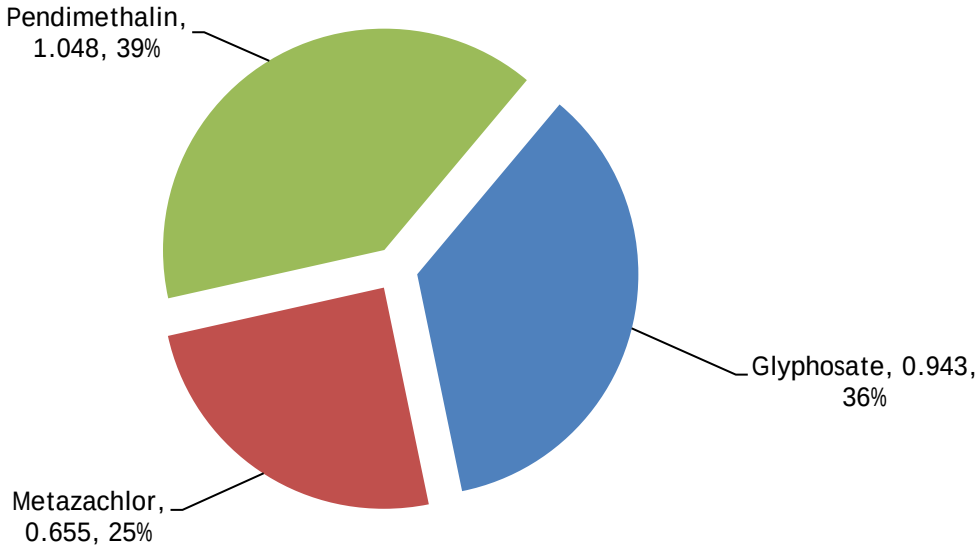
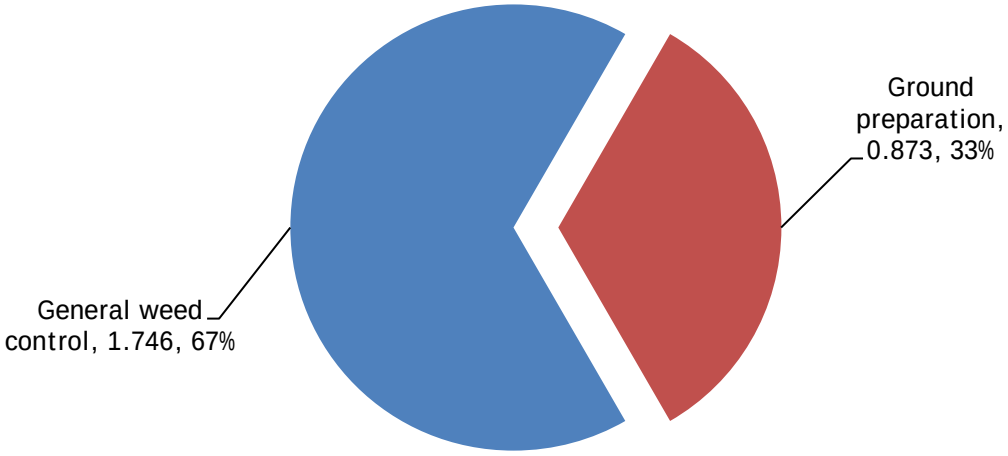


Figure 190: Kale: reasons for herbicide & desiccant use (spha).



Insecticides – kale

Basic area treated: 0.87 hectares
Area treated: 1.75 spray hectares
Weight of active substances applied: 0.223kg
100% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bifenazate	0.873	0.873	0.21	50%
Lambda-cyhalothrin	0.873	0.873	0.013	50%

Figure 191: Insecticide active substance usage on kale crops in Northern Ireland (spha), 2011.

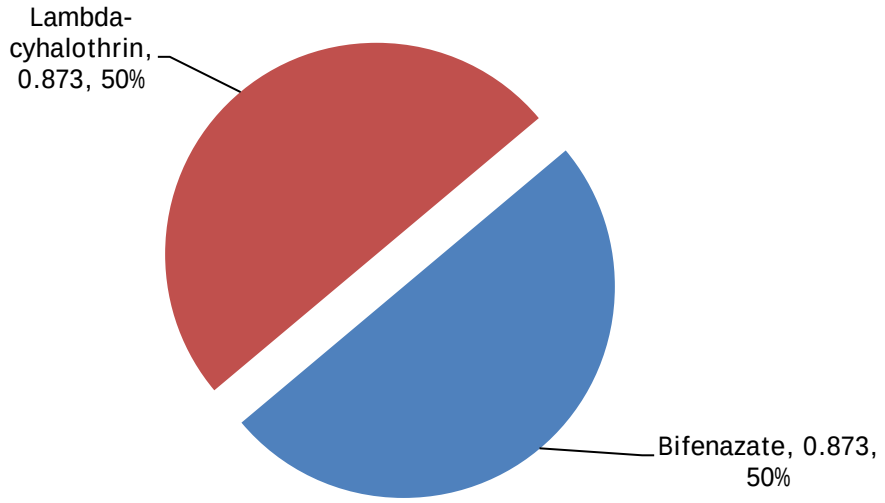
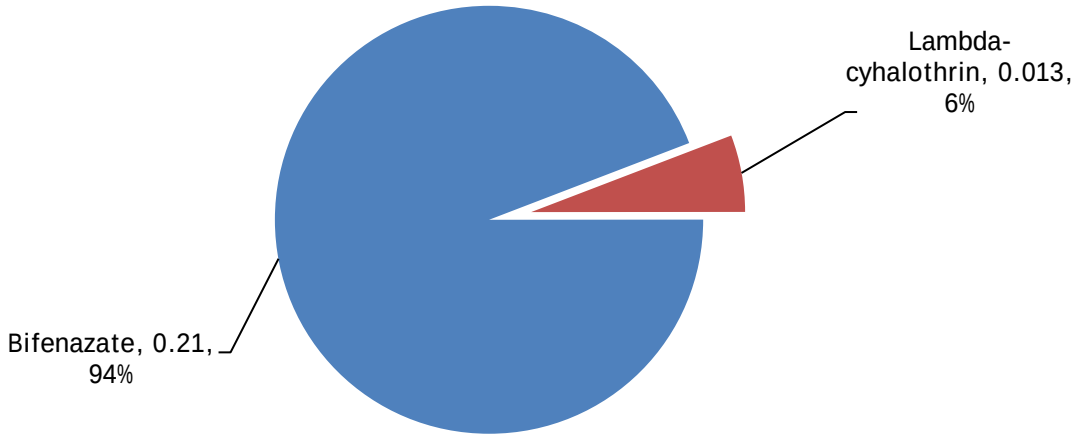
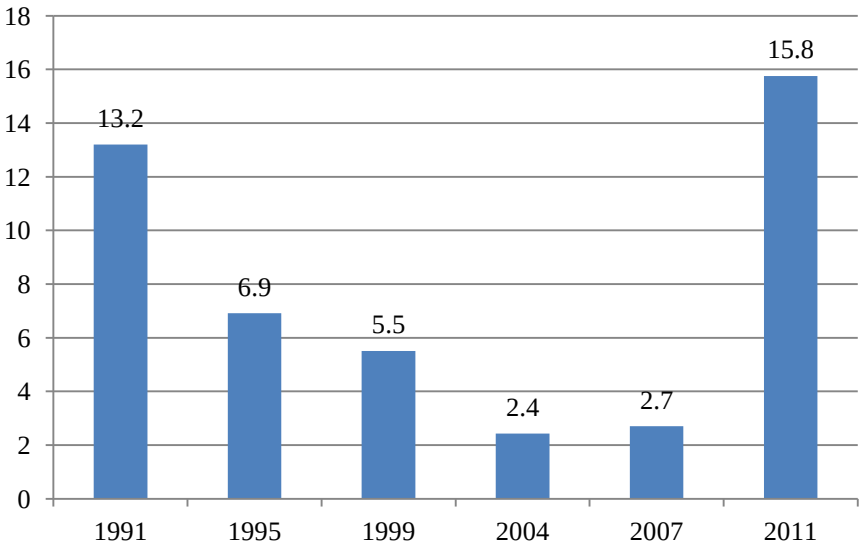


Figure 192: Weight of insecticide active substances applied to kale crops in Northern Ireland (kg), 2011.



Pea crops:

Figure 193: Comparison of the area of pea crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on pea crops:

15.75 hectares of pea crops grown in Northern Ireland

34.10 treated hectares

46.66kg applied

100% of crops received at least one treatment

Pea crops received on average 1.0 fungicide, 2.0 herbicide and 1.0 insecticide.

Figure 194: Regional distribution of pea crops grown in Northern Ireland (ha), 2011.

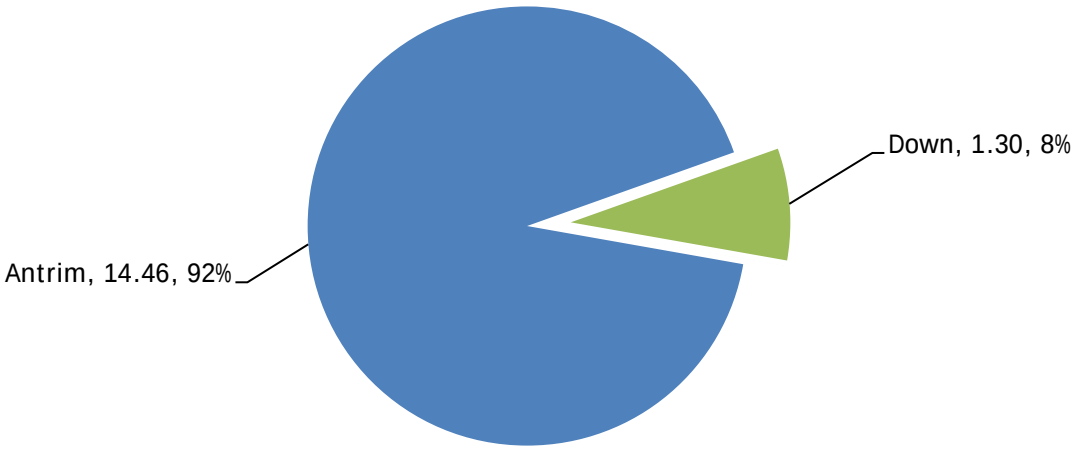


Figure 195: Pesticide usage on pea crops in Northern Ireland (spha), 2011.

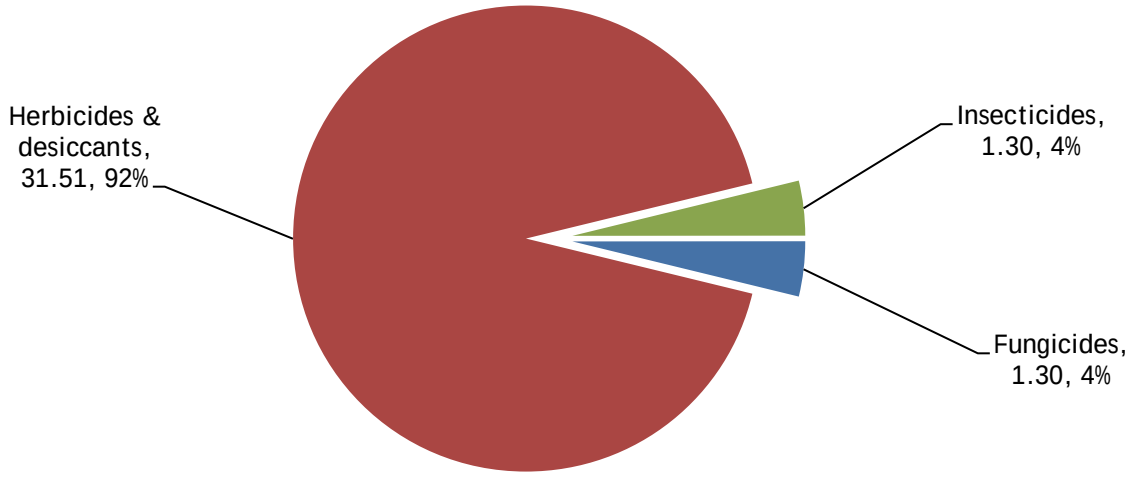


Figure 196: Weight of pesticides applied to pea crops in Northern Ireland (kg), 2011.

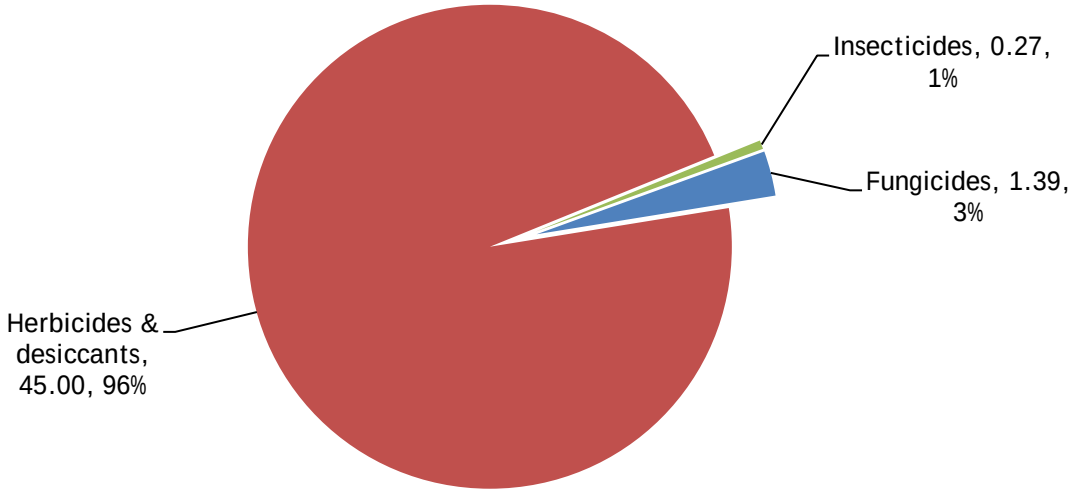
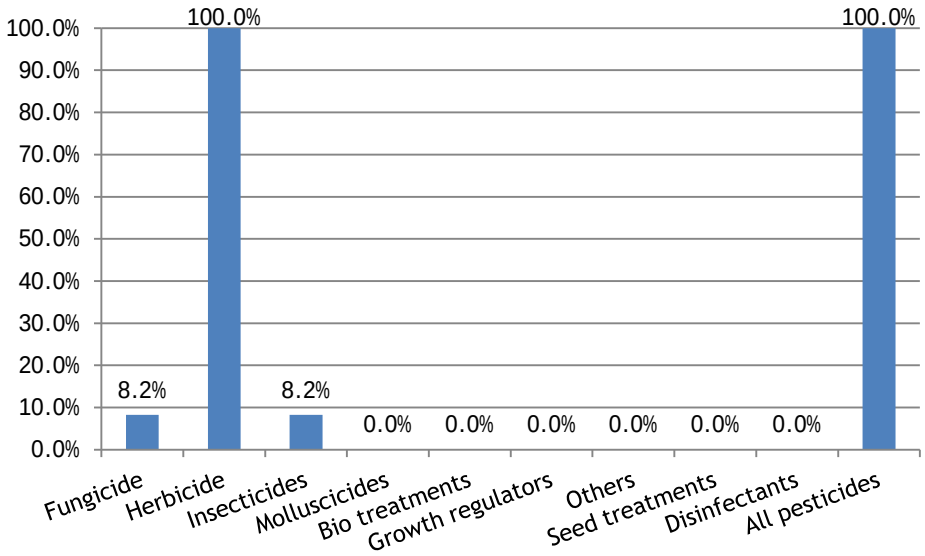


Figure 197: Proportional area of pea crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – pea

Basic area treated: 1.30 hectares
Area treated: 1.30 spray hectares
Weight of active substances applied: 1.39kg
8.2% of the area grown treated with fungicides
All applications were for disease prevention.
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Chlorothalonil/metalaxyl-M	1.296	1.296	1.393	100%

Herbicides & desiccants – pea

Basic area treated: 15.75 hectares
Area treated: 31.51 spray hectares
Weight of active substances applied: 45.00kg
100% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	15.754	15.754	22.686	50.00%
Bentazone	14.458	14.458	20.755	45.89%
Imazamox/pendimethalin	1.296	1.296	1.556	4.11%

Figure 198: Herbicide & desiccant active substance usage on pea crops in Northern Ireland (spha), 2011.

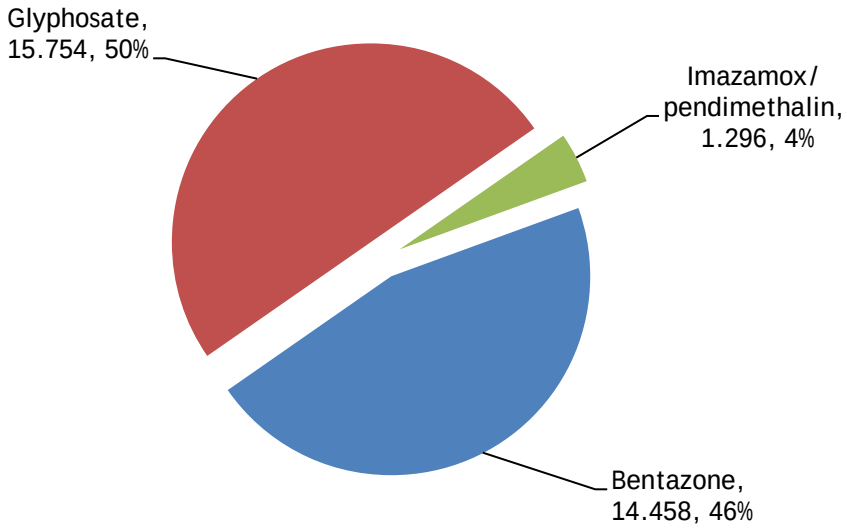


Figure 199: Weight of herbicide & desiccant active substances applied to pea crops in Northern Ireland (kg), 2011.

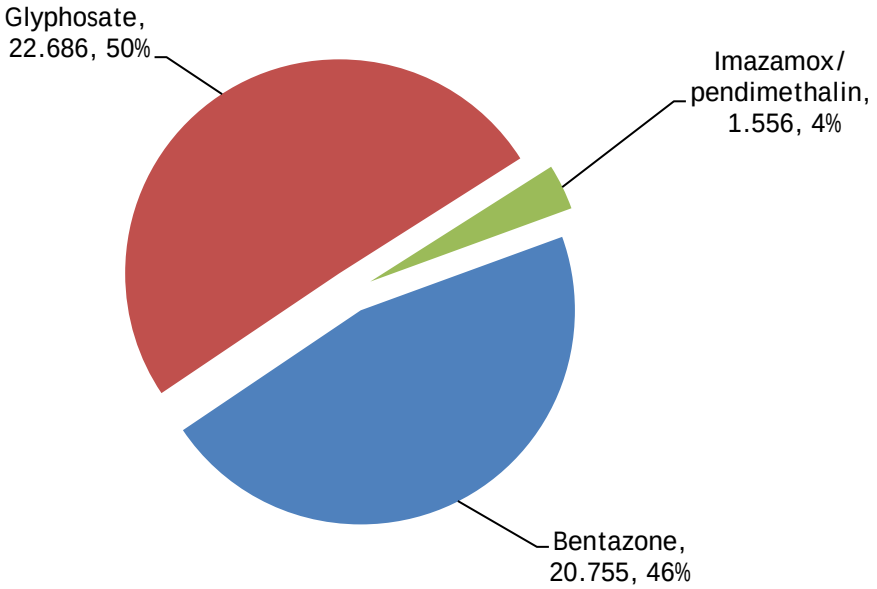
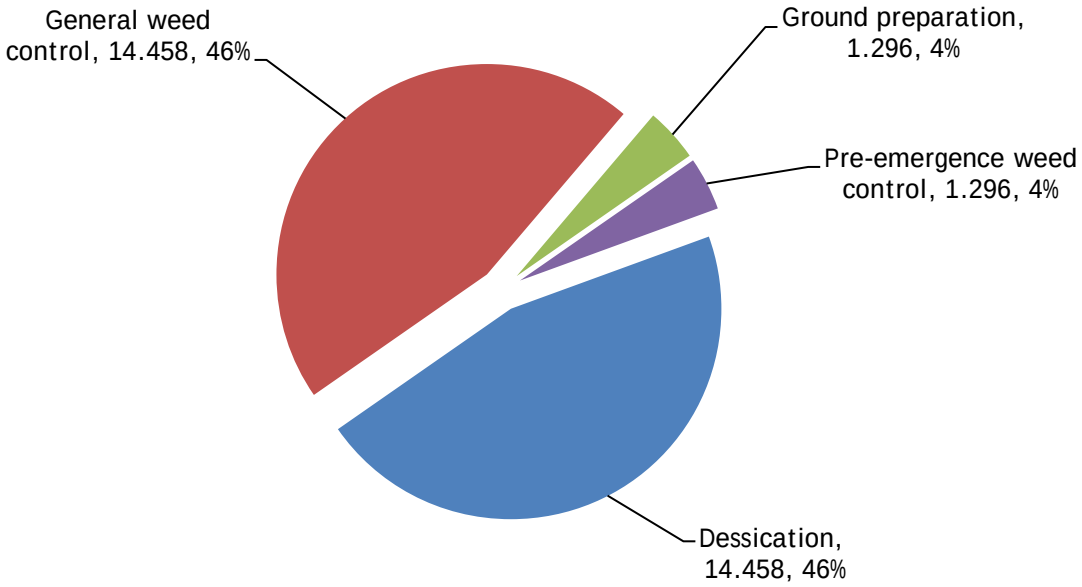


Figure 200: Pea crops: reasons for herbicide & desiccant use (spha).



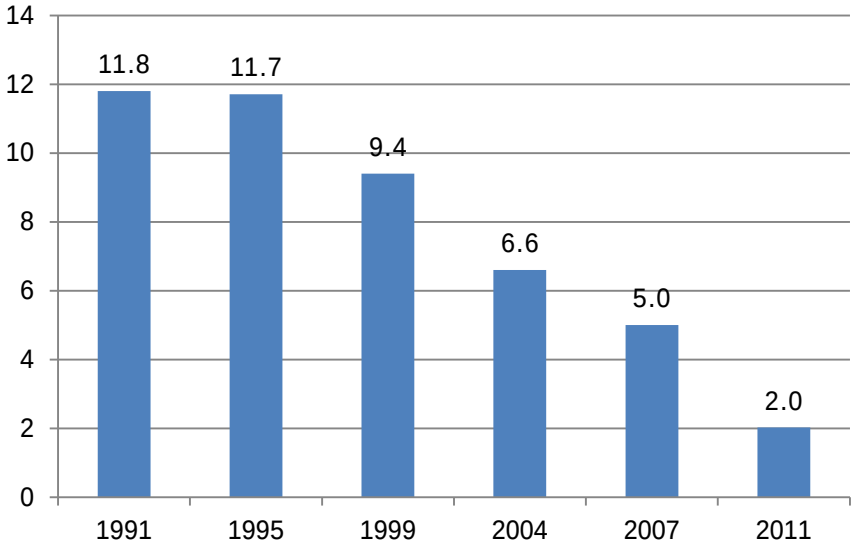
Insecticides – pea

Basic area treated: 1.30 hectares
Area treated: 1.30 spray hectares
Weight of active substances applied: 0.27kg
8.2% of the area grown treated with insecticides
All applications were to control black bean aphid
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pirimicarb	1.296	1.296	0.272	100%

Broad bean crops:

Figure 201: Comparison of the area of broad bean crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on broad bean crops:

2.02 hectares of broad bean crops grown in Northern Ireland

7.52 treated hectares

7.17kg applied

100% of crops received at least one treatment

Broad bean crops received on average 1.0 fungicide, 1.6 herbicide, 1.0 insecticide and 1.0 seed treatment applications.

Figure 202: Regional distribution of broad bean crops grown in Northern Ireland (ha), 2011.

Figure 203: Pesticide usage on broad bean crops in Northern Ireland (spha), 2011.

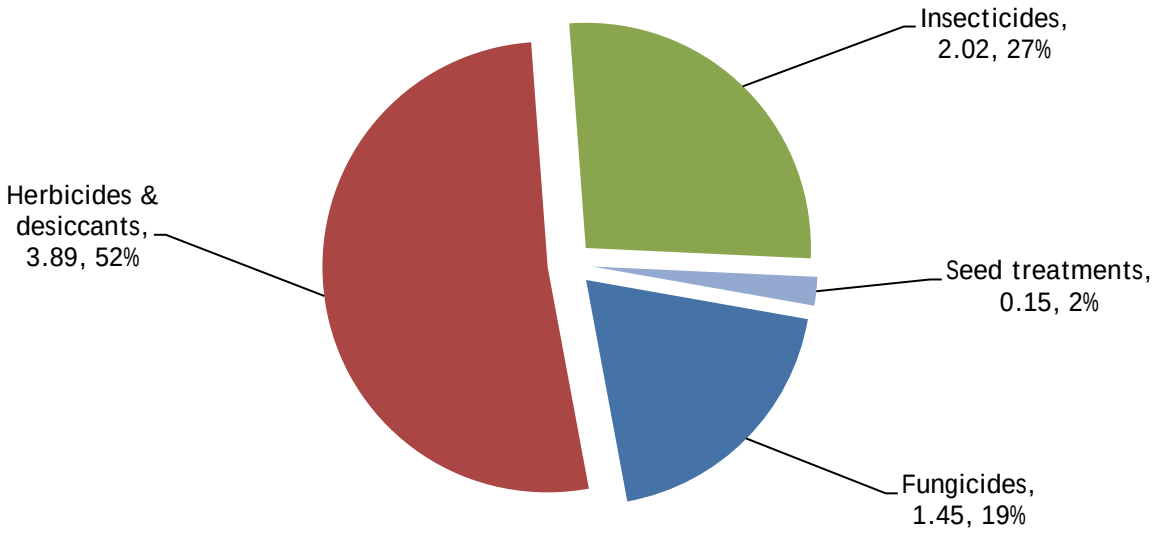


Figure 204: Weight of pesticides applied to broad bean crops in Northern Ireland (kg), 2011.

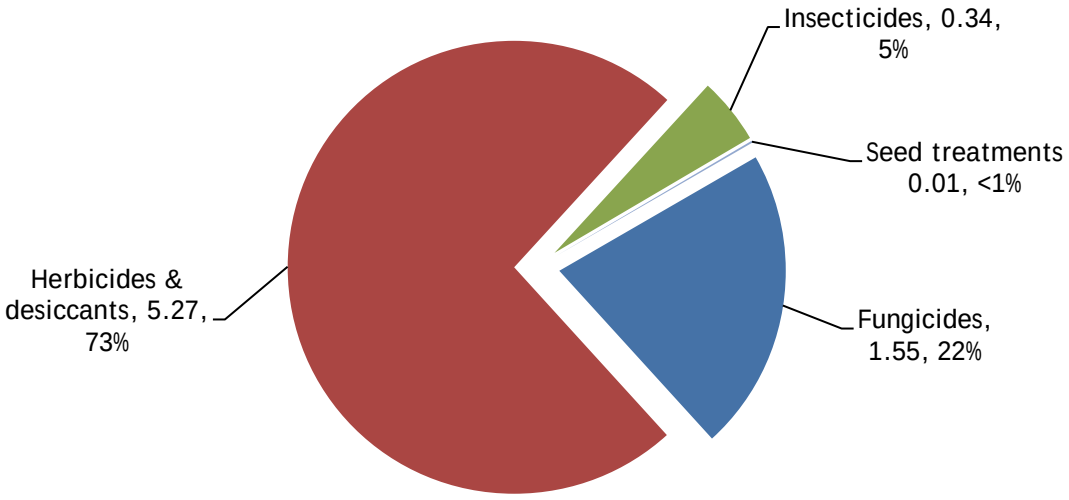
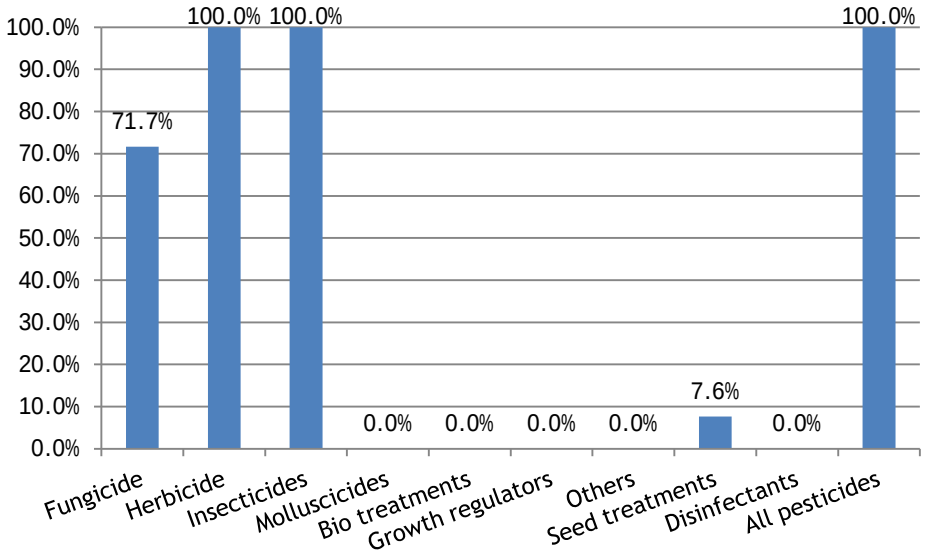


Figure 205: Proportional area of broad bean crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – broad bean

Basic area treated: 1.45 hectares
Area treated: 1.45 spray hectares
Weight of active substances applied: 1.55kg
71.7% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Chlorothalonil/metalaxyl-M	1.296	1.296	1.393	89.38%
Chlorothalonil	0.154	0.154	0.154	10.62%

Figure 206: Fungicide active substance usage on broad bean crops in Northern Ireland (spha), 2011.

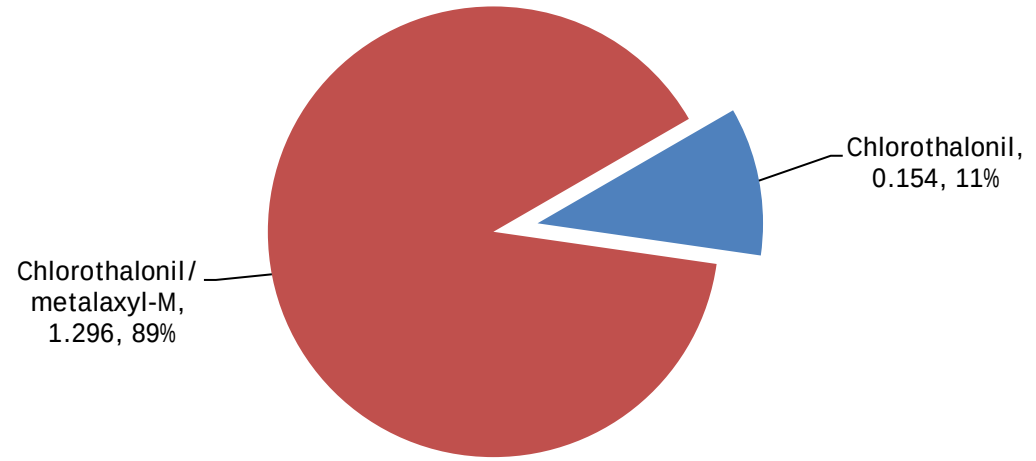


Figure 207: Weight of fungicide active substances applied to broad bean crops in Northern Ireland (kg), 2011.

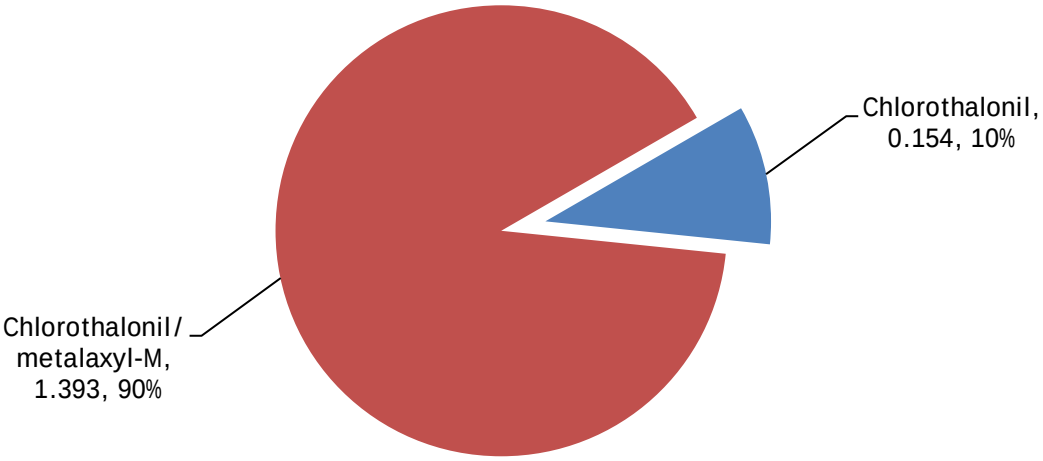
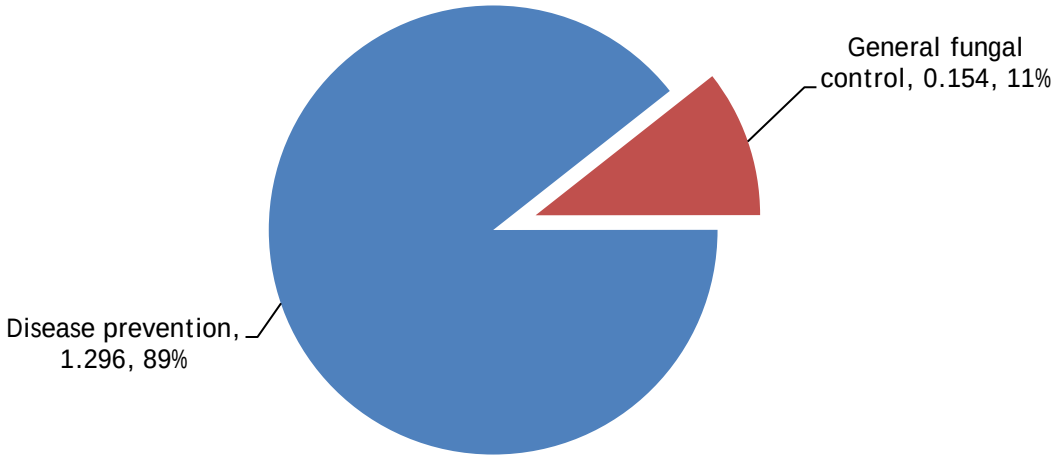


Figure 208: Broad bean: reasons for fungicide use (spha).



Herbicides & desiccants – broad bean

Basic area treated: 2.02 hectares
Area treated: 3.89 spray hectares
Weight of active substances applied: 1.55kg
100% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	1.869	1.869	2.691	48.02%
Imazamox/pendimethalin	1.296	1.296	1.556	33.30%
Bentazone	0.573	0.573	0.822	14.72%
Pendimethalin	0.154	0.154	0.203	3.96%

Figure 209: Herbicide & desiccant active substance usage on broad bean crops in Northern Ireland (spha), 2011.

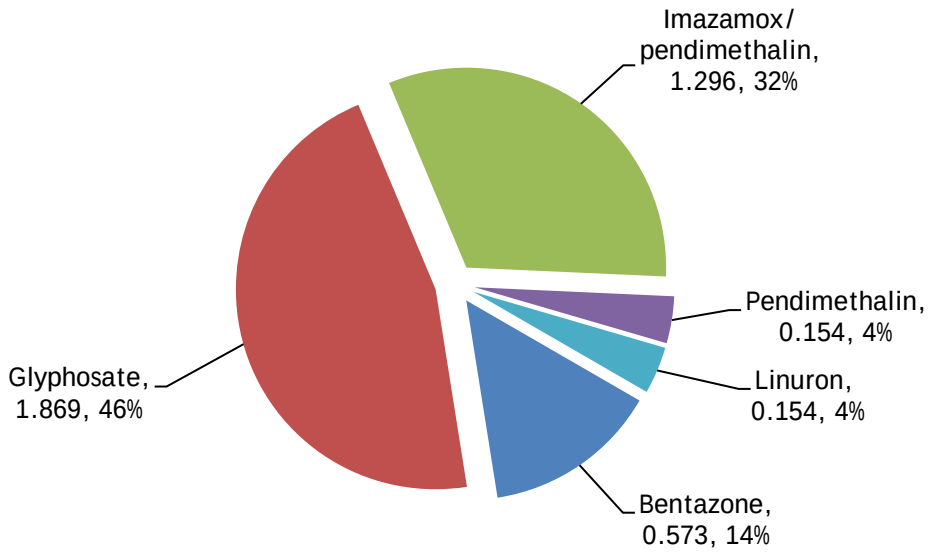


Figure 210: Weight of herbicide & desiccant active substances applied to broad bean crops in Northern Ireland (kg), 2011.

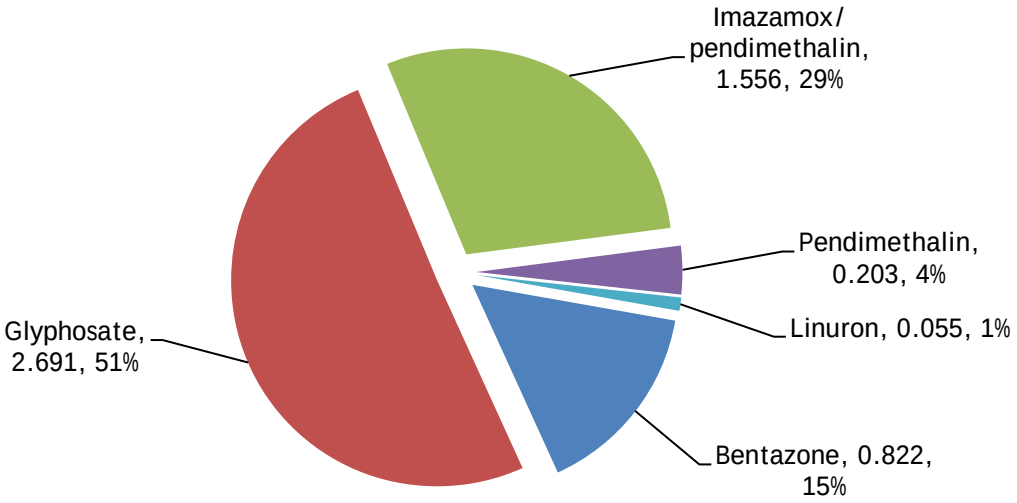
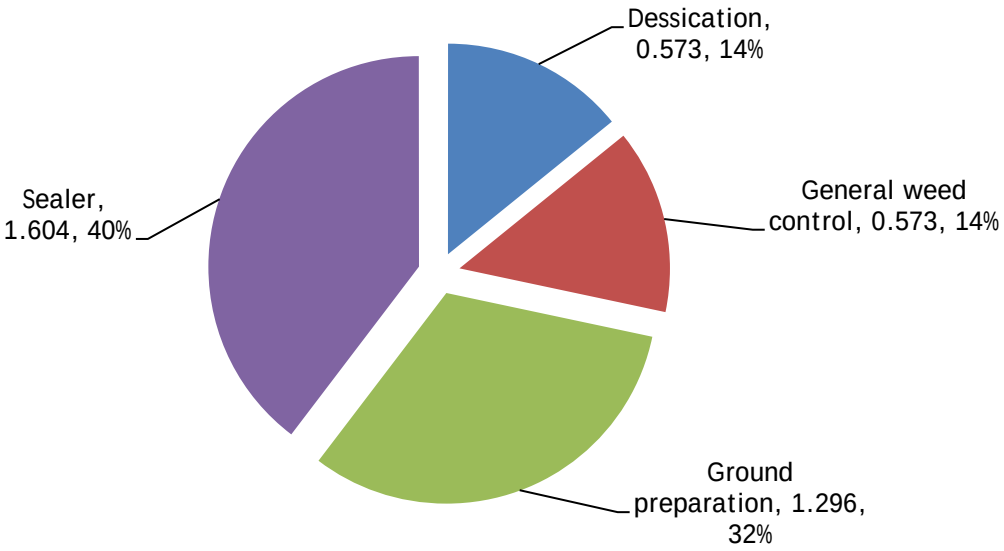


Figure 211: Broad bean: reasons for herbicide & desiccant use (spha).



Insecticides – broad bean

Basic area treated: 2.02 hectares
Area treated: 3.89 spray hectares
Weight of active substances applied: 0.34kg
100% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pirimicarb	1.296	1.296	0.272	69.34%
Cypermethrin	0.573	0.573	0.011	30.66%

Figure 212: Insecticide active substance usage on broad bean crops in Northern Ireland (spha), 2011.

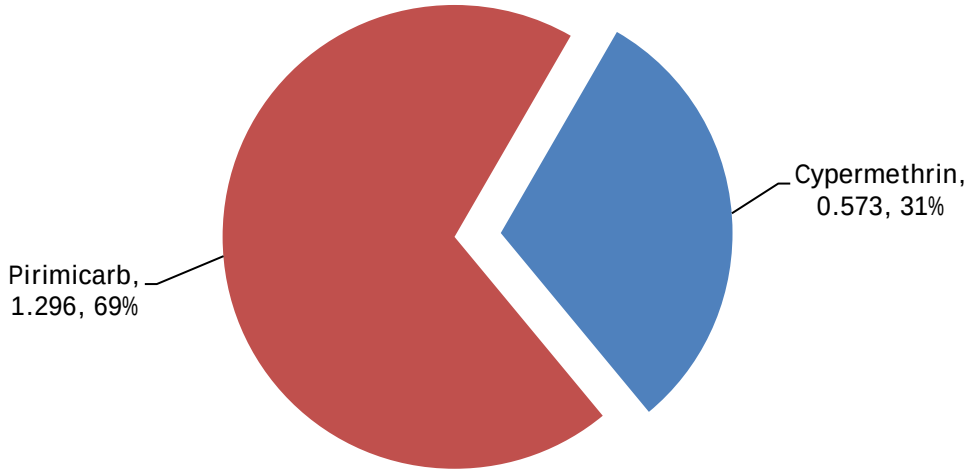


Figure 213: Weight of insecticide active substances applied to broad bean crops in Northern Ireland (kg), 2011.

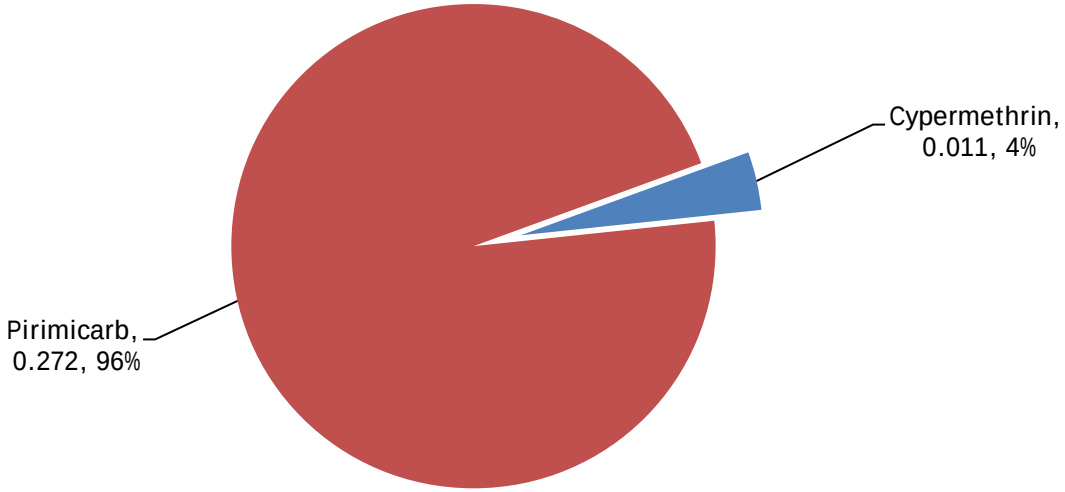
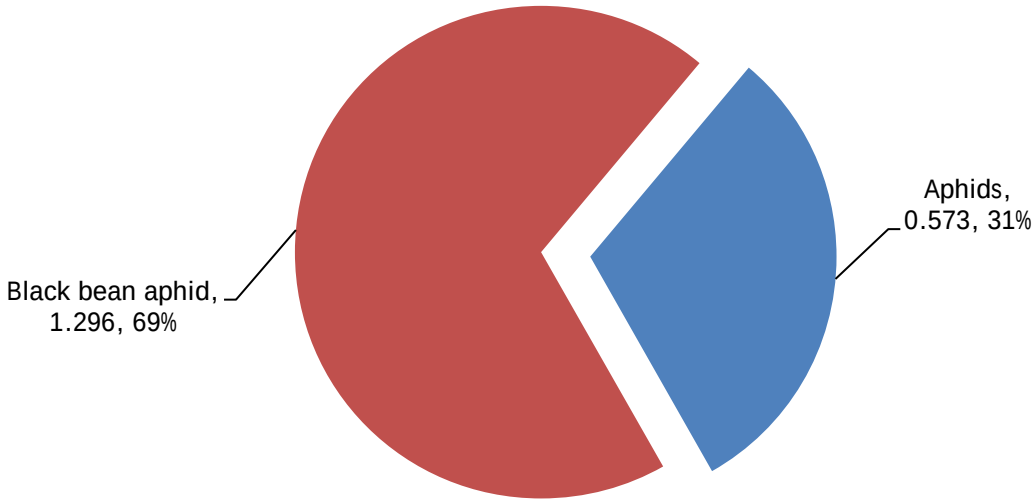


Figure 214: Broad bean: reasons for insecticide use (spha).



Pesticide Usage on courgette crops:

0.0002 hectares of courgette crops grown in Northern Ireland all of which grown in County Down

0.0002 treated hectares

0.005kg applied

100% of crops received at least one treatment

Courgettes received on average 1.0 fungicide application.

Pesticide Usage on pumpkin crops:

0.0023 hectares of pumpkin crops grown in Northern Ireland all of which grown in County Down

0.0023 treated hectares

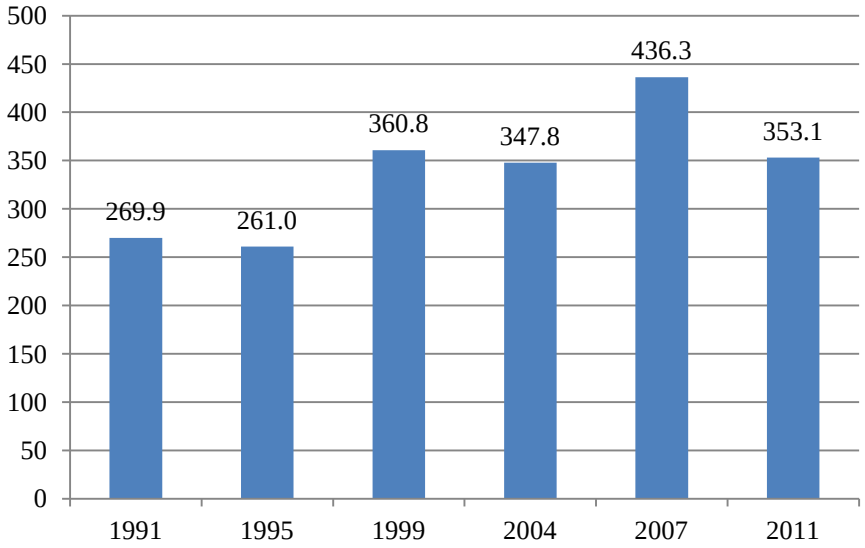
0.0065kg applied

100% of crops received at least one treatment

Pumpkins received on average 1.0 fungicide application.

Carrot crops:

Figure 215: Comparison of the area of carrot crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on carrot crops:

353.13 hectares of carrot crops grown in Northern Ireland

4,074.25 treated hectares

1,904.67kg applied

100% of crops received at least one treatment

Carrot crops received on average 2.7 fungicide, 3.8 herbicide, 2.8 insecticide, 1.0 molluscide

Figure 216: Regional distribution of carrot crops grown in Northern Ireland (ha), 2011.

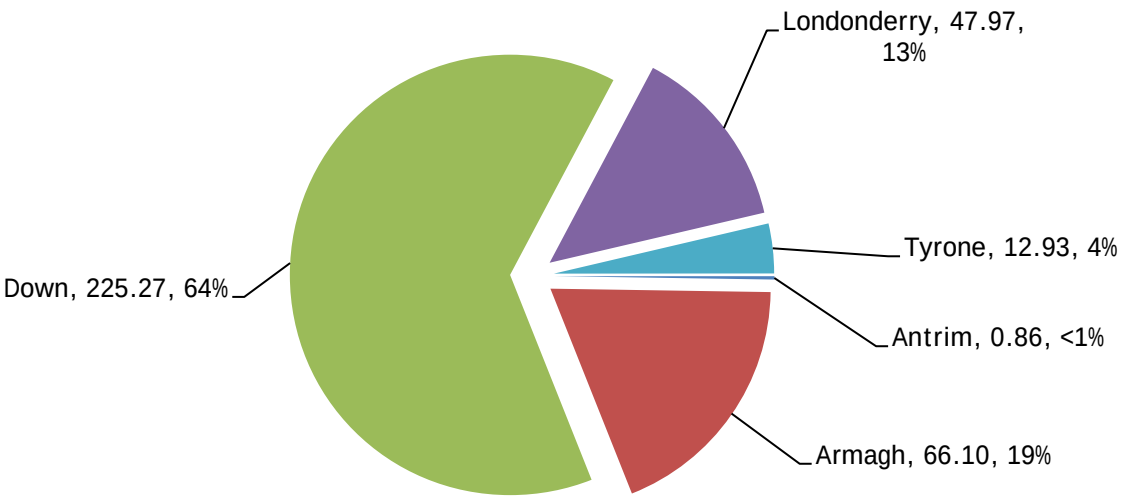


Figure 217: Pesticide usage on carrot crops in Northern Ireland (spha), 2011.

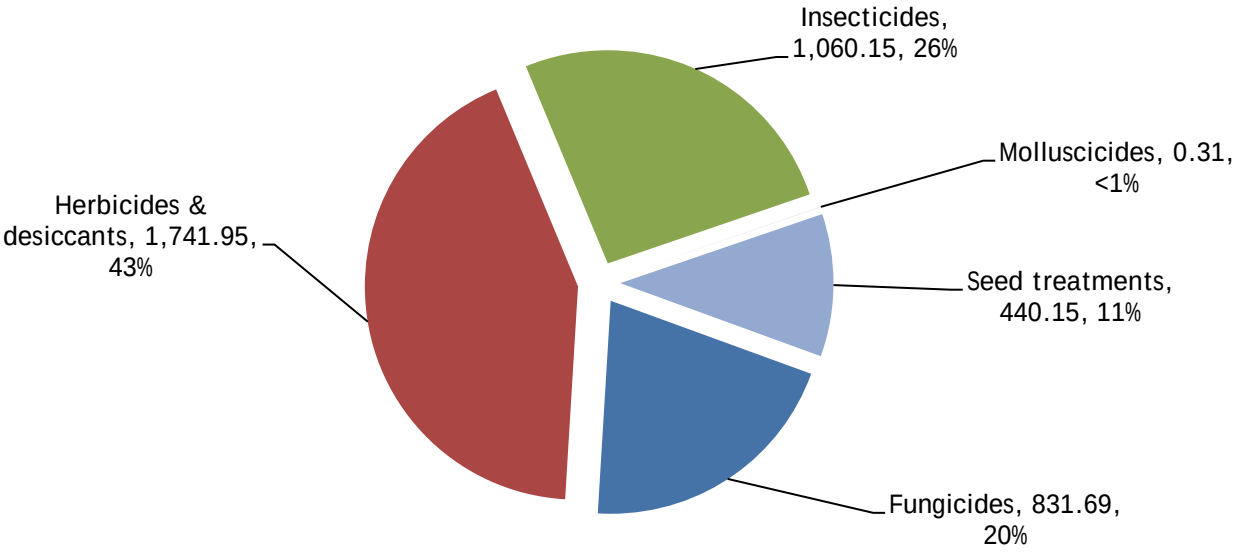


Figure 218: Weight of pesticides applied to carrot crops in Northern Ireland (kg), 2011.

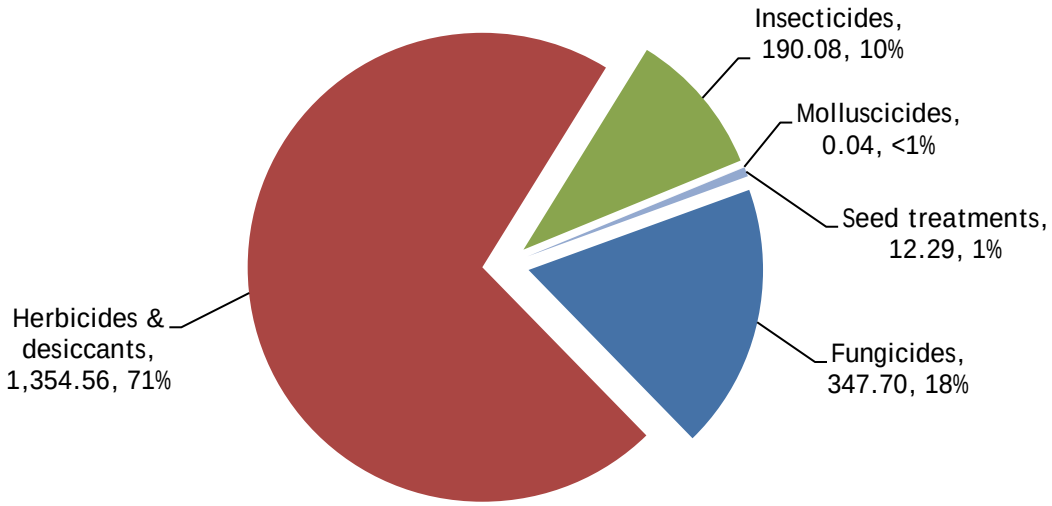
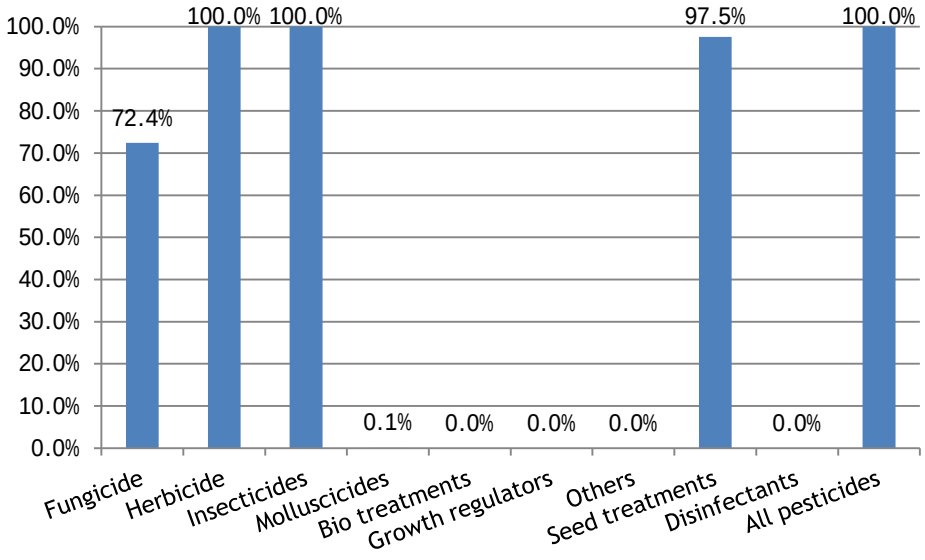


Figure 219: Proportional area of carrot crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – carrot

Basic area treated: 255.70 hectares
Area treated: 831.69 spray hectares
Weight of active substances applied: 347.70kg
72.4% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin/difenoconazole	189.862	104.162	61.705	22.83%
Metalaxyl-M	152.969	152.969	88.725	18.39%
Tebuconazole	117.704	74.854	27.977	14.15%
Boscalid/pyraclostrobin	115.974	63.055	38.397	13.94%
Cyprodinil/fludioxonil	105.839	52.92	52.92	12.73%

Figure 220: Fungicide active substance usage on carrot crops in Northern Ireland (spha), 2011.

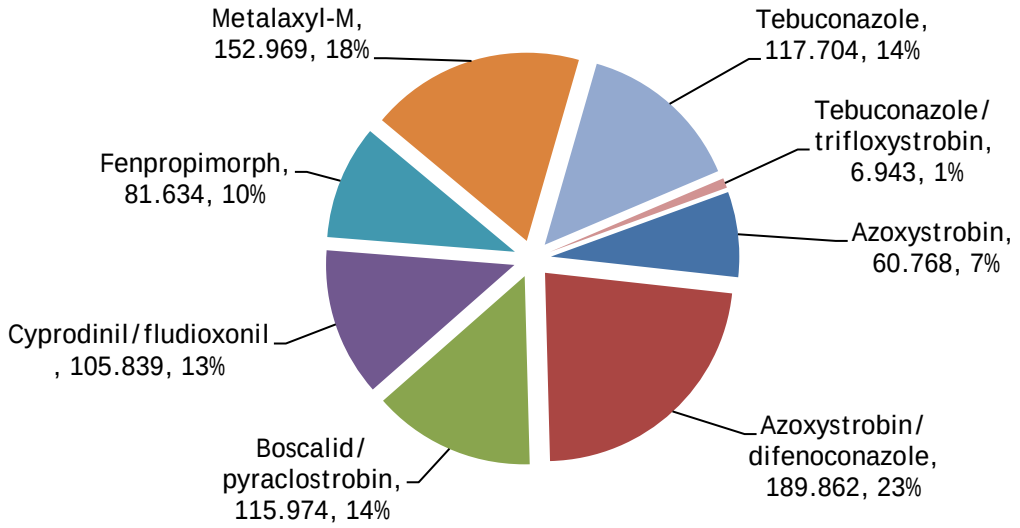


Figure 221: Weight of fungicide active substances applied to carrot crops in Northern Ireland (kg), 2011.

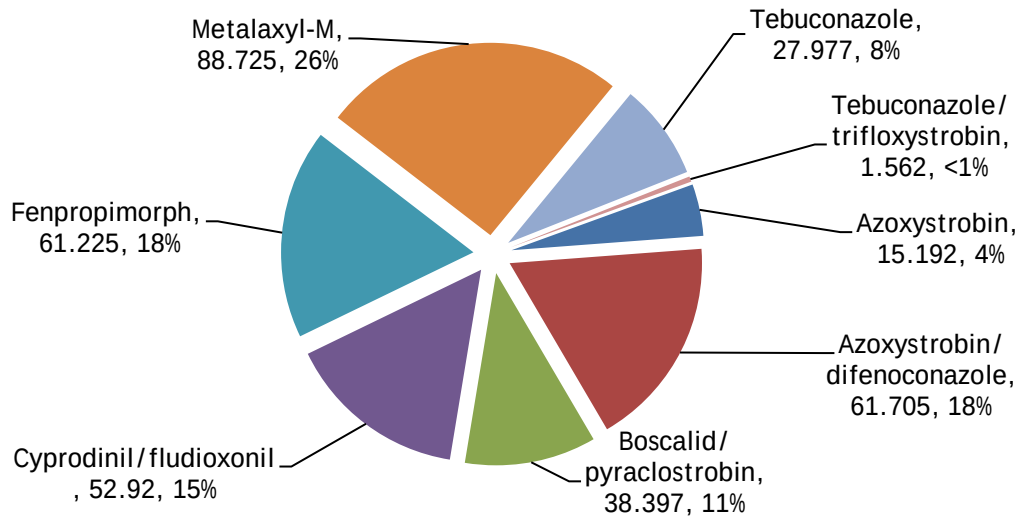
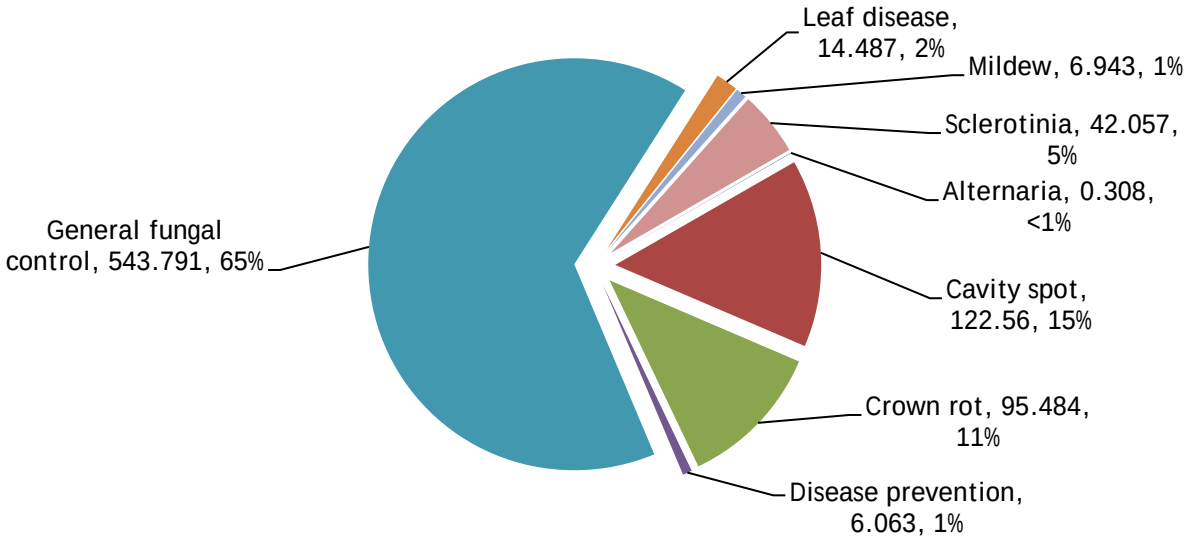


Figure 222: Carrot: reasons for fungicide use (spha).



Herbicides & desiccants – carrot

Basic area treated: 353.11 hectares
Area treated: 1741.95 spray hectares
Weight of active substances applied: 1,354.56kg
100% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Linuron	614.816	342.677	203.785	35.29%
Prosulfocarb	346.201	257.712	609.885	19.87%
Pendimethalin	301.73	301.73	342.344	17.32%
Clomazone	157.395	157.395	11.087	9.04%
Glyphosate	127.831	127.831	132.806	7.34%

Figure 223: Herbicide & desiccant active substance usage on carrot crops in Northern Ireland (spha), 2011.

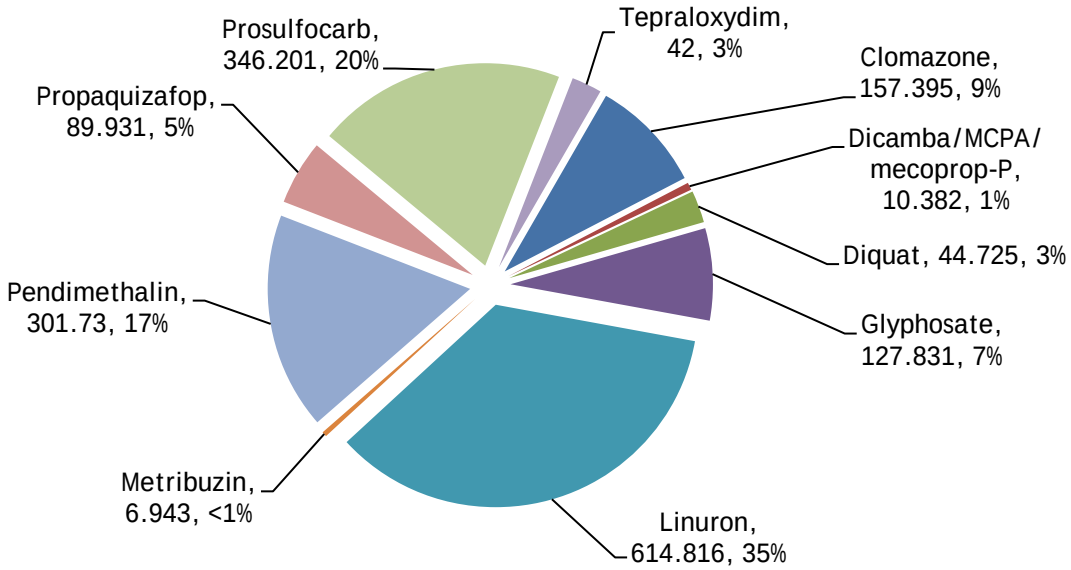


Figure 224: Weight of herbicide & desiccant active substances applied to carrot crops in Northern Ireland (kg), 2011.

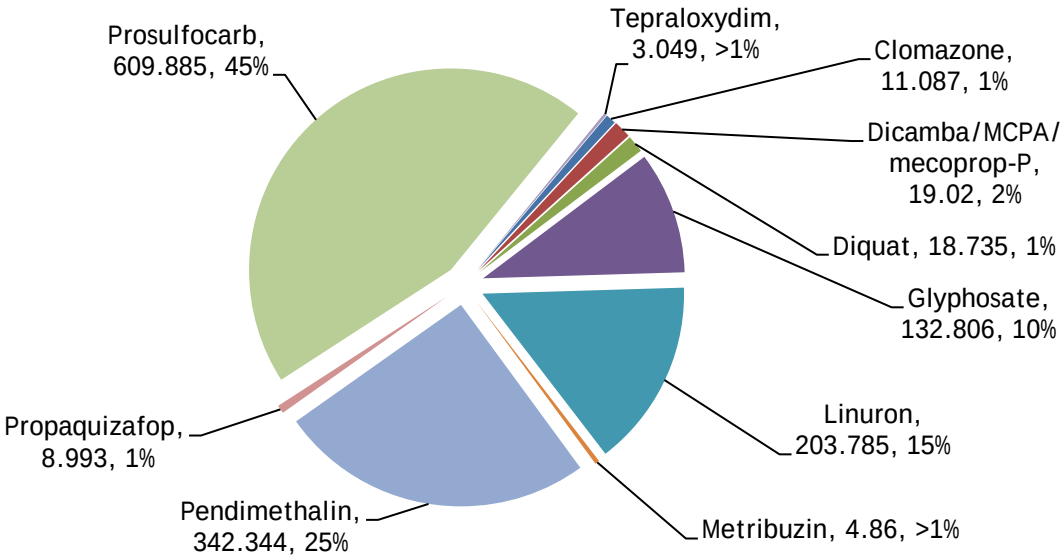
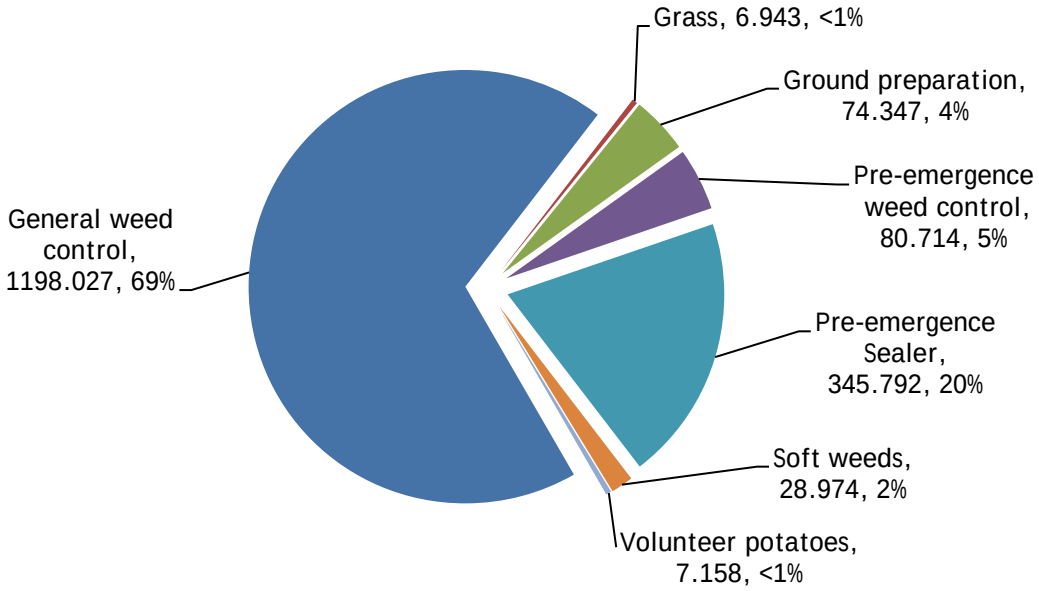


Figure 225: Carrot: reasons for herbicide & desiccant use (spha).



Insecticides – carrot

Basic area treated: 353.11 hectares
Area treated: 1,060.15 spray hectares
Weight of active substances applied: 190.08kg
100% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	830.384	298.652	9.779	78.33%
Oxamyl	100.83	100.83	167.925	9.51%
Pirimicarb	86.089	65.218	12.053	8.12%
Deltamethrin	42.85	42.85	0.321	4.04%

Figure 226: Insecticide active substance usage on carrot crops in Northern Ireland (spha), 2011.

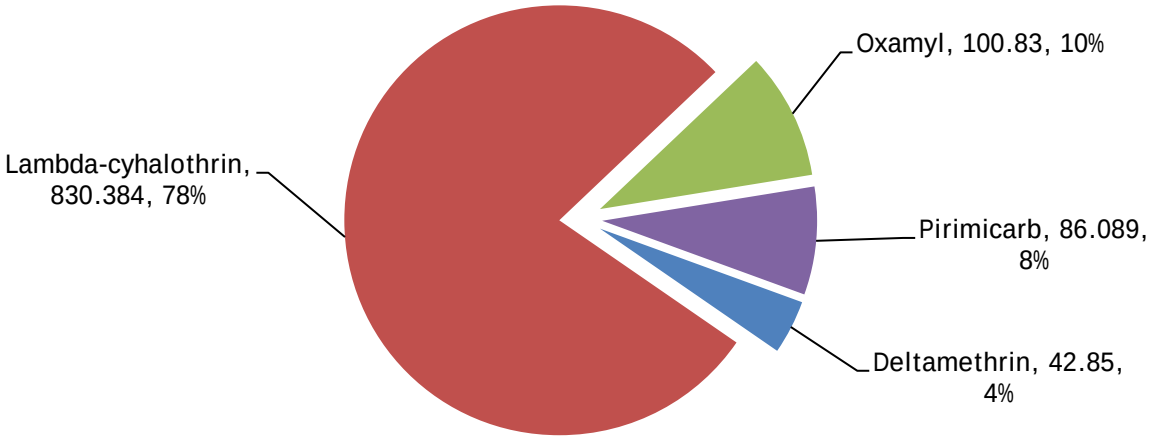


Figure 227: Weight of insecticide active substances applied to carrot crops in Northern Ireland (kg), 2011.

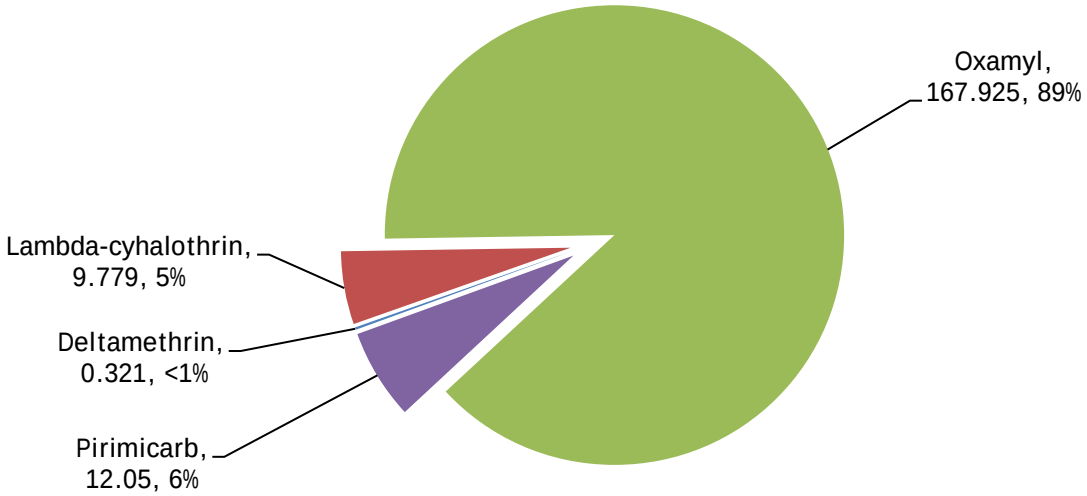
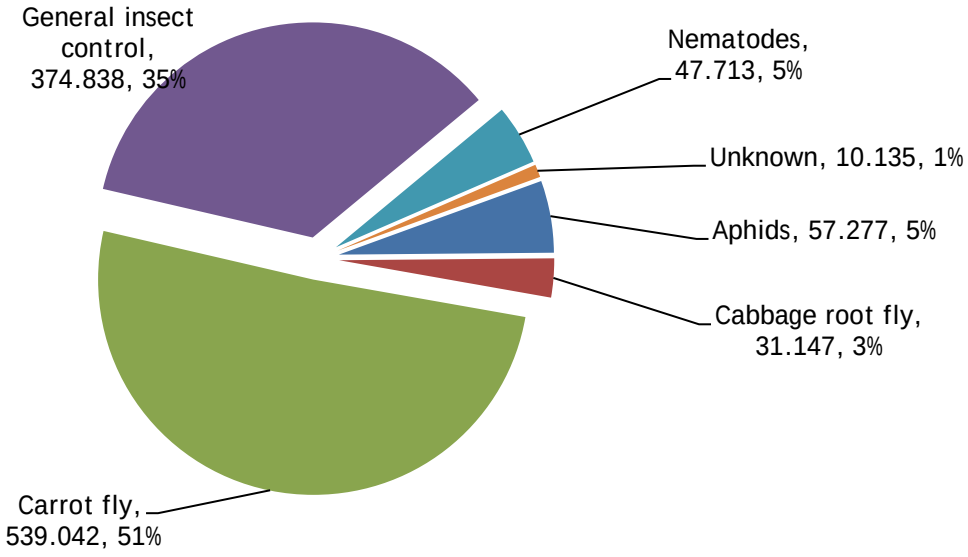


Figure 228: Carrot: reasons for insecticide use (spha).



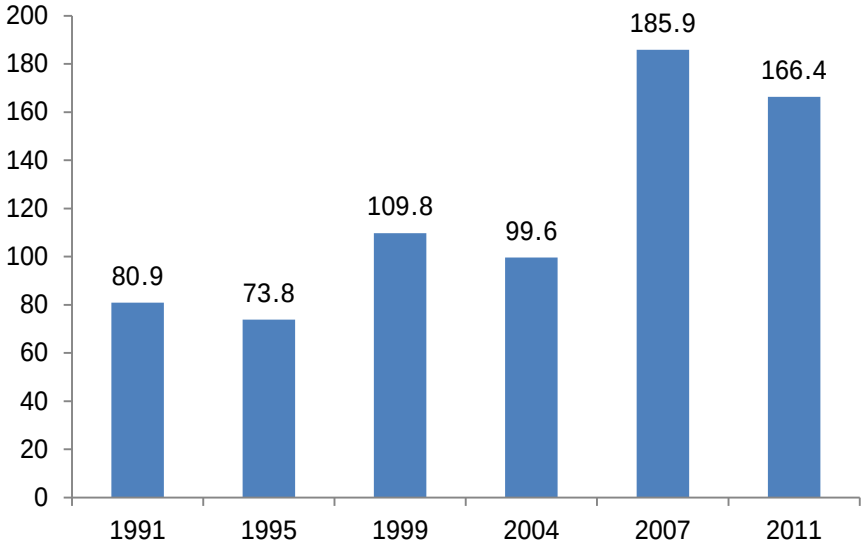
Molluscicides – carrot

Basic area treated: 0.308 hectares
Area treated: 0.308 spray hectares
Weight of active substances applied: 0.037kg
0.1% of the area grown treated with molluscicides
All applications were to control slugs
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Methiocarb	0.308	0.308	0.037	

Parsnip crops:

Figure 229: Comparison of the area of parsnip crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on parsnip crops:

166.41 hectares of parsnip crops grown in Northern Ireland

2,052.88 treated hectares

1,064.44kg applied

99.9% of crops received at least one treatment

Parsnip crops received on average 3.5 fungicide, 3.4 herbicide, 3.3 insecticide, molluscicide and 1.0 growth regulator applications.

Figure 230: Regional distribution of parsnip crops grown in Northern Ireland (ha), 2011.

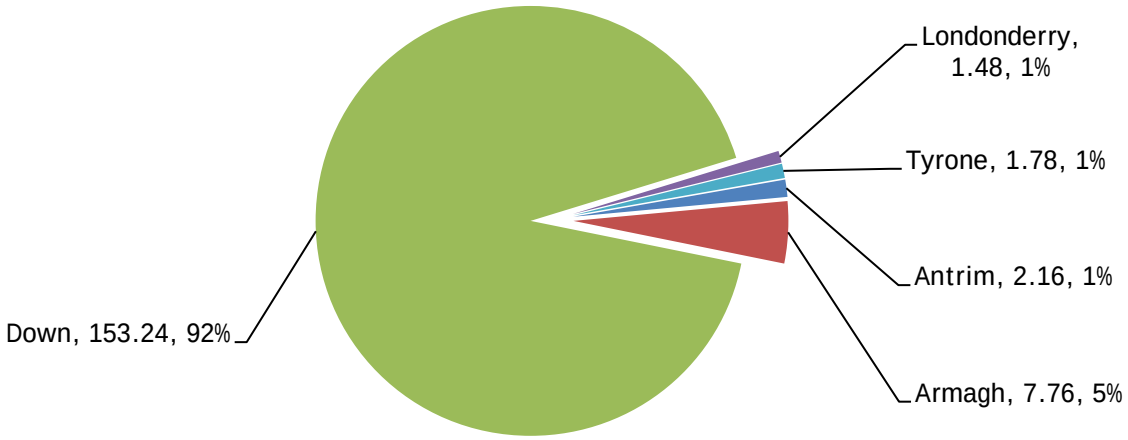


Figure 231: Pesticide usage on parsnip crops in Northern Ireland (spha), 2011.

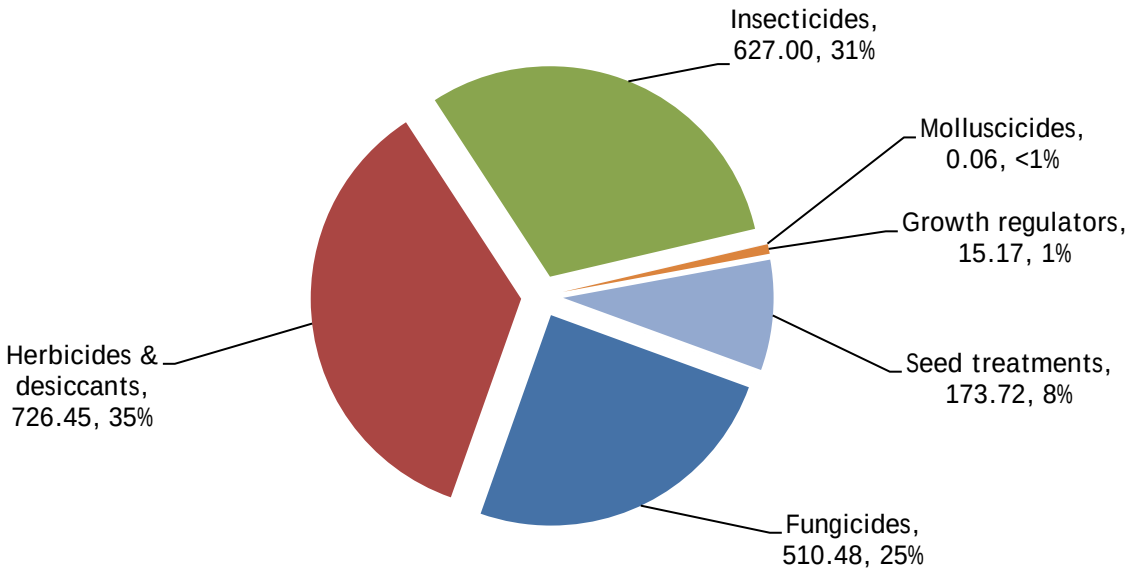


Figure 232: Weight of pesticides applied to parsnip crops in Northern Ireland (kg), 2011.

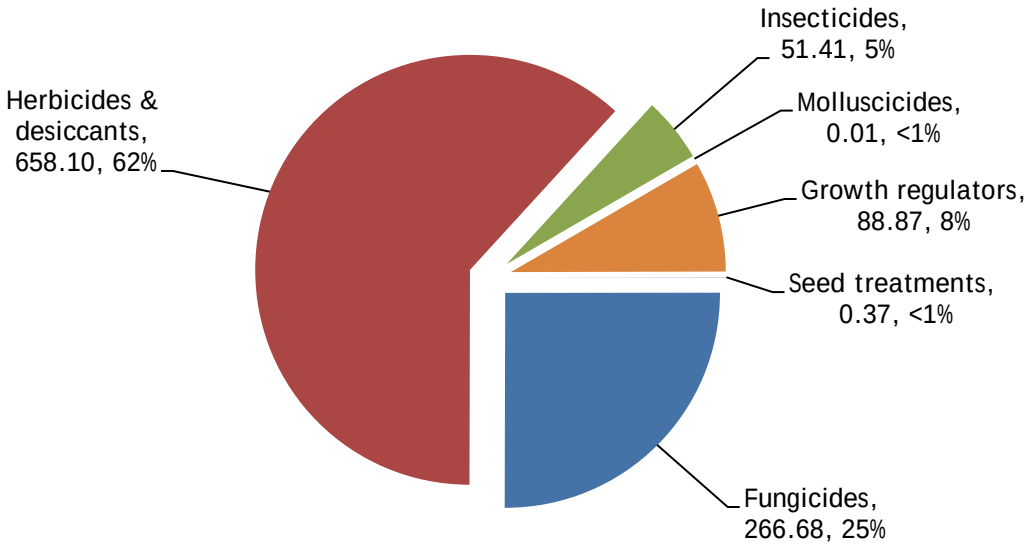
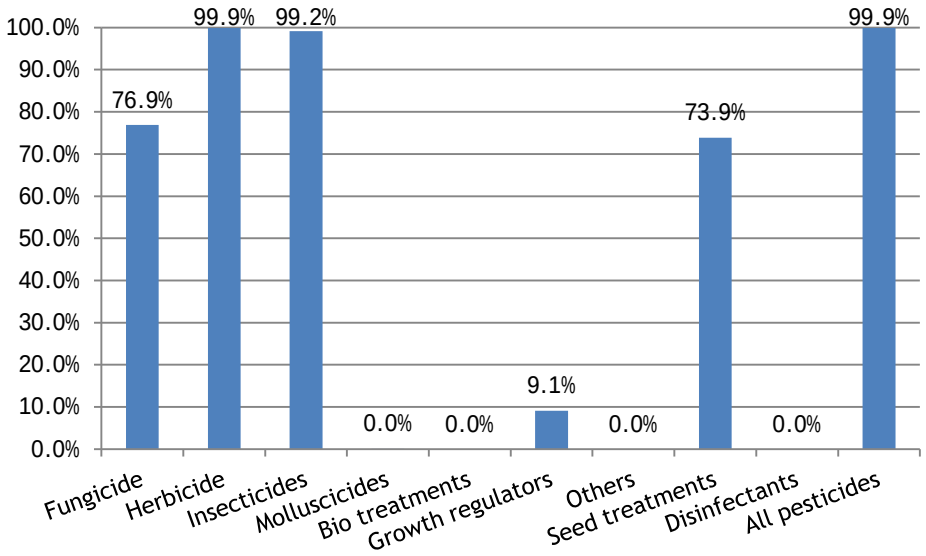


Figure 233: Proportional area of parsnip crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – parsnip

Basic area treated: 127.93 hectares
Area treated: 510.48 spray hectares
Weight of active substances applied: 266.68kg
76.9% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metalaxyl-M	96.265	96.265	44.814	18.86%
Fenpropimorph	73.714	52.021	55.285	14.44%
Tebuconazole/trifloxystrobin	56.575	56.575	12.729	11.08%
Tebuconazole	55.761	48.966	13.94	10.92%
Boscalid/pyraclostrobin	50.777	50.777	16.96	9.95%

Figure 234: Fungicide active substance usage on parsnip crops in Northern Ireland (spha), 2011.

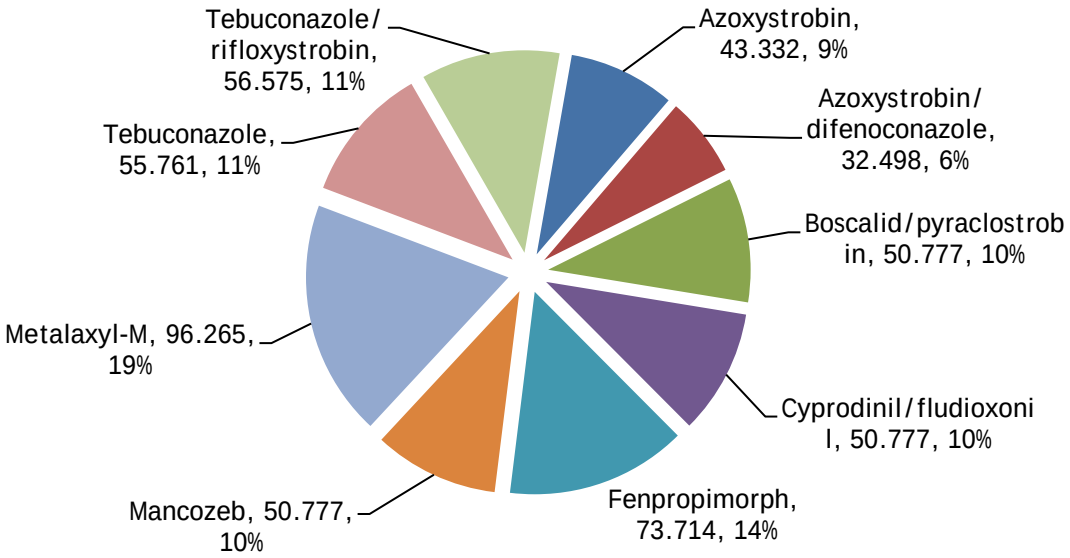


Figure 235: Weight of fungicide active substances applied to parsnip crops in Northern Ireland (kg), 2011.

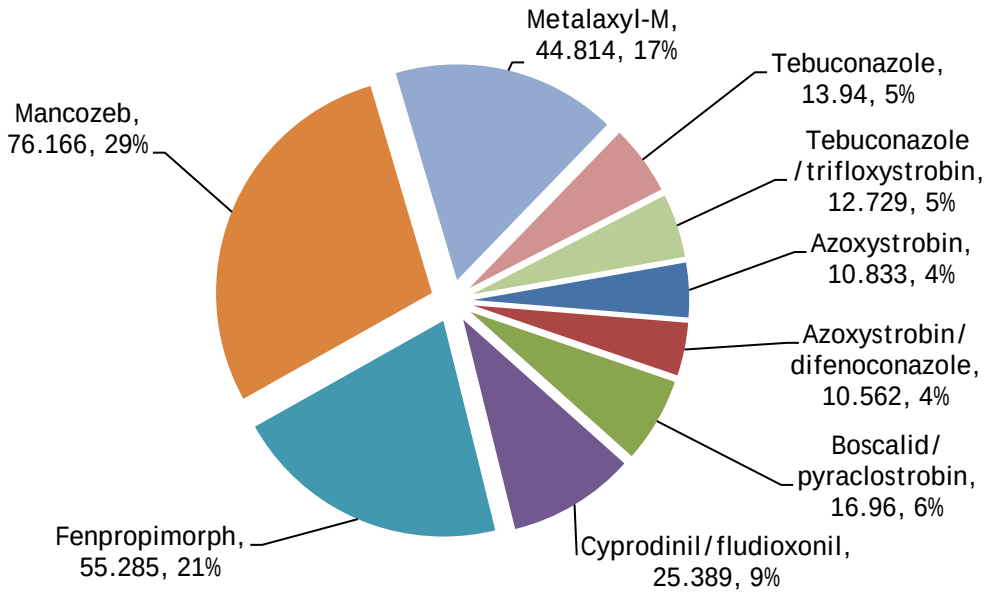
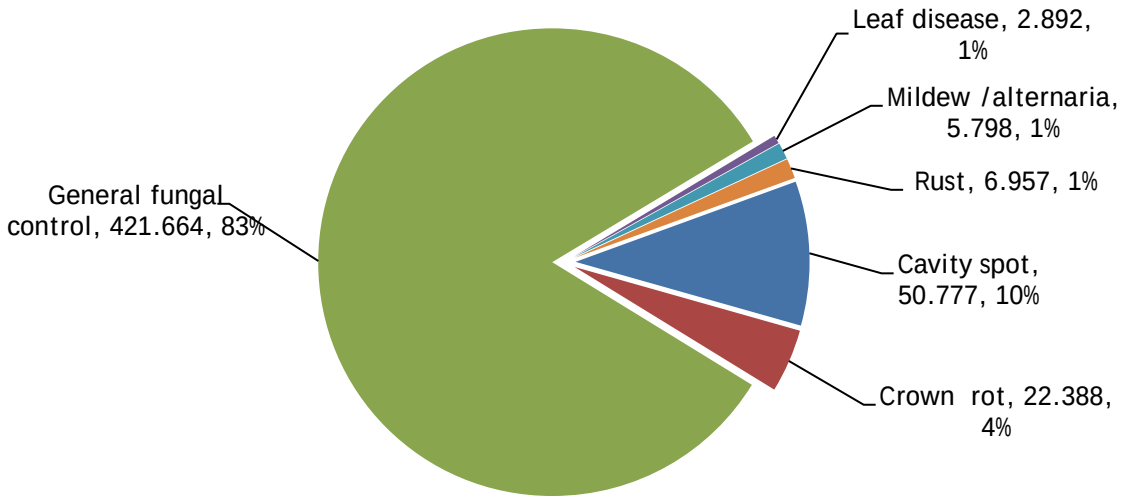


Figure 236: Parsnip: reasons for fungicide use (spha).



Herbicides & desiccants – parsnip

Basic area treated: 166.28 hectares
Area treated: 726.45 spray hectares
Weight of active substances applied: 658.10kg
99.9% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Linuron	244.153	165.116	97.361	33.61%
Pendimethalin	149.731	149.731	193.543	20.61%
Prosulfocarb	124.03	117.541	210.038	17.07%
Metamitron	52.933	52.933	74.106	7.29%
Glyphosate	51.215	51.215	51.465	7.05%

Figure 237: Herbicide & desiccant active substance usage on parsnip crops in Northern Ireland (spha), 2011.

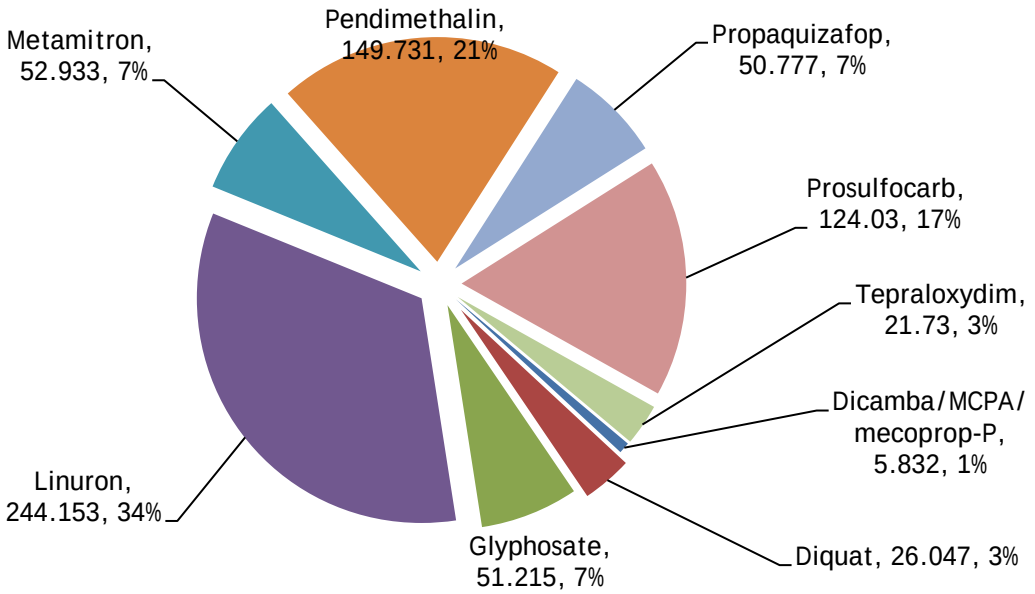


Figure 238: Weight of herbicide & desiccant active substances applied to parsnip crops in Northern Ireland (kg), 2011.

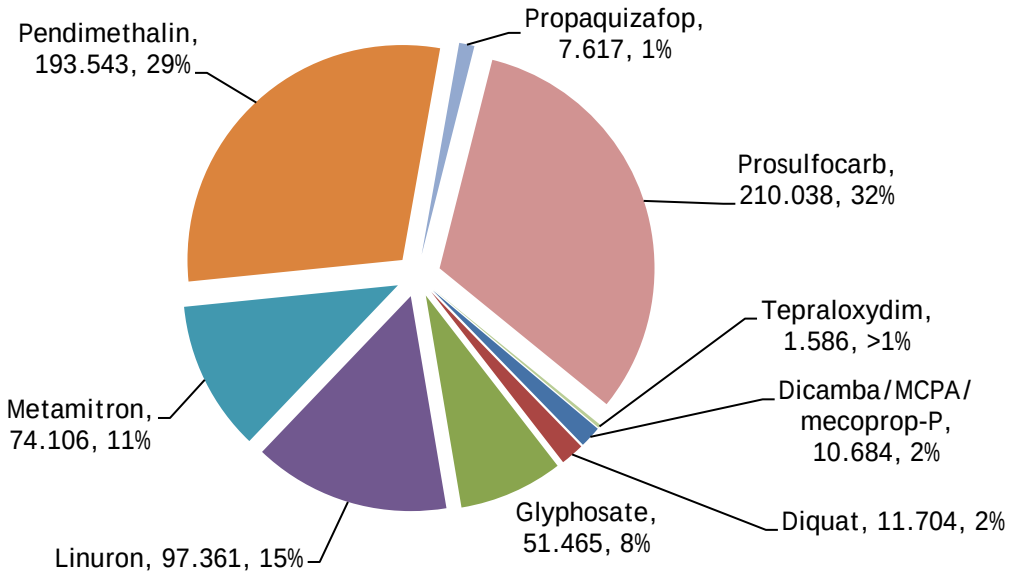
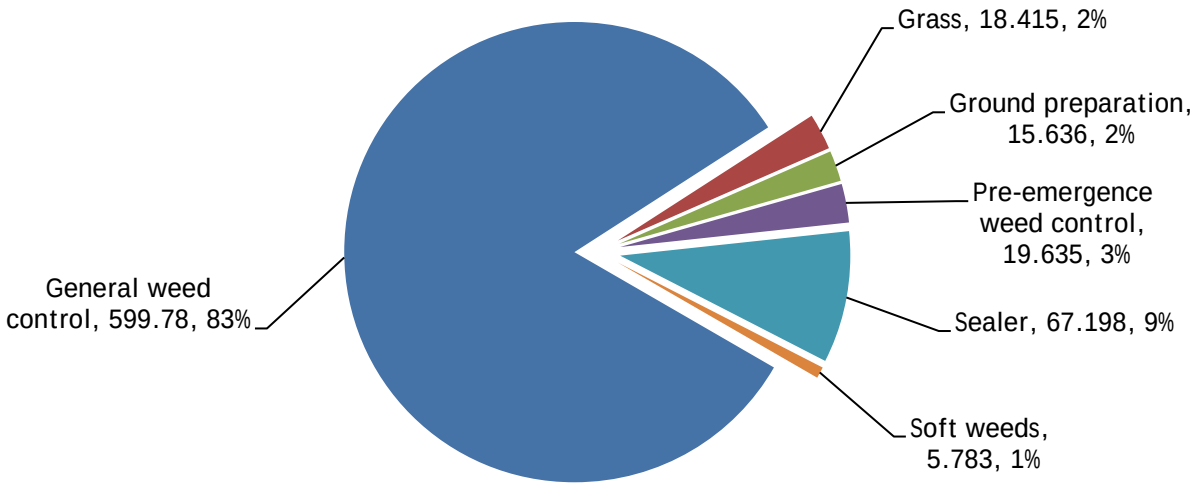


Figure 239: Parsnip: reasons for herbicide & desiccant use (spha).



Insecticides – parsnip

Basic area treated: 165.03 hectares
Area treated: 627 spray hectares
Weight of active substances applied: 51.41kg
99.2% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	564.511	163.869	6.418	90.03%
Oxamyl	43.486	43.486	43.636	6.94%
Deltamethrin	9.725	9.725	0.061	1.55%
Pirimicarb	9.276	6.957	1.299	1.48%

Figure 240: Insecticide active substance usage on parsnip crops in Northern Ireland (spha), 2011.

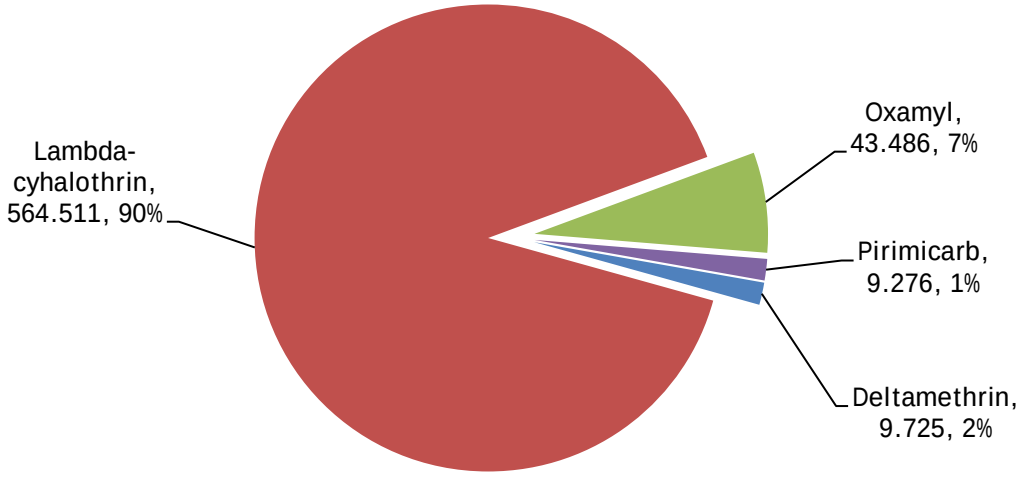


Figure 241: Weight of insecticide active substances applied to parsnip crops in Northern Ireland (kg), 2011.

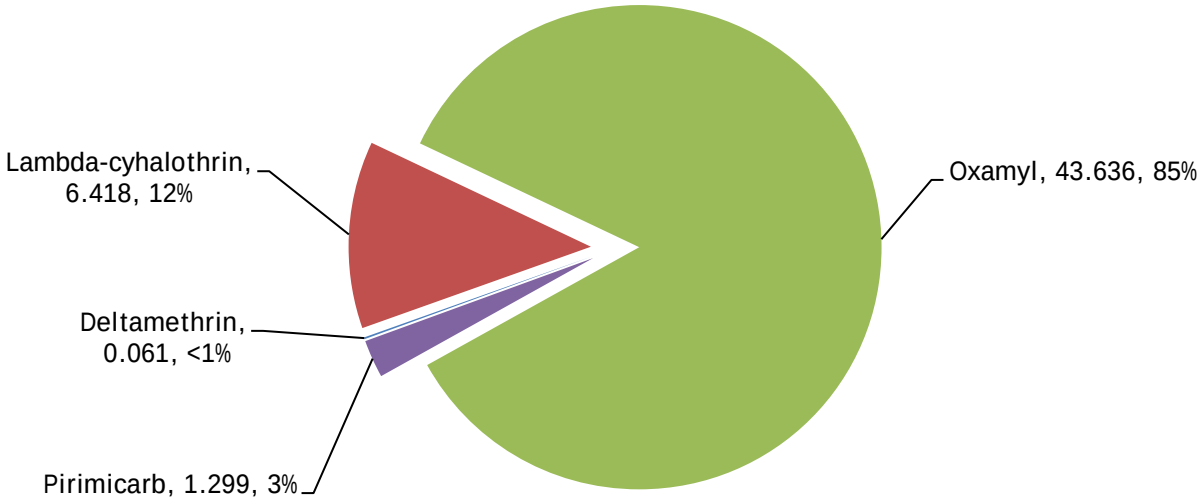
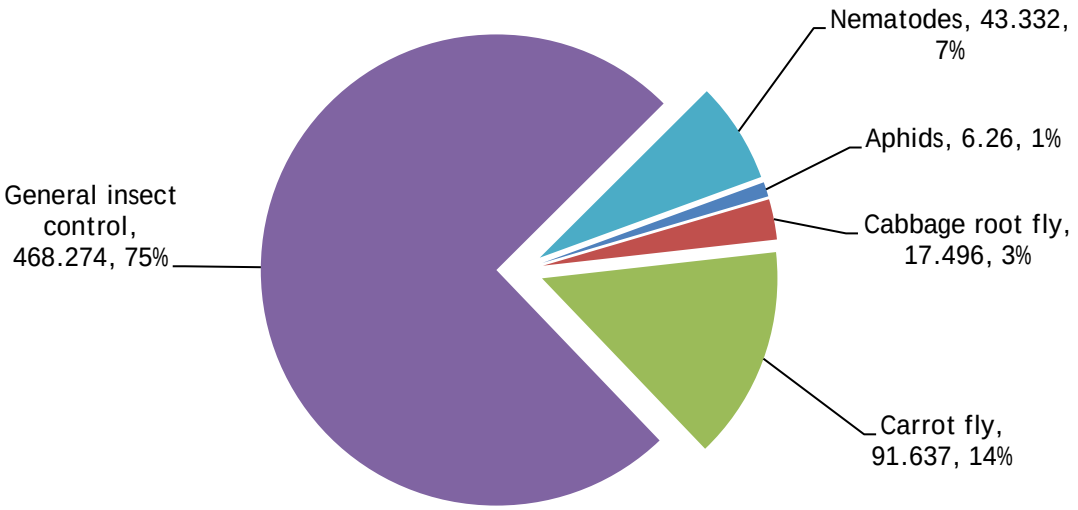


Figure 242: Parsnip: reasons for insecticide use (spha).



Molluscicides – parsnip

Basic area treated: 0.062 hectares
Area treated: 0.062 spray hectares
0.04% of the area grown treated with molluscicides
All applications were for slug control
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Methiocarb	0.062	0.062	0.007	

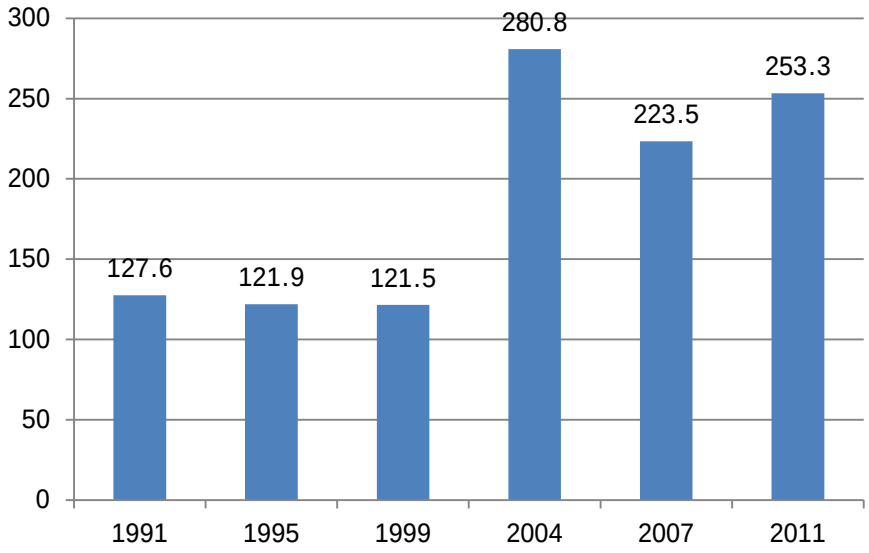
Growth regulators – parsnip

Basic area treated: 0.062 hectares
Area treated: 0.062 spray hectares
0.04% of the area grown treated with growth regulators
All applications were for growth regulation
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Maleic hydrazide	15.172	15.172	88.87	

Turnip & swede crops:

Figure 243: Comparison of the area of turnip & swede crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on turnip & swede crops:

253.35 hectares of turnip & swede crops grown in Northern Ireland

1,121.14 treated hectares

856.33kg applied

89.93% of crops received at least one treatment

Turnip & swede crops received on average 1.0 fungicide, 2.2 herbicide, 3.1 insecticide, 1.0 molluscicide applications.

Figure 261: Regional distribution of turnip & swede crops grown in Northern Ireland (ha), 2011.

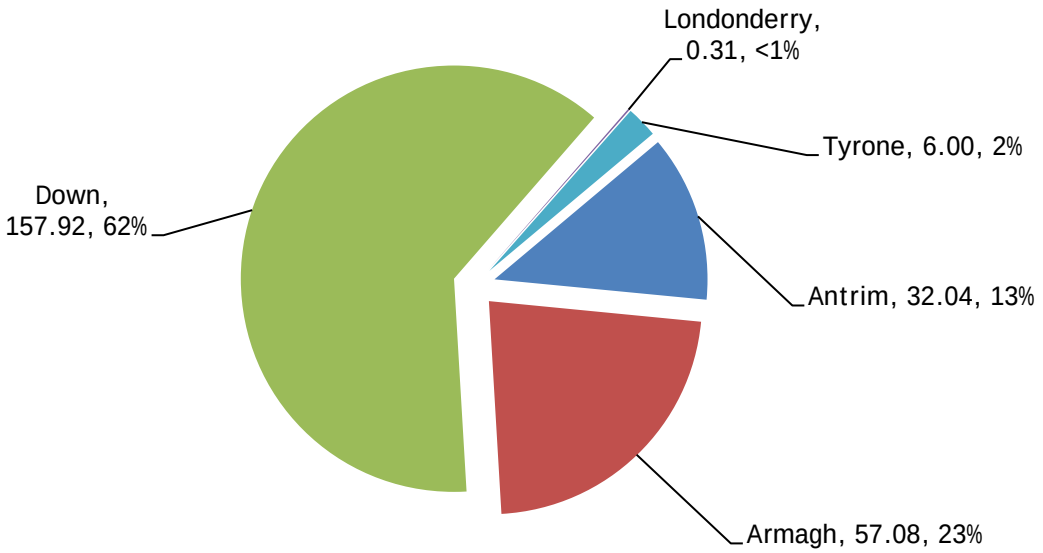


Figure 262: Pesticide usage on turnip & swede crops in Northern Ireland (spha), 2011.

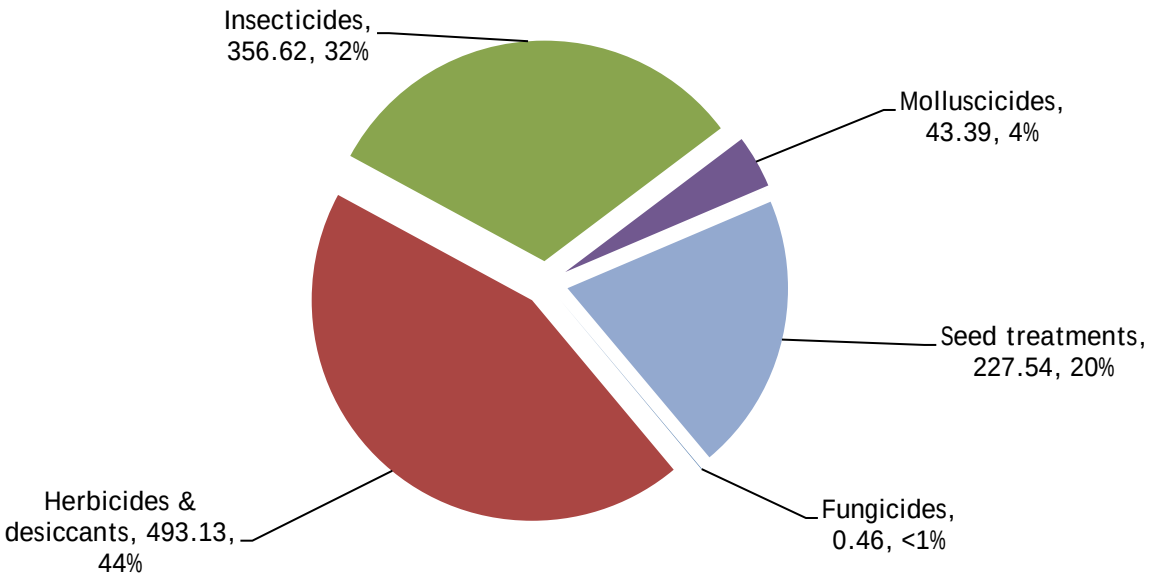


Figure 263: Weight of pesticides applied to turnip & swede crops in Northern Ireland (kg), 2011.

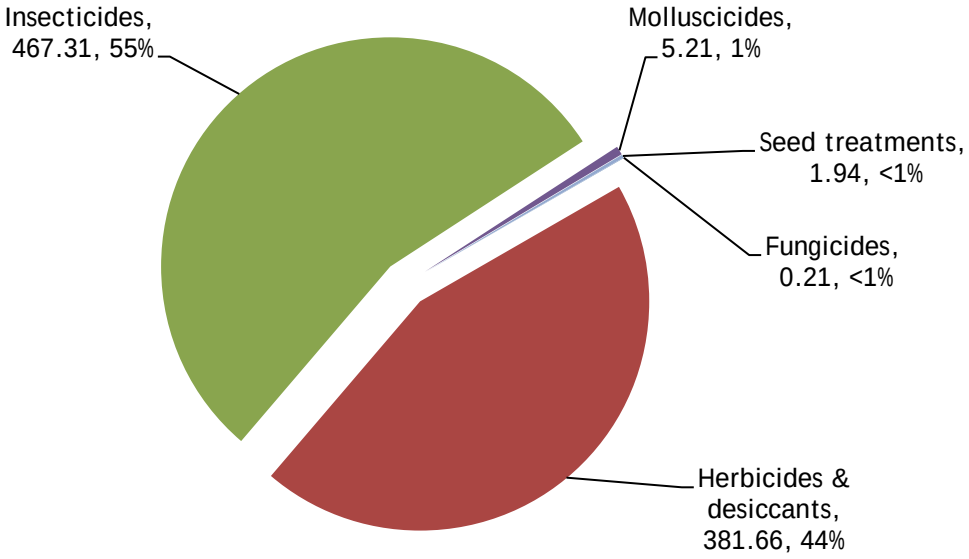
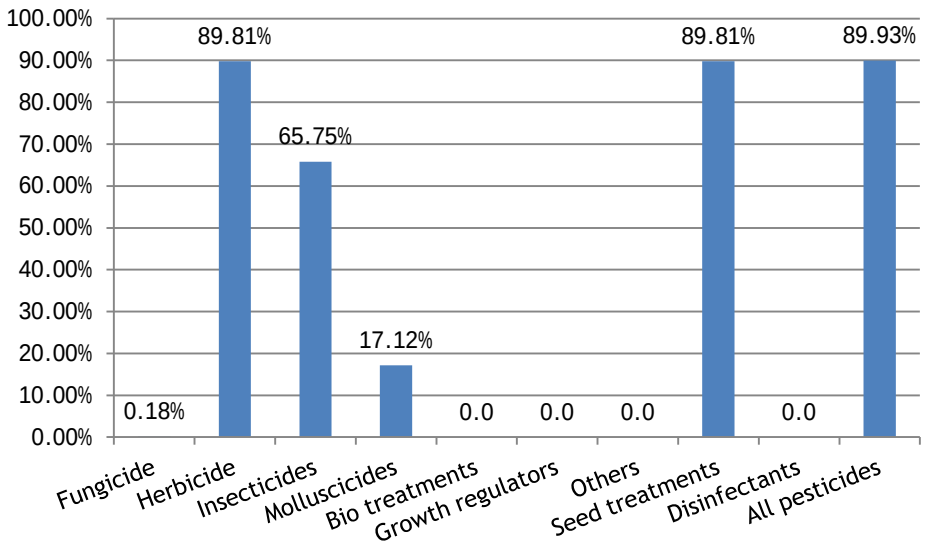


Figure 264: Proportional area of turnip & swede crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – turnip & swede

Basic area treated: 0.46 hectares
Area treated: 0.46 spray hectares
Weight of active substances applied: 0.21kg
0.18% of the area grown treated with fungicides
All applications were for downy mildew
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Chlorothalonil/metalaxyl-M	0.154	0.154	0.166	0.154

Herbicides & desiccants – turnip & swede

Basic area treated: 227.54 hectares
Area treated: 493.13 spray hectares
Weight of active substances applied: 381.66kg
89.81% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	217.173	216.865	149.555	44.04%
Glyphosate	150.196	150.196	179.015	30.46%
Clomazone	83.937	83.937	5.418	17.02%
Linuron	18.465	10.678	8.743	3.74%
Prosulfocarb	15.573	7.787	34.261	3.16%

Figure 265: Herbicide & desiccant active substance usage on turnip & swede crops in Northern Ireland (spha), 2011.

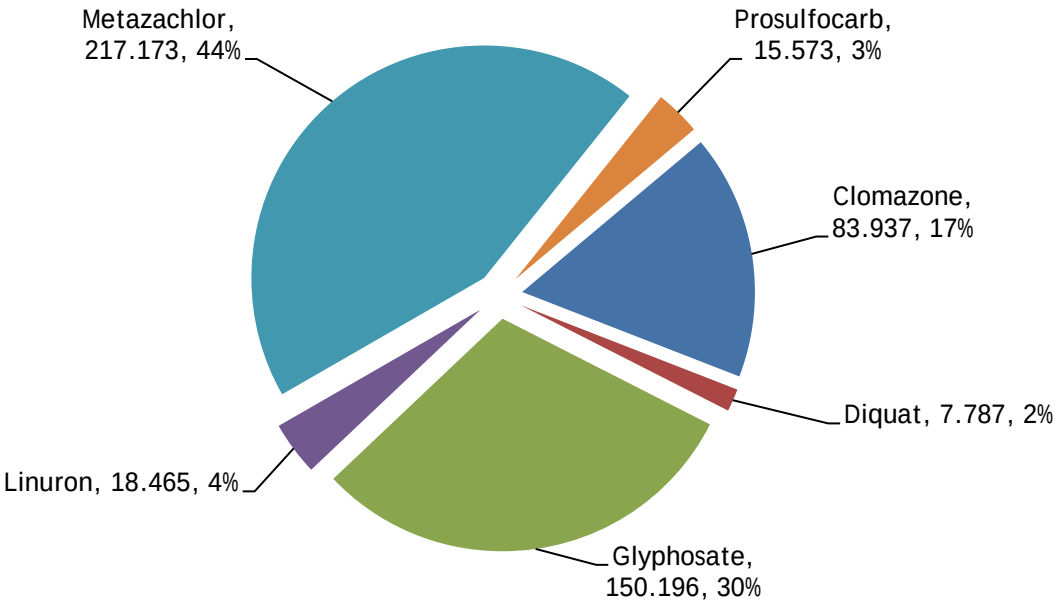


Figure 266: Weight of herbicide & desiccant active substances applied to turnip & swede crops in Northern Ireland (kg), 2011.

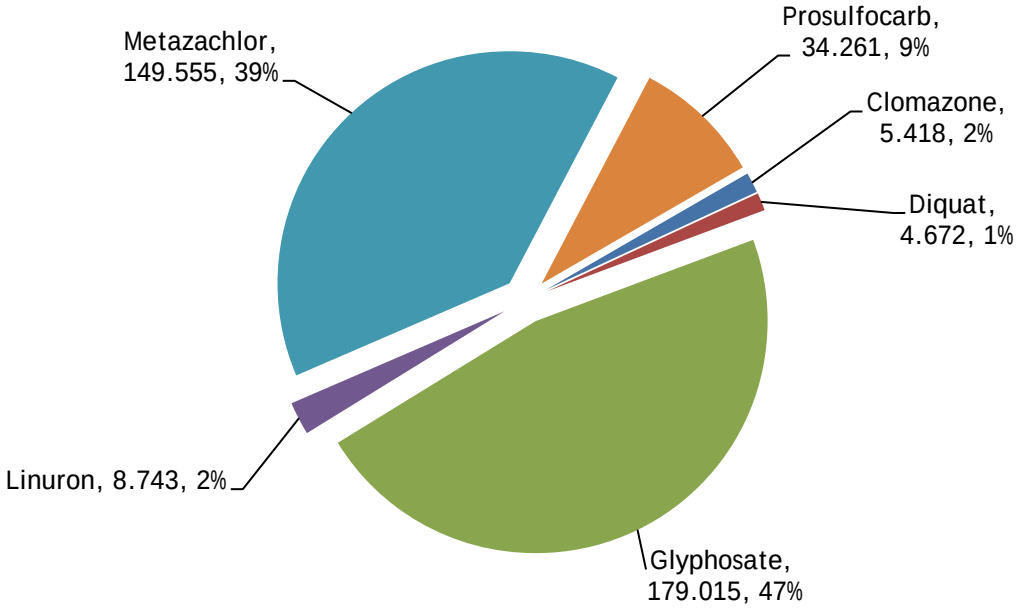
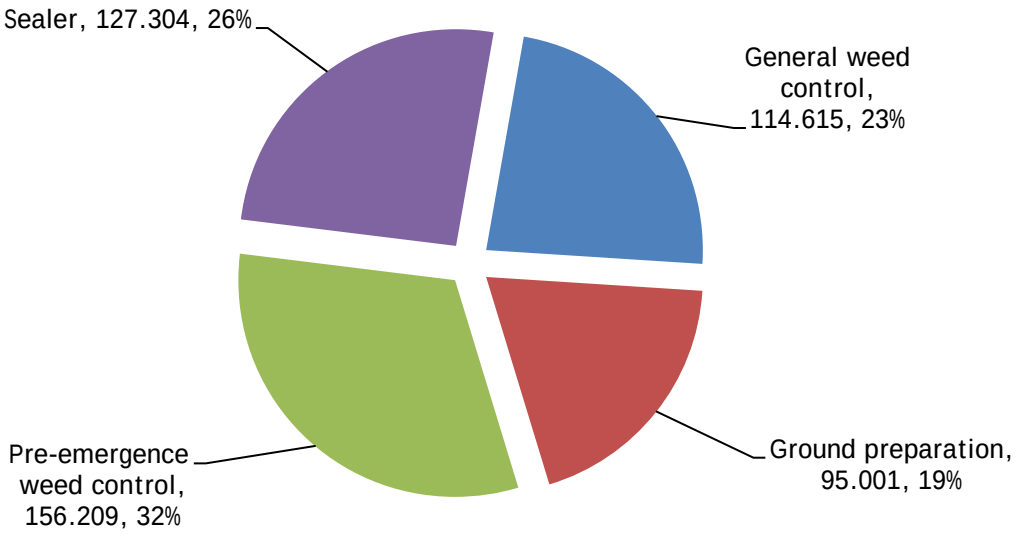


Figure 267: Turnip & swede: reasons for herbicide & desiccant use (spha).



Insecticides – turnip & swede

Basic area treated: 166.59 hectares
Area treated: 356.62 spray hectares
Weight of active substances applied: 467.31kg
89.93% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Garlic Extract	272.888	106.429	455.521	76.52%
Pirimicarb	52.063	52.063	10.933	14.60%
Lambda-cyhalothrin	25.531	9.958	0.205	7.16%
Deltamethrin	5.832	5.832	0.044	1.64%
Oxamyl	0.308	0.308	0.609	0.09%

Figure 268: Insecticide active substance usage on turnip & swede crops in Northern Ireland (spha), 2011.

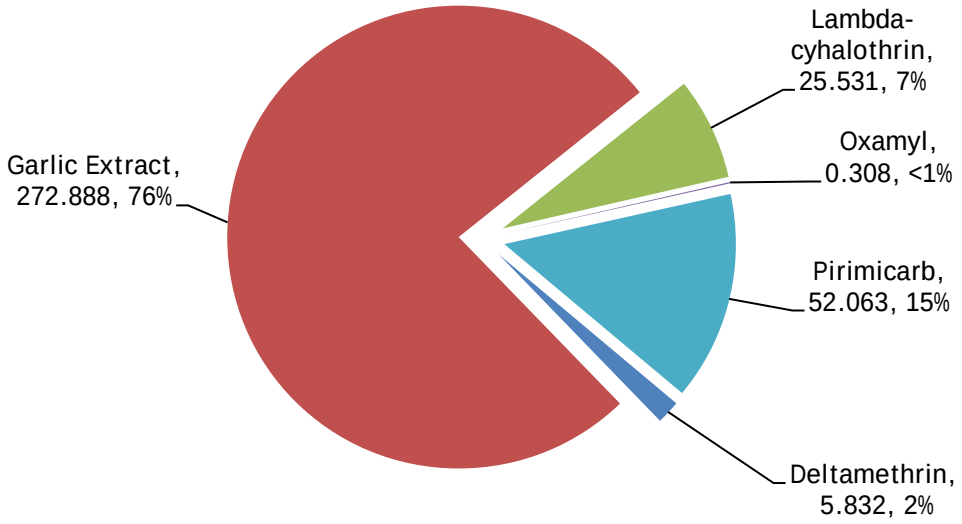


Figure 269: Weight of insecticide active substances applied to turnip & swede crops in Northern Ireland (kg), 2011.

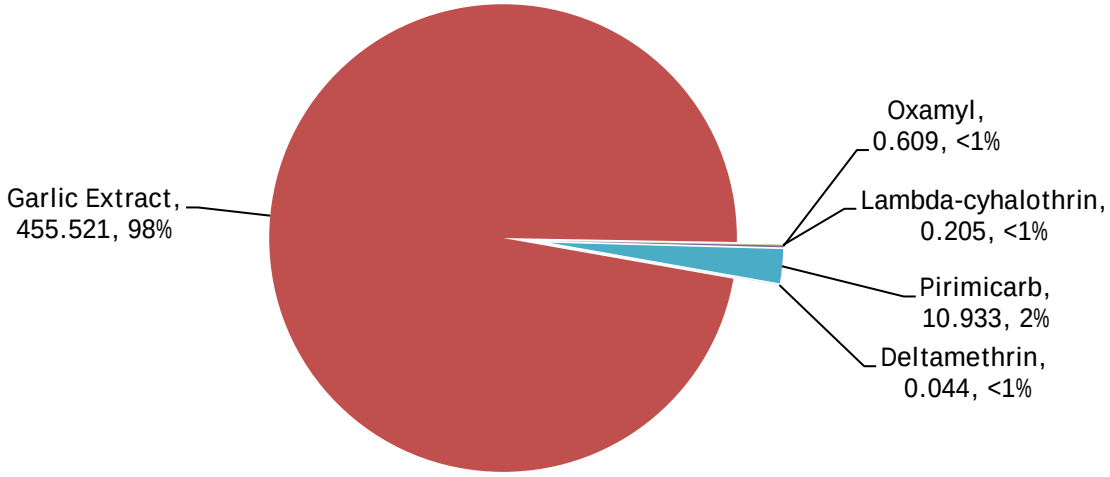
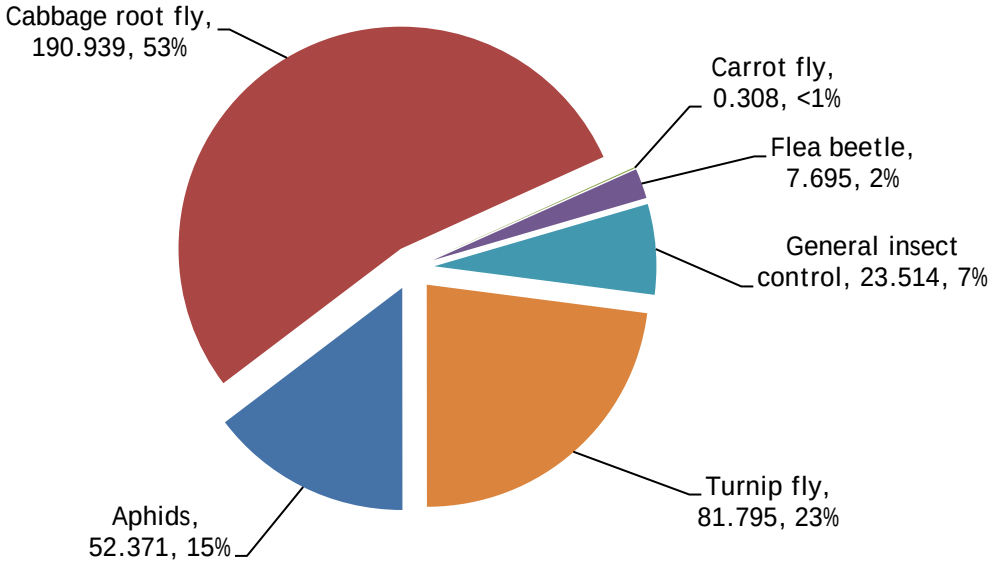


Figure 270: Turnip & swede: reasons for insecticide use (spha).



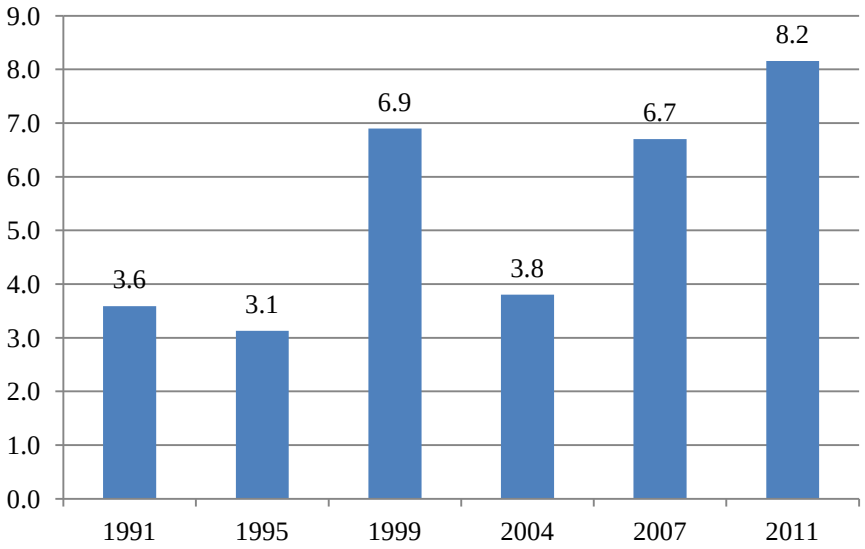
Molluscicides – turnip & swede

Basic area treated: 43.385 hectares
Area treated: 43.385 spray hectares
Weight of active substances applied: 5.206Kg
17.12% of the area grown treated with molluscicides
All applications were for slug control
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Methiocarb	43.385	43.385	5.206	

Beetroot crops:

Figure 271: Comparison of the area of beetroot crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on beetroot crops:

8.16 hectares of beetroot crops grown in Northern Ireland

35.60 treated hectares

30.76kg applied

100% of crops received at least one treatment

Beetroot crops received on average 1.0 fungicide and 2.4 herbicide applications.

Figure 272: Regional distribution of beetroot crops grown in Northern Ireland (ha), 2011.

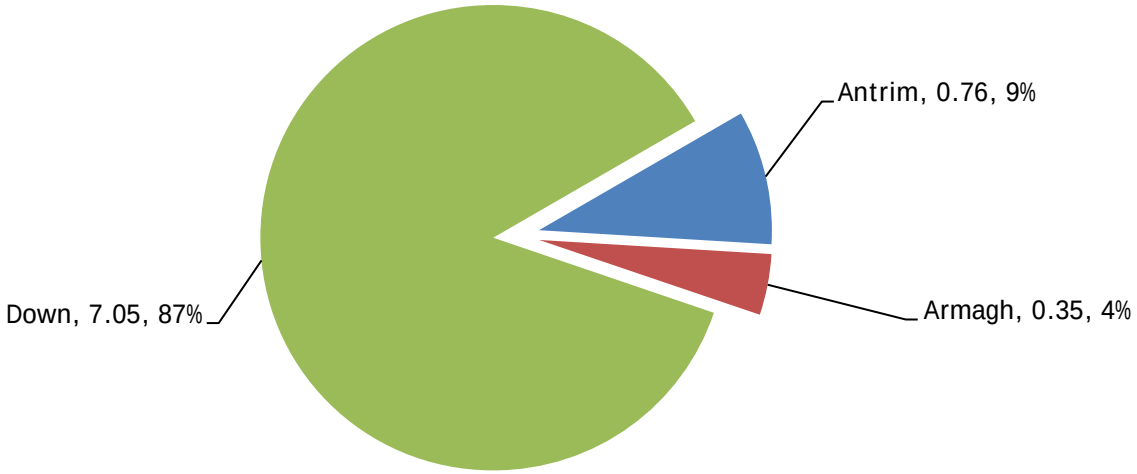


Figure 273: Pesticide usage on winter beetroot crops in Northern Ireland (spha), 2011.

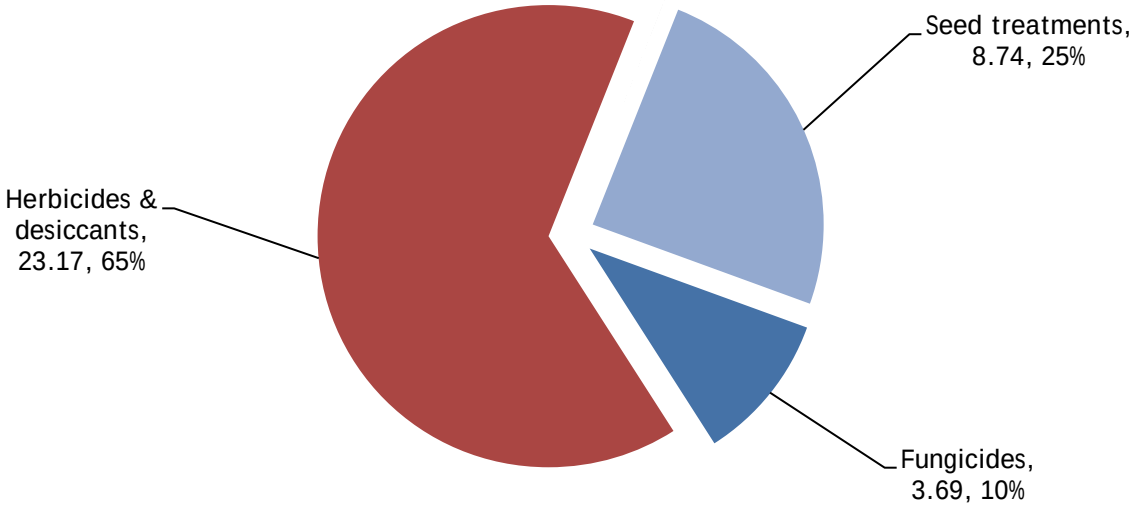


Figure 274: Weight of pesticides applied to beetroot crops in Northern Ireland (kg), 2011.

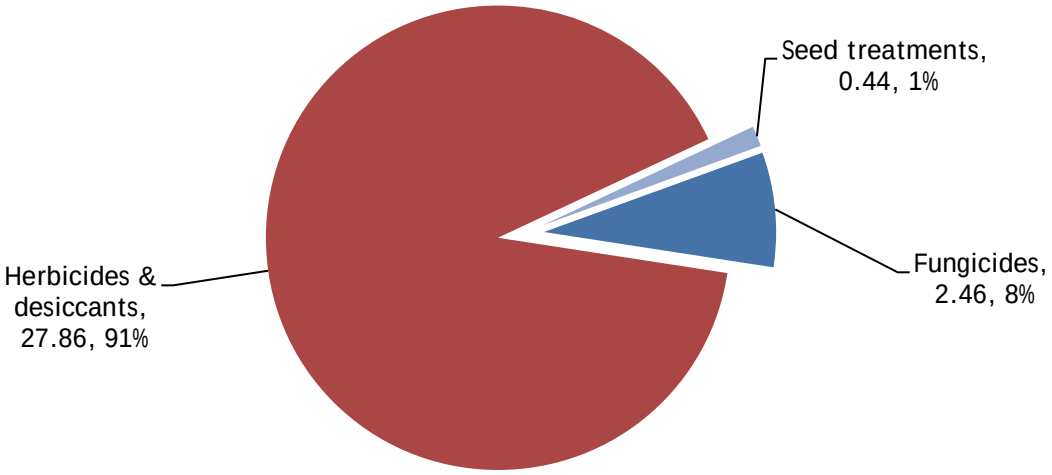
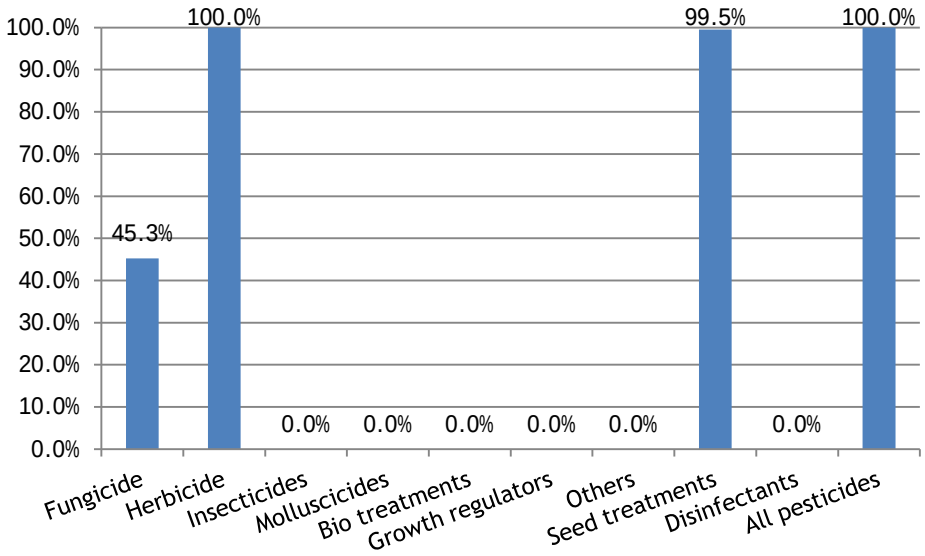


Figure 275: Proportional area of beetroot crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – beetroot

Basic area treated: 3.69 hectares
Area treated: 3.69 spray hectares
Weight of active substances applied: 2.46kg
45.3% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Fenpropimorph	2.319	2.319	1.739	62.78%
Difenoconazole	0.759	0.759	0.057	20.55%
Chlorothalonil/metalaxyl-M	0.616	0.616	0.662	16.68%

Figure 276: Fungicide active substance usage on beetroot crops in Northern Ireland (spha), 2011.

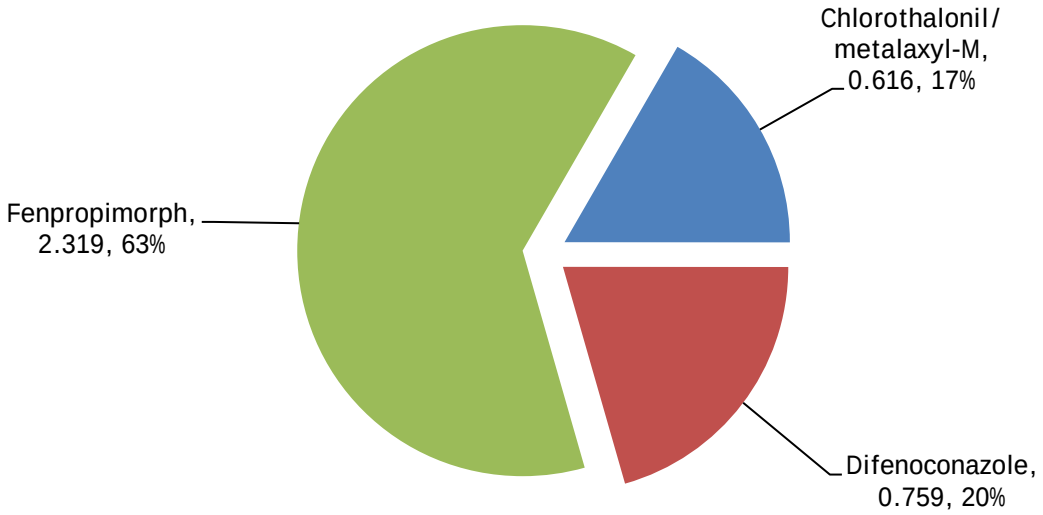


Figure 277: Weight of fungicide active substances applied to beetroot crops in Northern Ireland (kg), 2011.

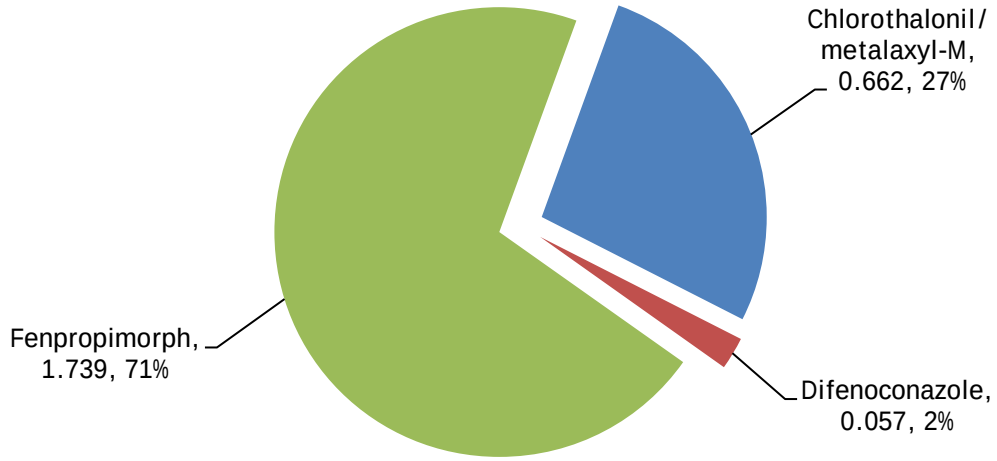
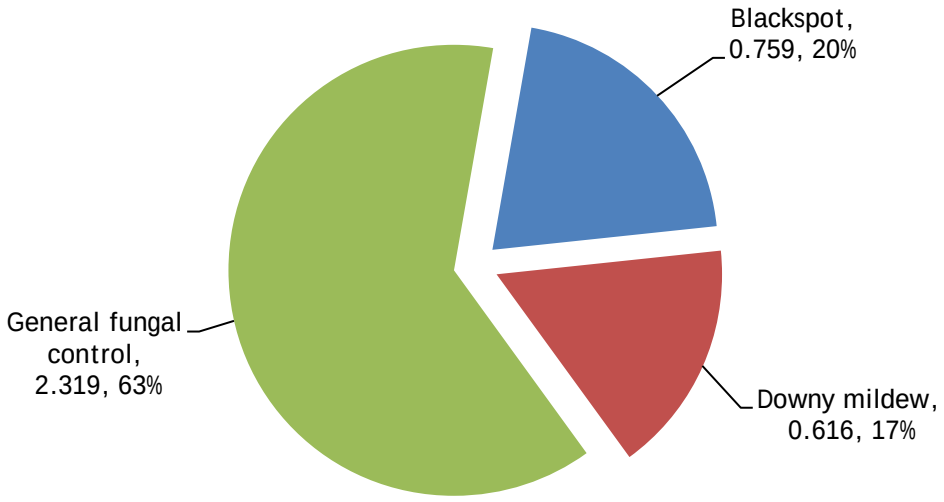


Figure 278: Beetroot crops: reasons for fungicide use (spha).



Herbicides & desiccants – beetroot

Basic area treated: 8.16 hectares
Area treated: 23.17 spray hectares
Weight of active substances applied: 27.86kg
100% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lenacil	6.159	6.159	11	26.58%
Ethofumesate	3.848	3.54	3.45	16.61%
Phenmedipham	3.848	3.54	1.354	16.61%
Metamitron	3.06	3.06	9.726	13.21%
Triflusulfuron-methyl	2.319	2.319	0.035	10.01%

Figure 279: Herbicide & desiccant active substance usage on beetroot crops in Northern Ireland (spha), 2011.

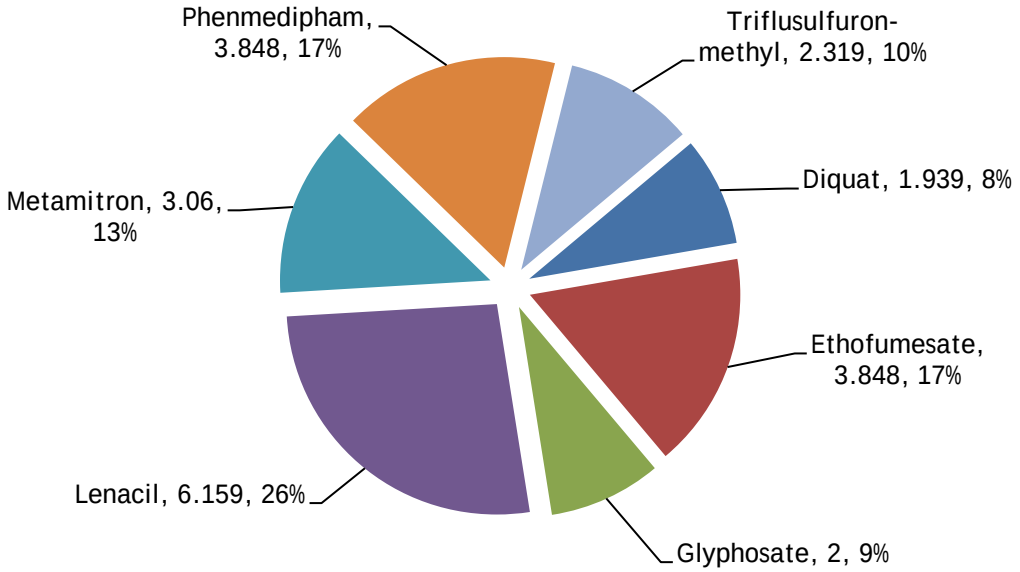


Figure 280: Weight of herbicide & desiccant active substances applied to beetroot crops in Northern Ireland (kg), 2011.

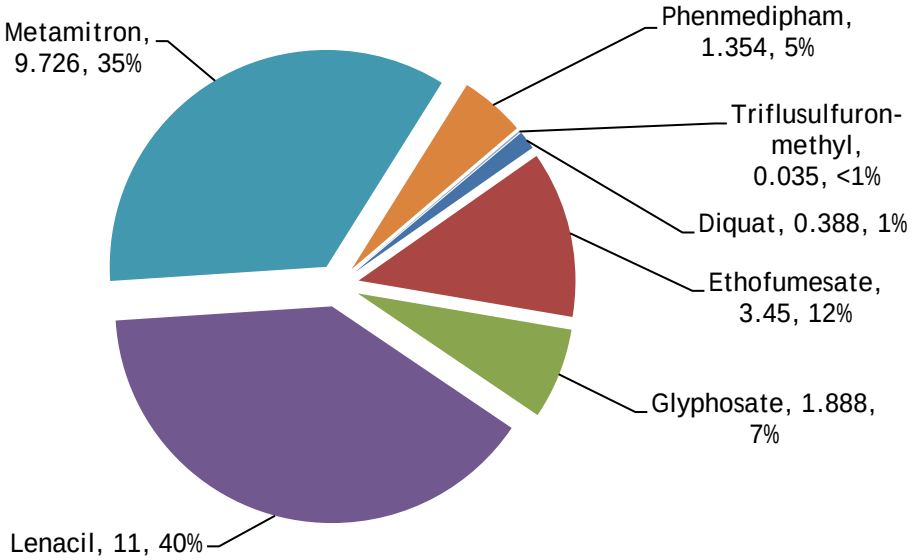
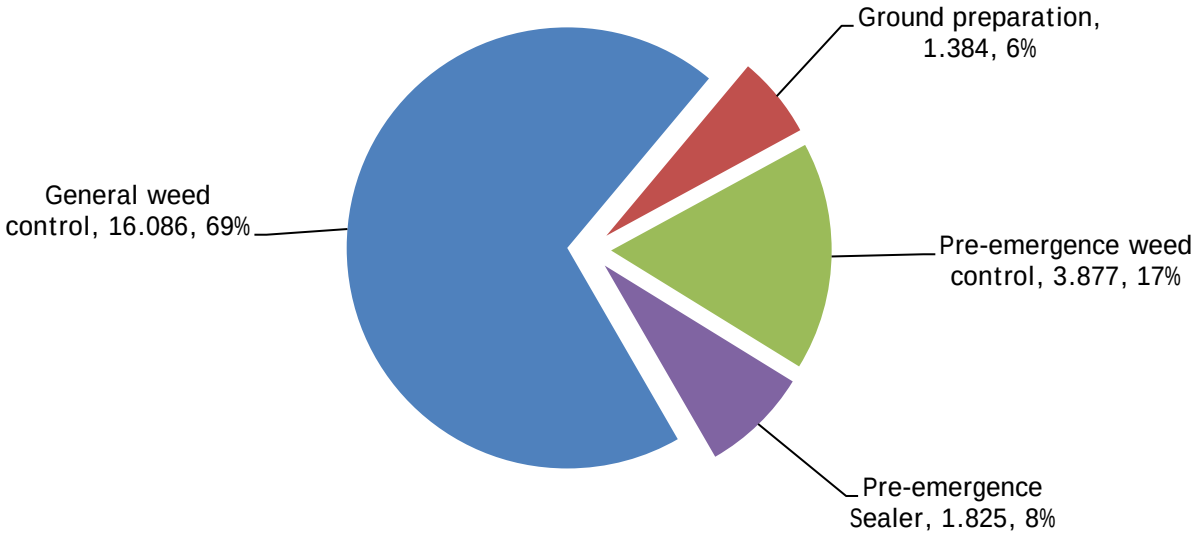
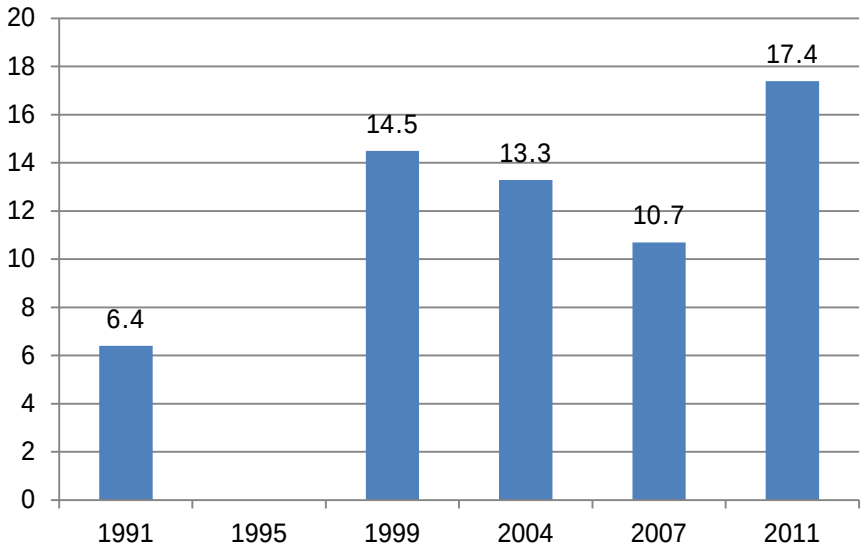


Figure 281: Beetroot: reasons for herbicide & desiccant use (spha).



Bulb onion crops:

Figure 282: Comparison of the area of bulb onion crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on bulb onion crops:

17.39 hectares of bulb onion crops grown in Northern Ireland all of which grown in County Londonderry

226.11 treated hectares

168.43kg applied

100% of crops received at least one treatment

Bulb onion crops received on average 6.0 fungicide and 7.0 herbicide applications.

Figure 283: Pesticide usage on bulb onion crops in Northern Ireland (spha), 2011.

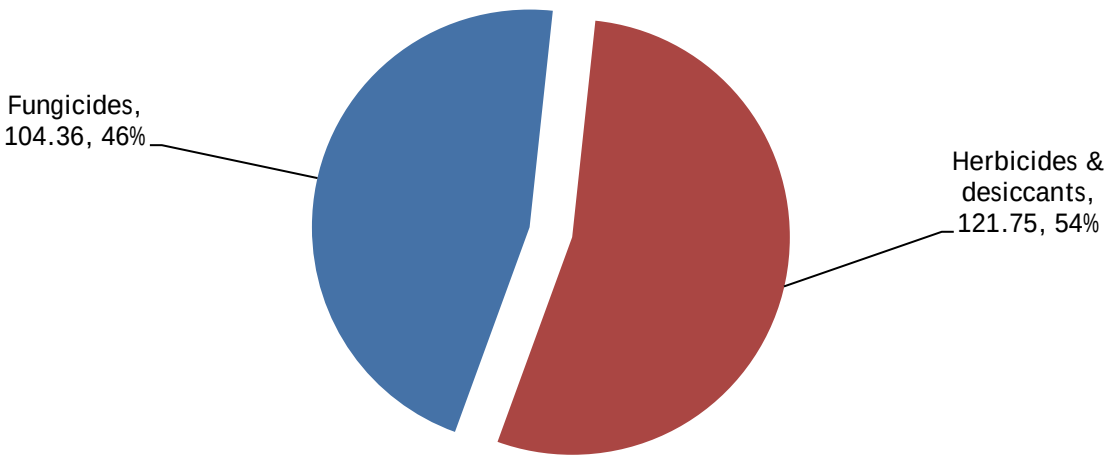


Figure 284: Weight of pesticides applied to bulb onion crops in Northern Ireland (kg), 2011.

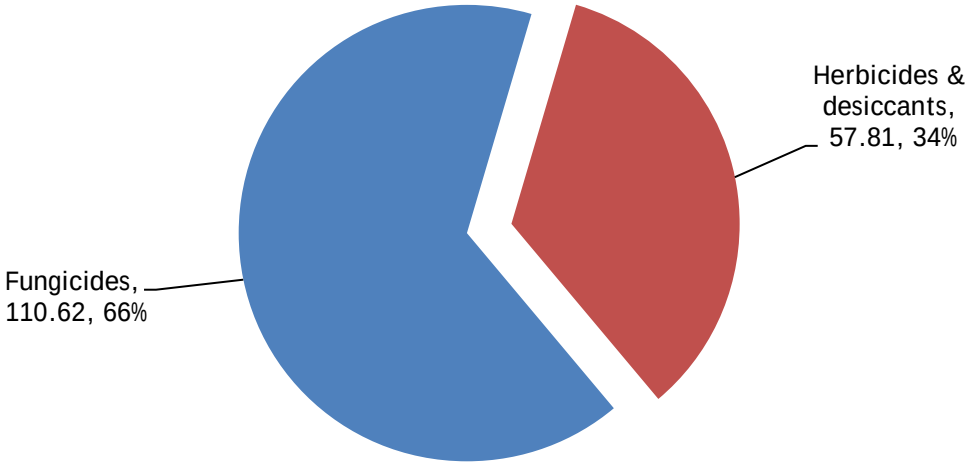
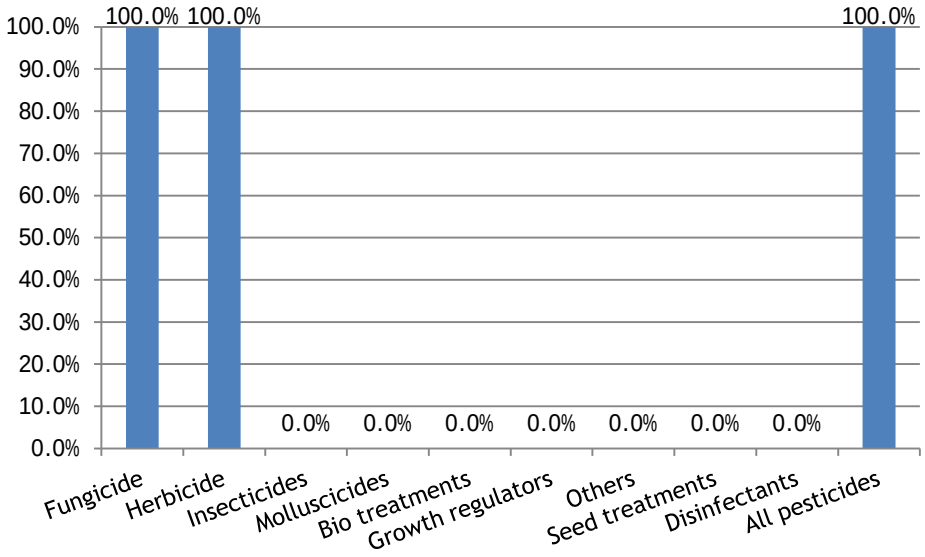


Figure 285: Proportional area of bulb onion crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – bulb onion

Basic area treated: 17.39 hectares
Area treated: 104.36 spray hectares
Weight of active substances applied: 110.62kg
100% of the area grown treated with fungicides
All applications were for general fungal control
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin	17.393	17.393	3.479	16.67%
Benthiavalicarb-isopropyl/mancozeb	17.393	17.393	18.719	16.67%
Chlorothalonil	17.393	17.393	17.393	16.67%
Copper oxychloride	17.393	17.393	17.393	16.67%
Dimethomorph/mancozeb	17.393	17.393	25.811	16.67%
Mancozeb	17.393	17.393	3.479	16.67%

Figure 286: Fungicide active substance usage on bulb onion crops in Northern Ireland (spha), 2011.

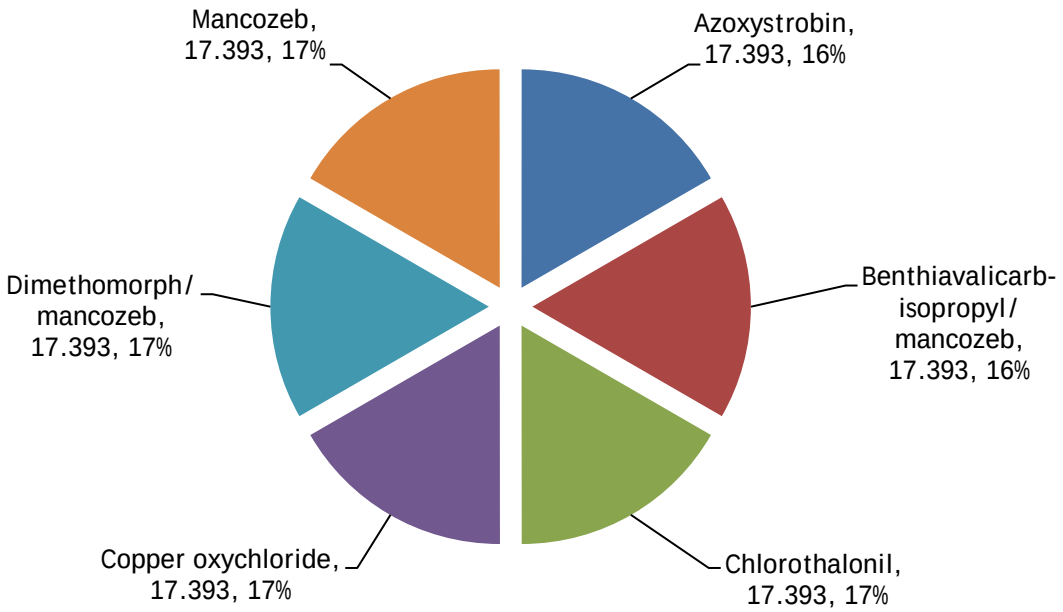
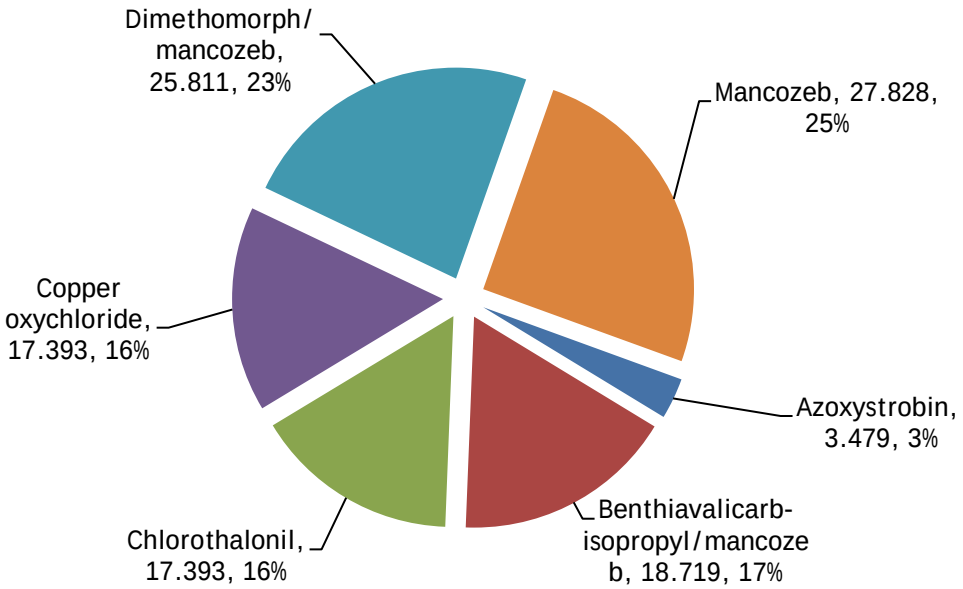


Figure 287: Weight of fungicide active substances applied to bulb onion crops in Northern Ireland (kg), 2011.



Herbicides & desiccants – bulb onion

Basic area treated: 17.39 hectares
Area treated: 121.75 spray hectares
Weight of active substances applied: 57.81kg
100% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Ioxynil	34.786	17.393	2.152	28.57%
Pendimethalin	34.786	17.393	20.871	28.57%
Chloridazon	17.393	17.393	5.653	14.29%
Prosulfocarb	17.393	17.393	27.828	14.29%
Tepraloxydim	17.393	17.393	1.304	14.29%

Figure 288: Herbicide & desiccant active substance usage on bulb onion crops in Northern Ireland (spha), 2011.

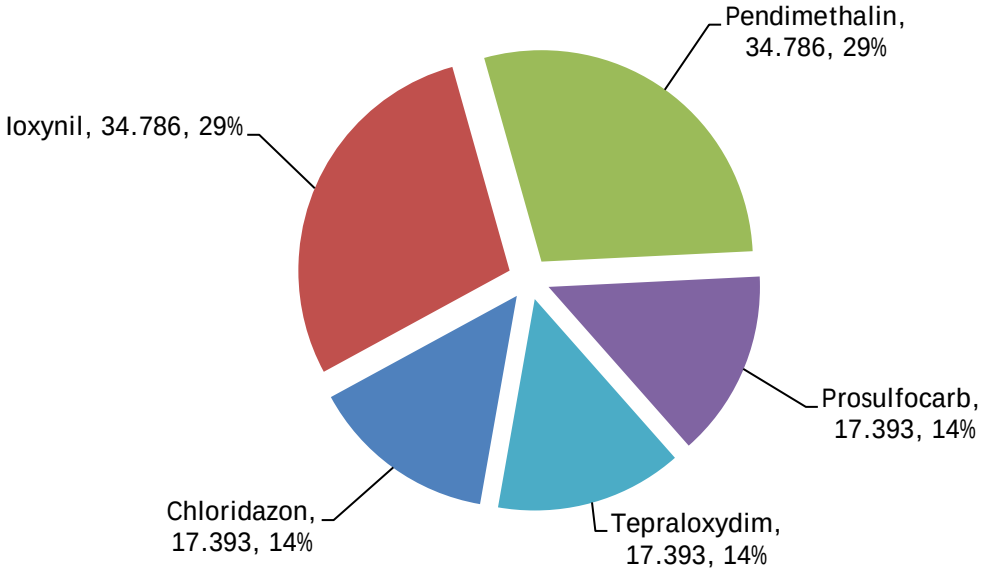


Figure 289: Weight of herbicide & desiccant active substances applied to bulb onion crops in Northern Ireland (kg), 2011.

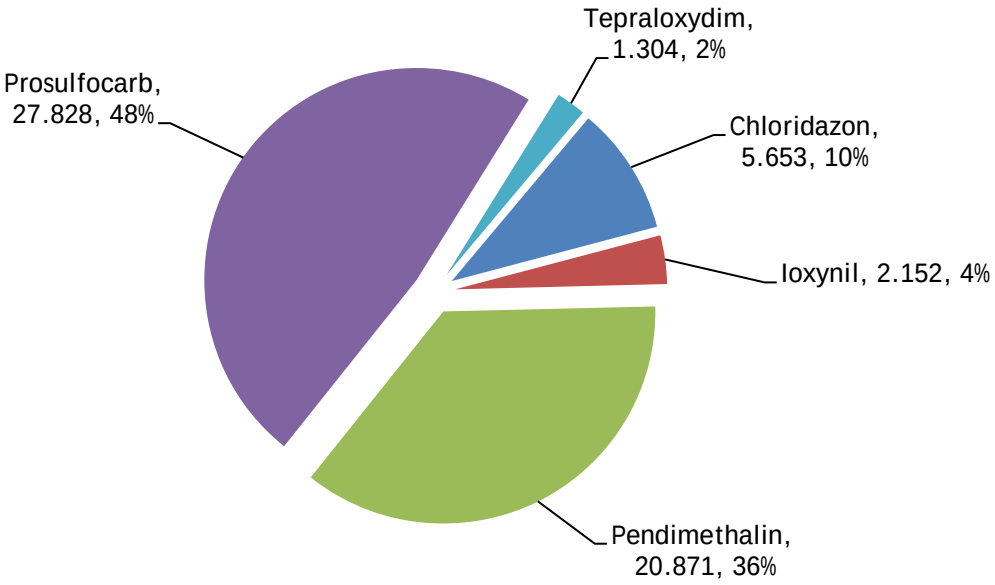
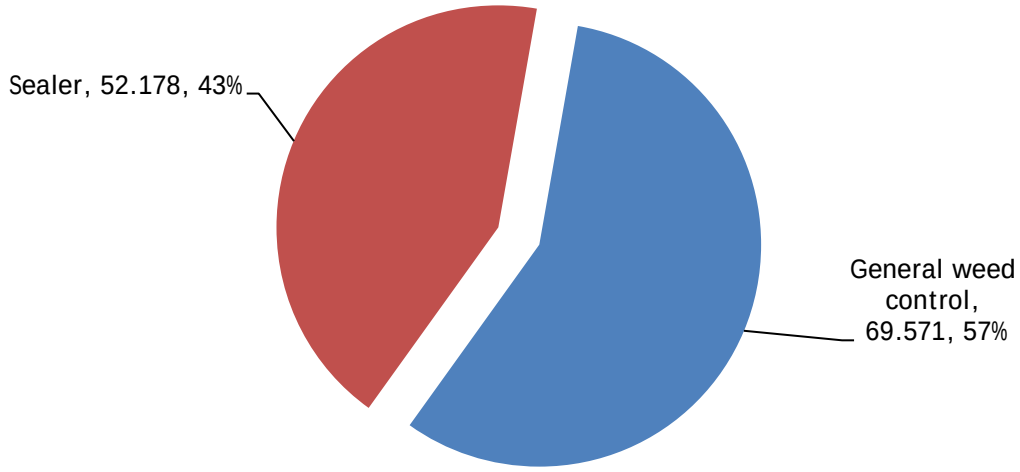
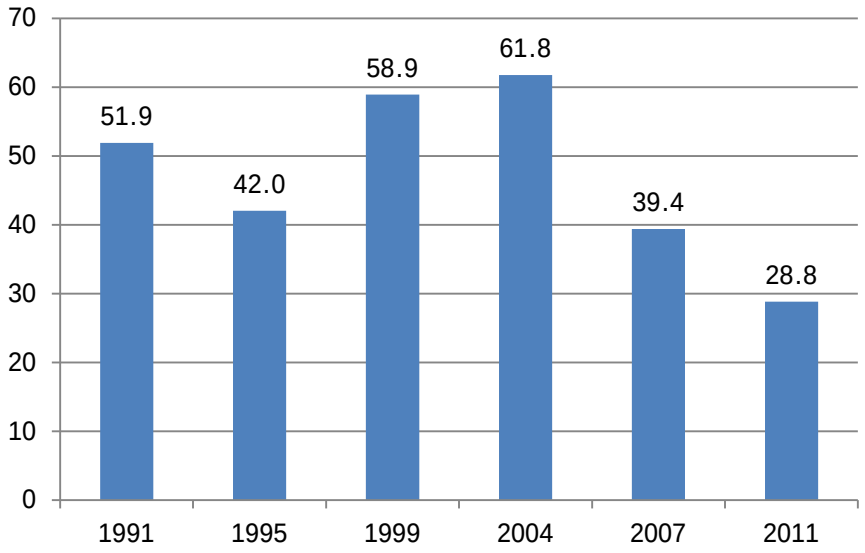


Figure 290: Bulb onion crops: reasons for herbicide & desiccant use (spha).



Scallion crops:

Figure 291: Comparison of the area of Scallion crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on summer scallion crops:

27.30 hectares of summer scallion crops grown in Northern Ireland

191.84 treated hectares

69.91kg applied

99.7% of crops received at least one treatment

Summer scallion received on average 2.9 fungicide and 3.4 herbicide applications.

Figure 292: Regional distribution of summer scallion crops grown in Northern Ireland (ha), 2011.

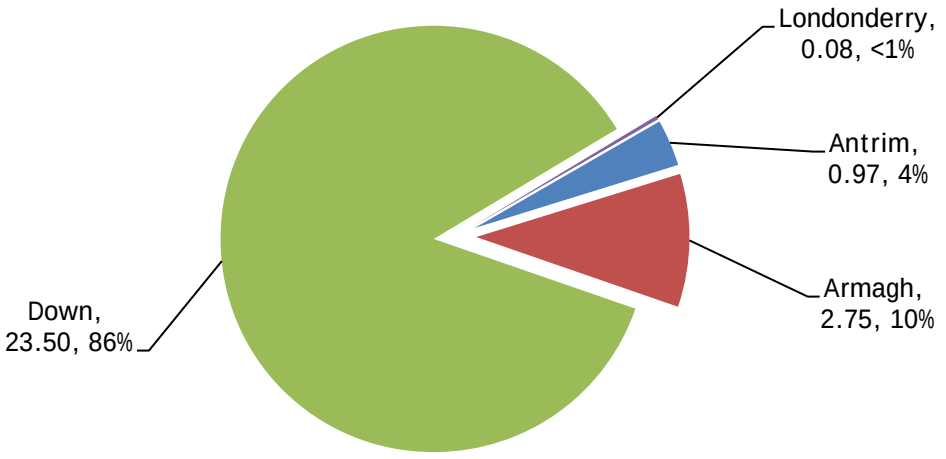


Figure 293: Pesticide usage on summer scallion crops in Northern Ireland (spha), 2011.

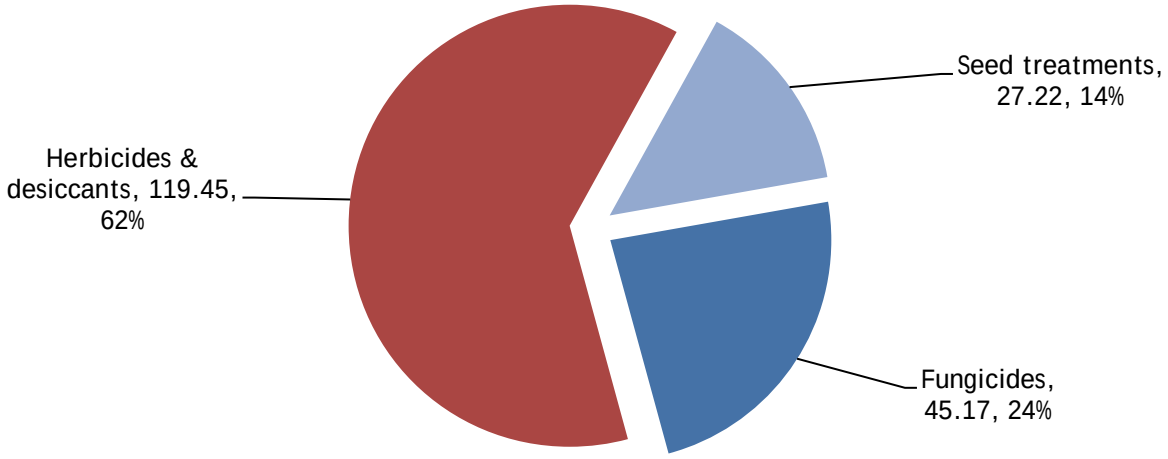
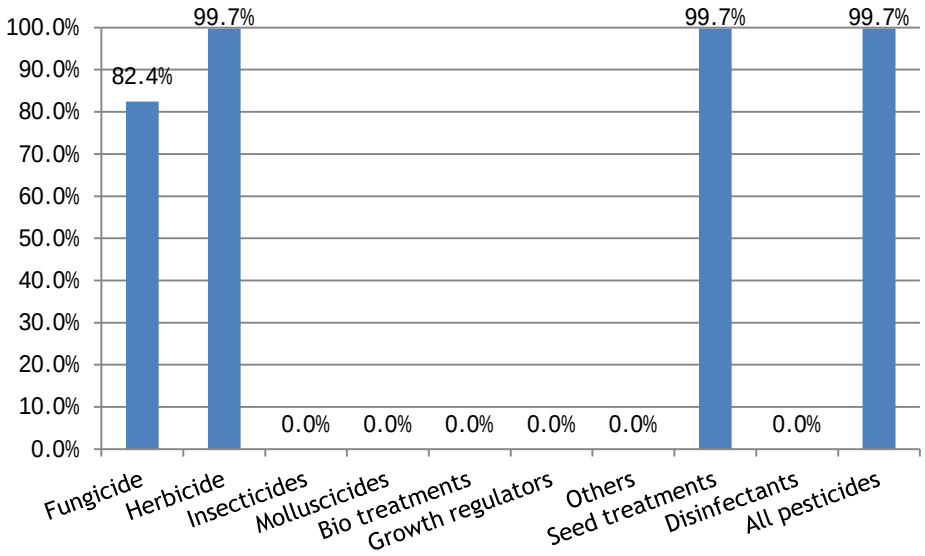


Figure 294: Weight of pesticides applied to summer scallion crops in Northern Ireland (kg), 2011.

Figure 295: Proportional area of summer scallion crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – summer scallion

Basic area treated: 22.49 hectares
Area treated: 45.17 spray hectares
Weight of active substances applied: 14.36kg
82.4% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Prothioconazole	32.137	16.069	6.17	71.15%
Azoxystrobin	4.47	4.008	1.117	9.90%
Chlorothalonil/metalaxyl-M	4.296	1.278	4.618	9.51%
Tebuconazole	2.418	2.418	0.605	5.35%
Chlorothalonil	1.848	0.462	1.848	4.09%

Figure 296: Fungicide active substance usage on summer scallion crops in Northern Ireland (spha), 2011.

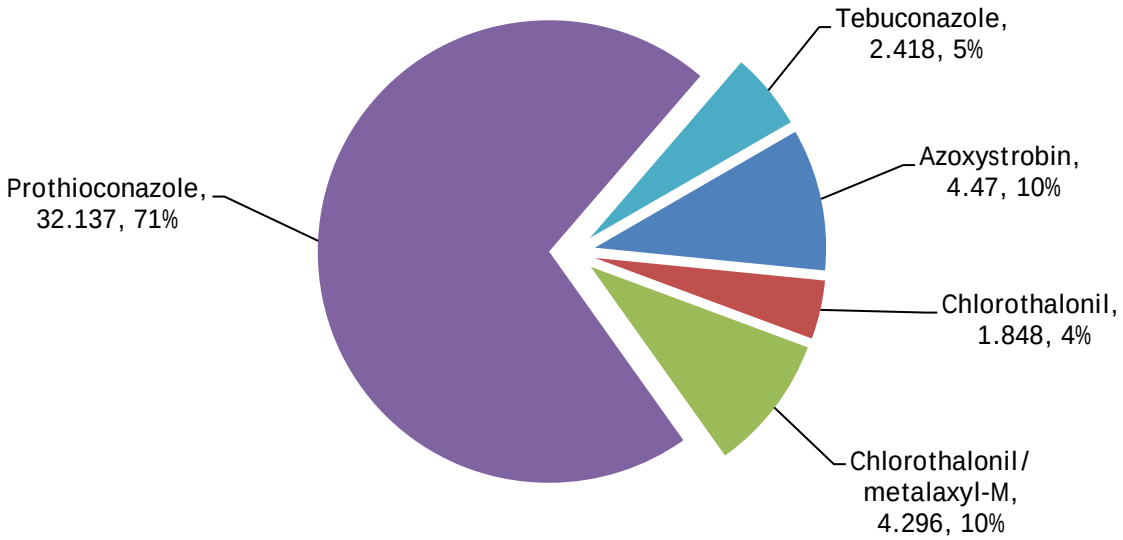


Figure 297: Weight of fungicide active substances applied to summer scallion crops in Northern Ireland (kg), 2011.

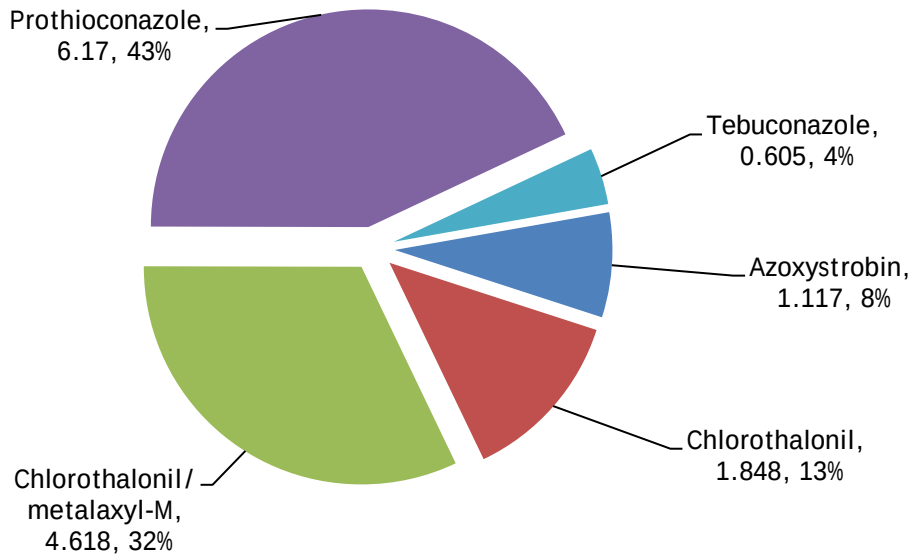
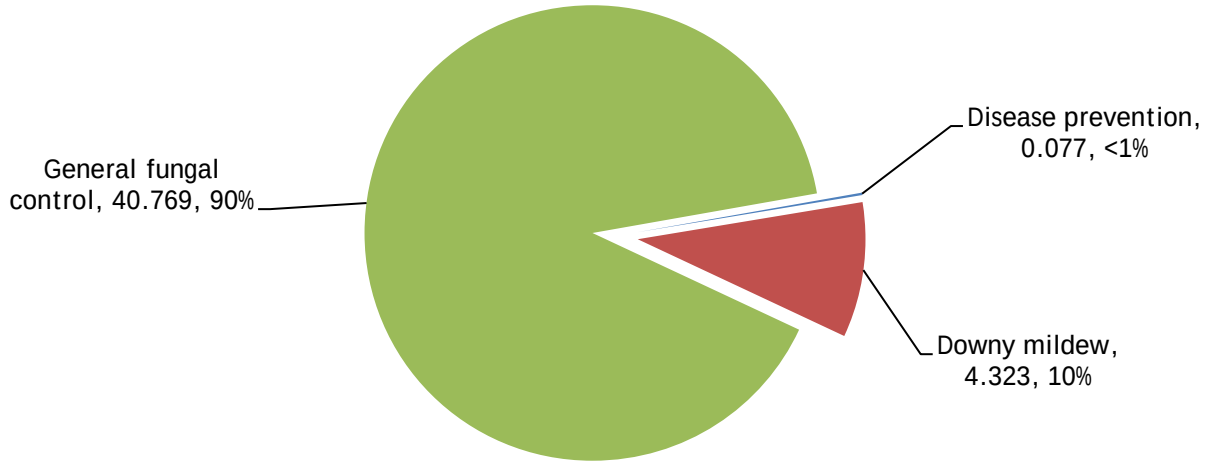


Figure 298: Summer scallion: reasons for fungicide use (spha).



Herbicides & desiccants – summer scallion

Basic area treated: 27.22 hectares
Area treated: 119.45 spray hectares
Weight of active substances applied: 54.81kg
99.7% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Ioxynil	63.597	21.759	3.695	53.24%
Pendimethalin	27.065	27.065	22.438	22.66%
Chloridazon	18.664	18.664	15.466	15.62%
Linuron	3.204	3.204	2.884	2.68%
Propachlor	2.459	2.459	7.72	2.06%

Figure 299: Herbicide & desiccant active substance usage on summer scallion crops in Northern Ireland (spha), 2011.

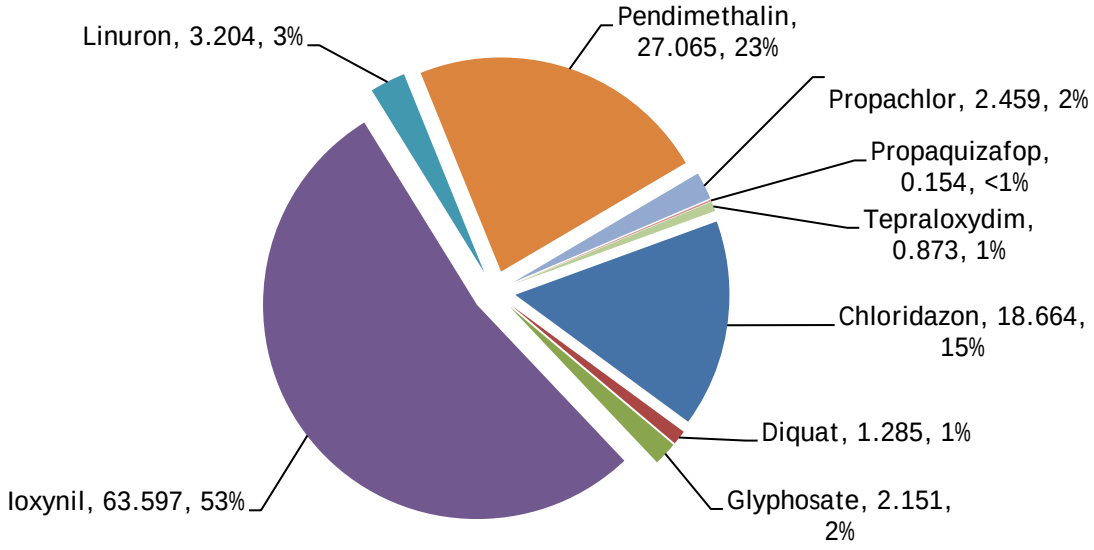


Figure 300: Weight of herbicide & desiccant active substances applied to summer scallion crops in Northern Ireland (kg), 2011.

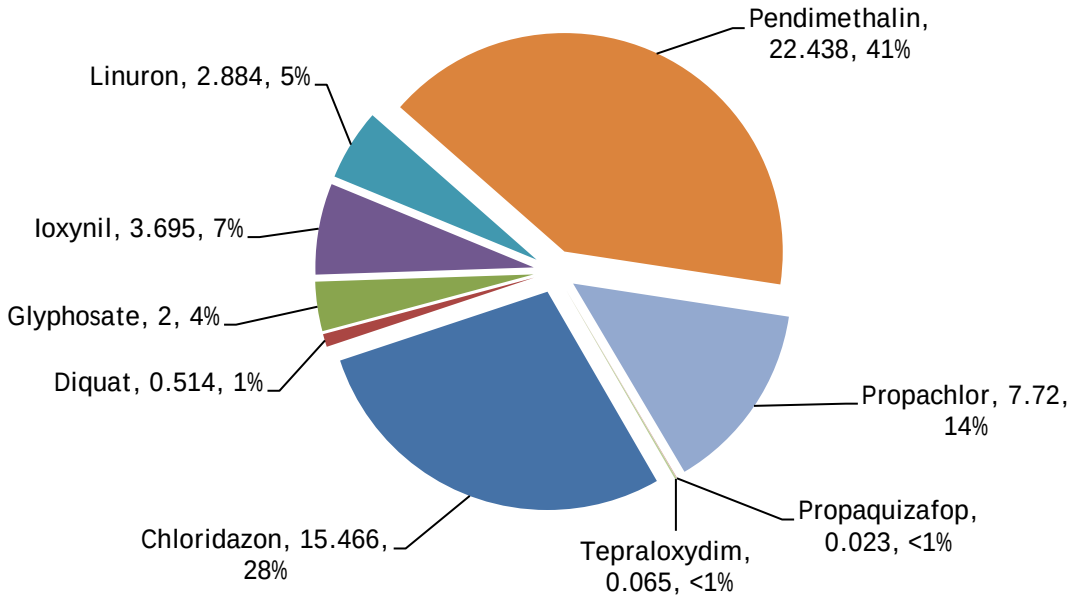
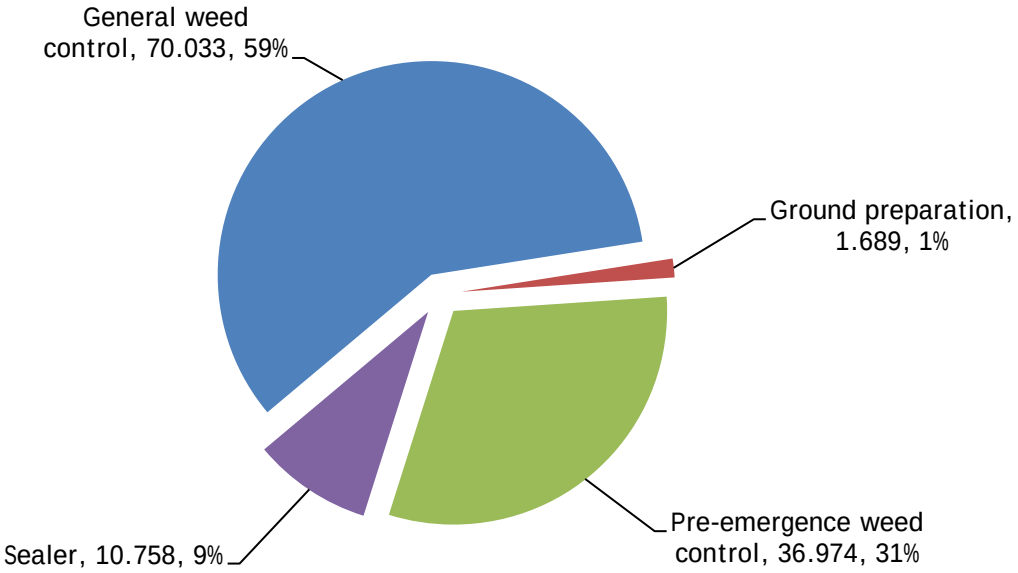


Figure 301: Summer scallion: reasons for herbicide & desiccant use (spha).



Pesticide Usage on winter scallion crops:

1.53 hectares of summer cauliflower crops grown in Northern Ireland

7.34 treated hectares

12.09kg applied

95.0% of crops received at least one treatment

Winter scallion crops received on average 10.0 fungicide and 3.0 herbicide applications.

Figure 302: Regional distribution of winter scallion crops grown in Northern Ireland (ha), 2011.

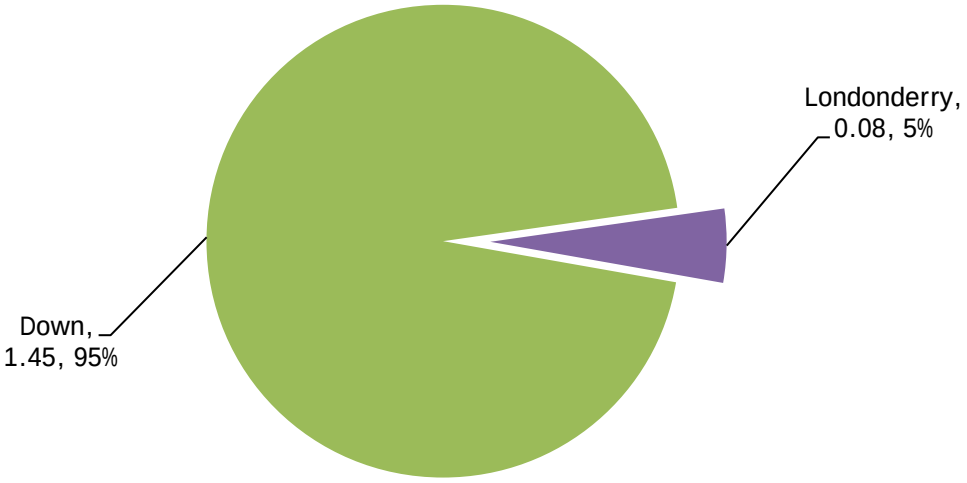


Figure 303: Pesticide usage on winter scallion crops in Northern Ireland (spha), 2011.

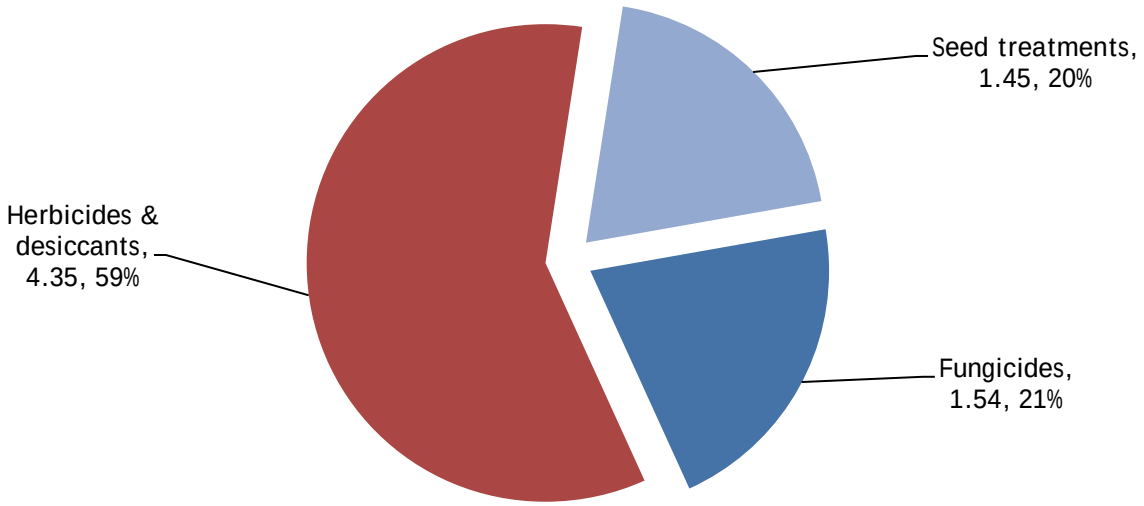


Figure 304: Weight of pesticides applied to winter scallion crops in Northern Ireland (kg), 2011.

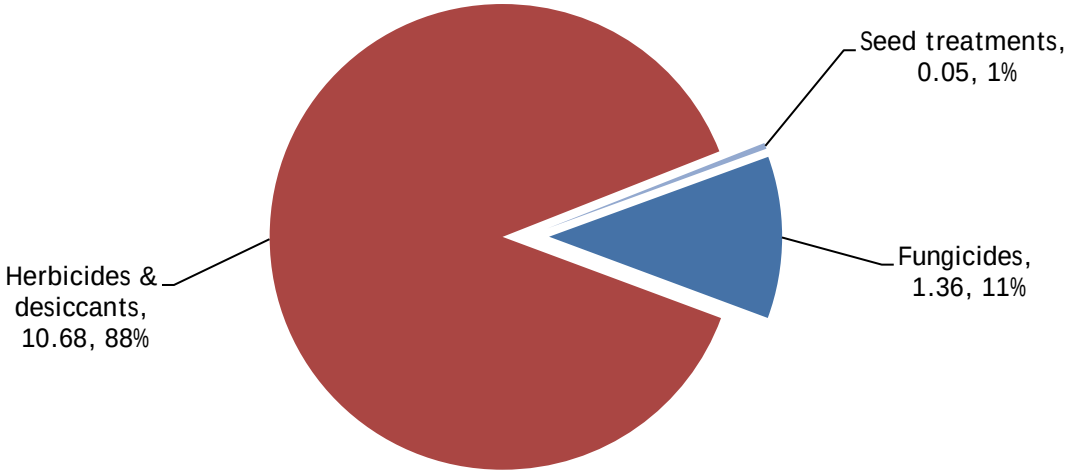
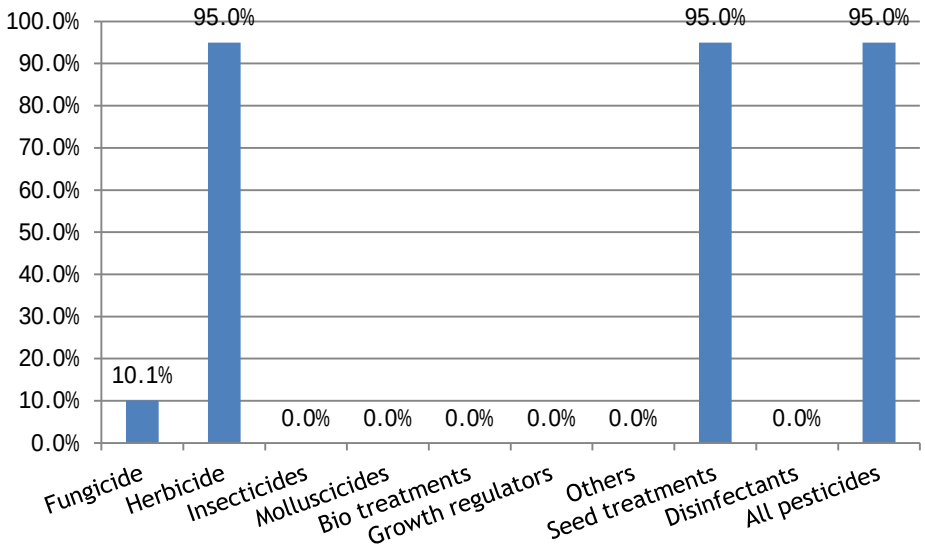


Figure 305: Proportional area of winter scallion crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – winter scallion

Basic area treated: 0.15 hectares
Area treated: 1.54 spray hectares
Weight of active substances applied: 1.36kg
10.1% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Chlorothalonil	0.616	0.154	0.616	40.00%
Chlorothalonil/metalaxyl-M	0.616	0.154	0.662	40.00%
Azoxystrobin	0.308	0.154	0.077	20.00%

Figure 306: Fungicide active substance usage on winter scallion crops in Northern Ireland (spha), 2011.

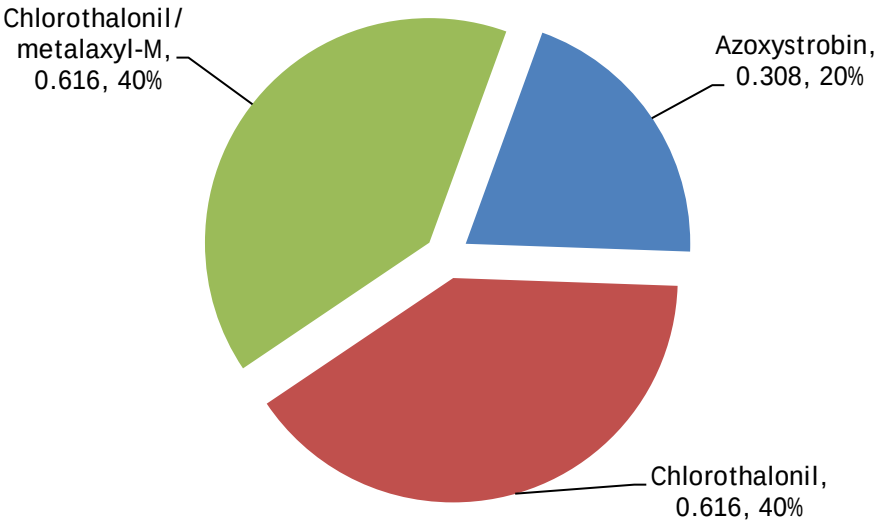


Figure 307: Weight of fungicide active substances applied to winter scallion crops in Northern Ireland (kg), 2011.

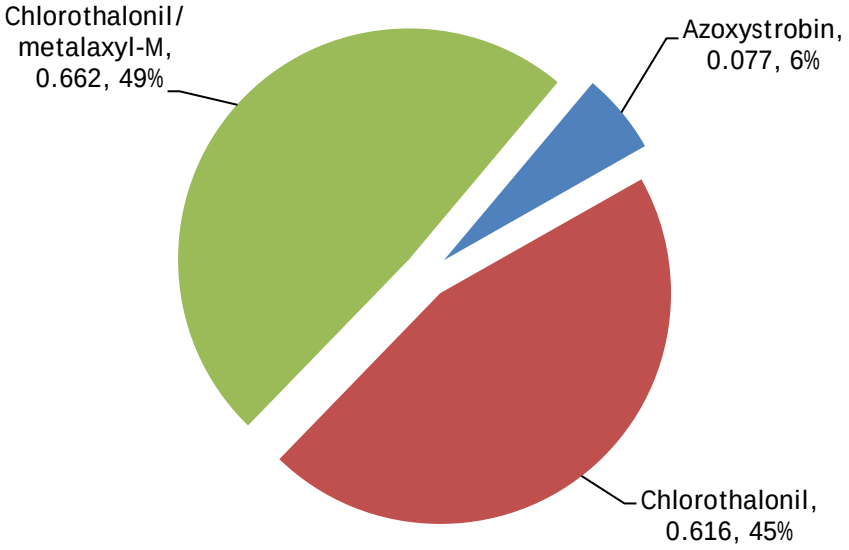
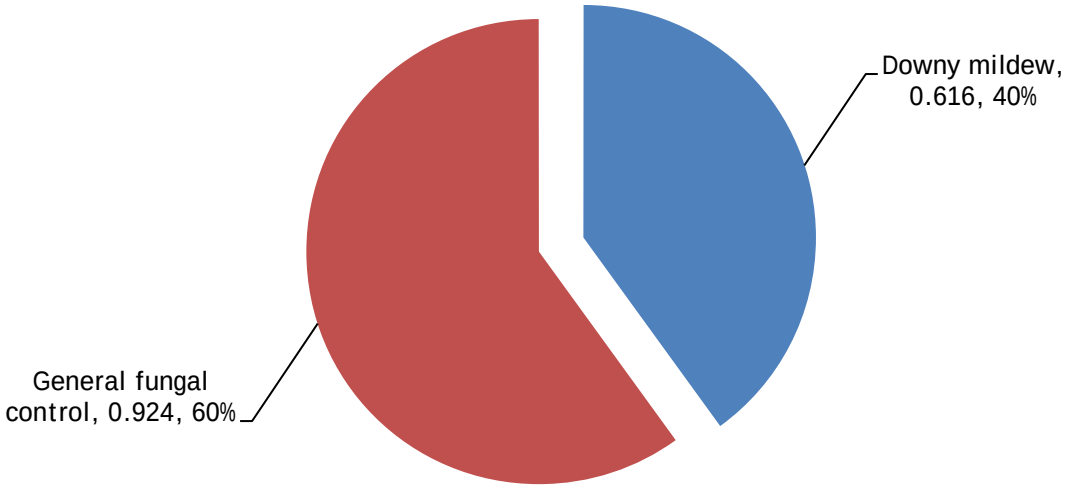


Figure 308: Winter scallion: reasons for fungicide use (spha).



Herbicides & desiccants – winter scallion

Basic area treated: 1.45 hectares
Area treated: 4.35 spray hectares
Weight of active substances applied: 10.68kg
95.0% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pendimethalin	1.45	1.45	1.914	33.33%
Propachlor	1.45	1.45	5.791	33.33%
Glyphosate	1.296	1.296	2.916	29.79%
Ioxynil	0.154	0.154	0.062	3.54%

Figure 309: Herbicide & desiccant active substance usage on winter scallion crops in Northern Ireland (spha), 2011.

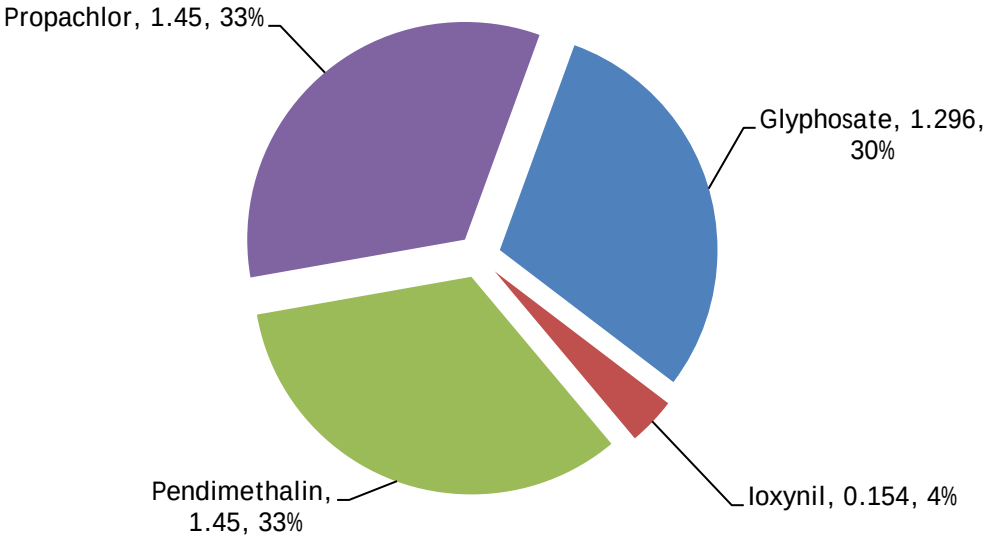


Figure 310: Weight of herbicide & desiccant active substances applied to winter scallion crops in Northern Ireland (kg), 2011.

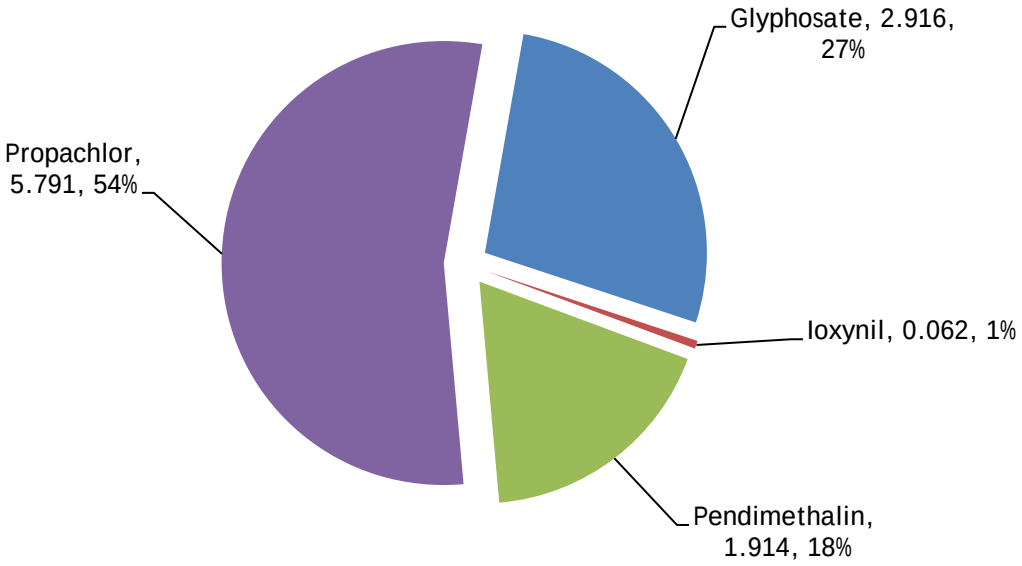
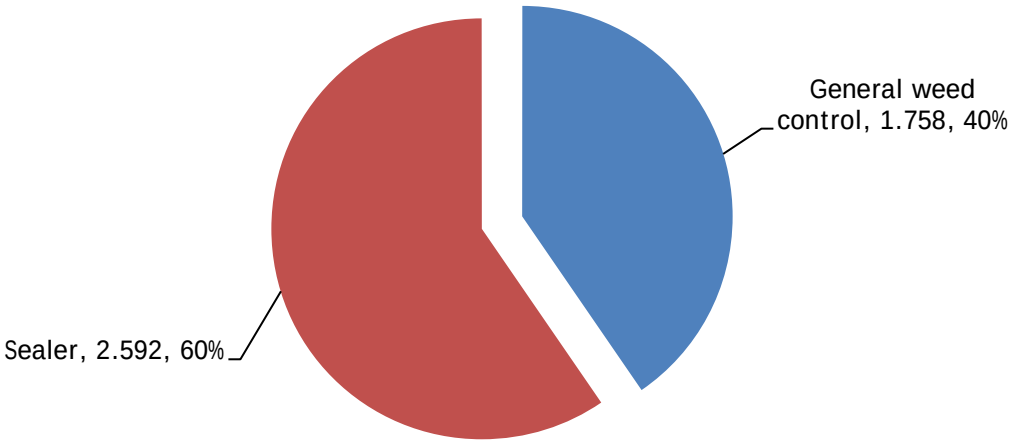
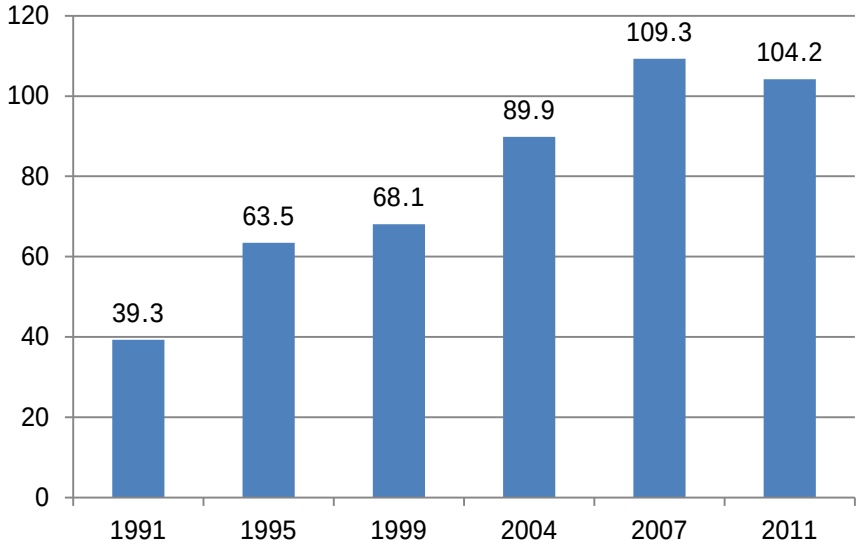


Figure 311: Winter scallion: reasons for herbicide & desiccant use (spha).



Leek crops:

Figure 312: Comparison of the area of leek crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on soup leek crops:

25.77 hectares of soup leek crops grown in Northern Ireland

274.87 treated hectares

125.64kg applied

100% of crops received at least one treatment

Soup leek crops received on average 2.5 fungicide, 4.4 herbicide and 1.0 insecticide applications.

Figure 313: Regional distribution of soup leek crops grown in Northern Ireland (ha), 2011.

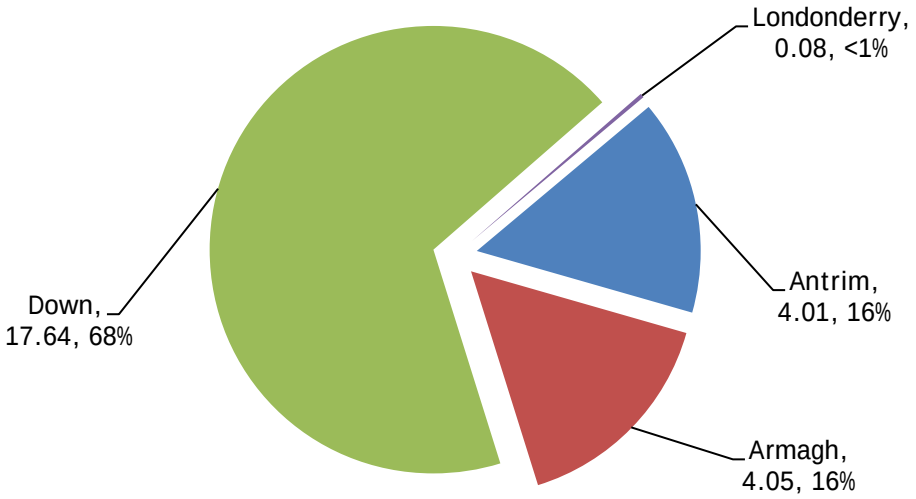


Figure 314: Pesticide usage on soup leek crops in Northern Ireland (spha), 2011.

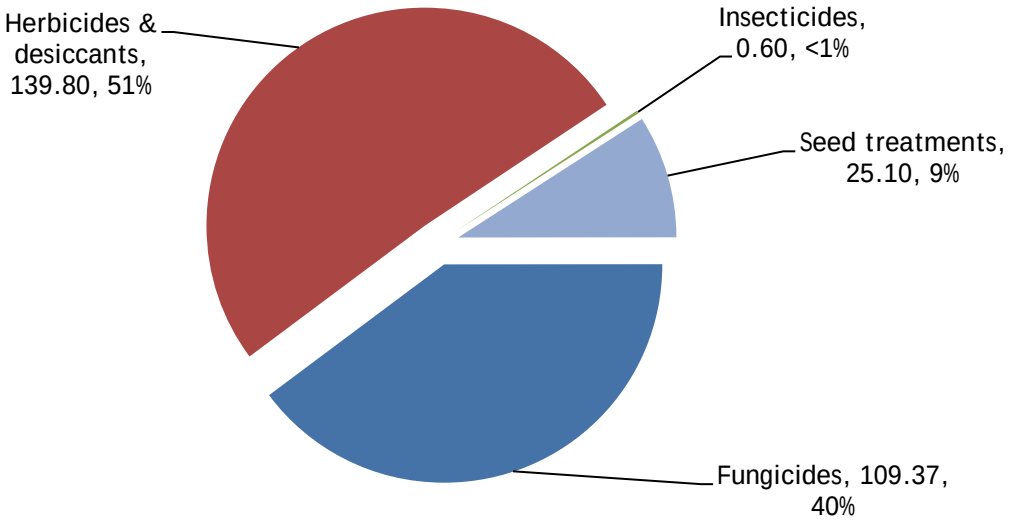


Figure 315: Weight of pesticides applied to soup leek crops in Northern Ireland (kg), 2011.

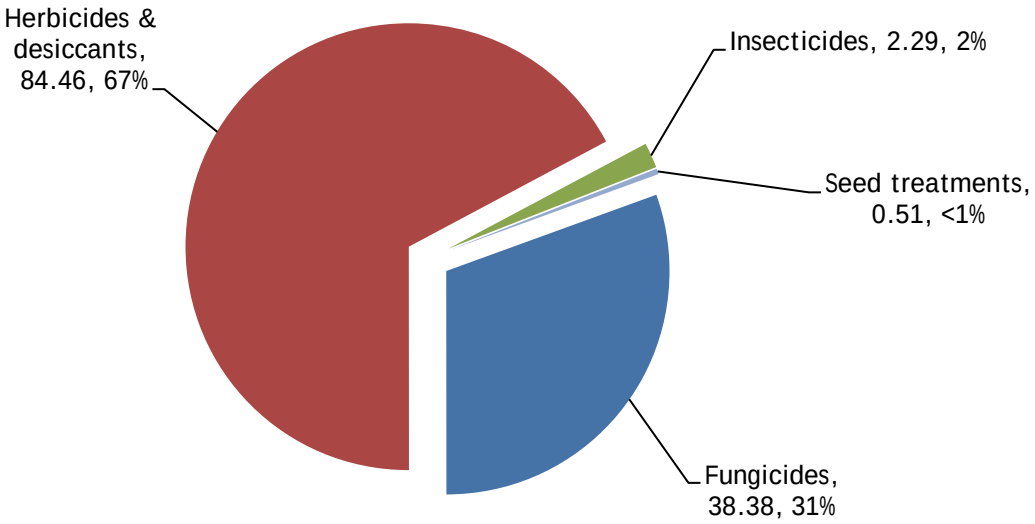
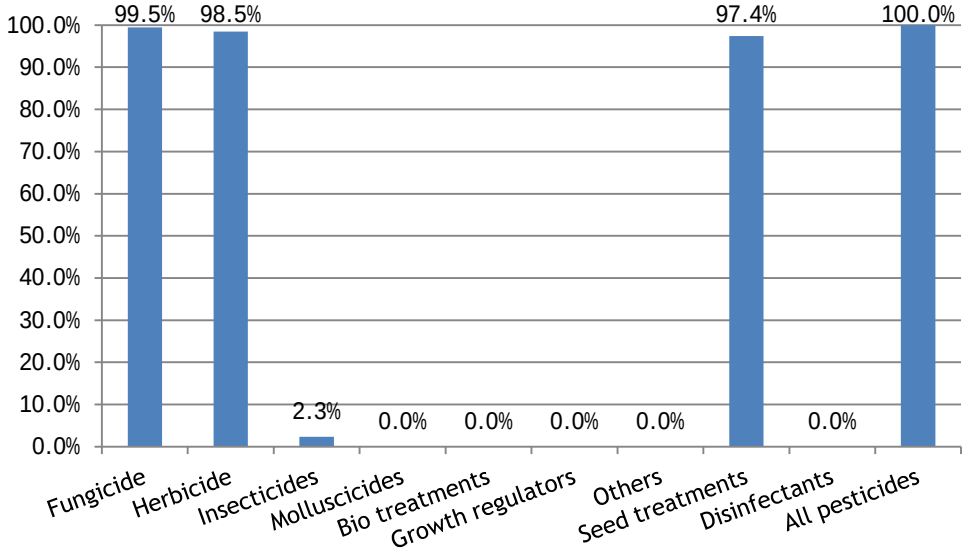


Figure 316: Proportional area of soup leek crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – soup leek

Basic area treated: 25.64 hectares
Area treated: 109.39 spray hectares
Weight of active substances applied: 38.38kg
99.5% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Tebuconazole	48.14	22.002	12.035	44.23%
Azoxystrobin	39.208	13.069	9.802	36.02%
Chlorothalonil/metalaxyl-M	13.873	5.856	13.92	12.75%
Azoxystrobin/difenoconazole	5.83	2.134	1.895	5.36%
Fenpropimorph	1.247	1.247	0.585	1.15%

Figure 317: Fungicide active substance usage on soup leek crops in Northern Ireland (spha), 2011.

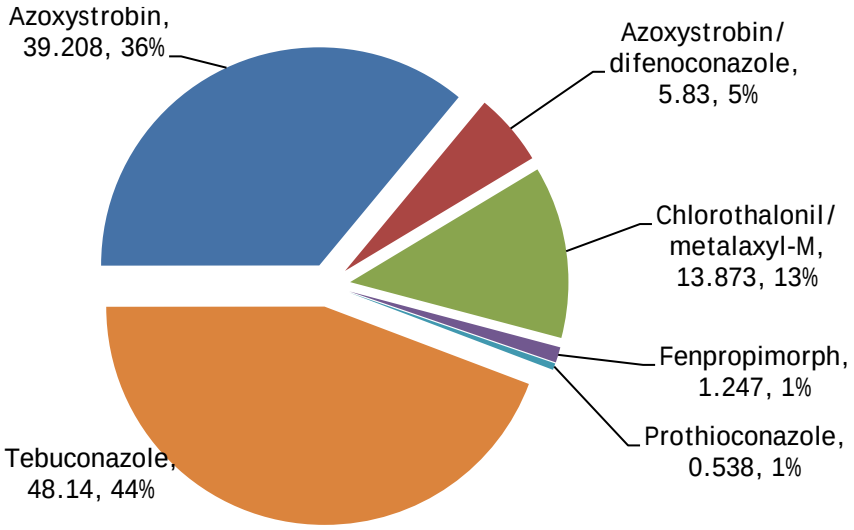


Figure 318: Weight of fungicide active substances applied to soup leek crops in Northern Ireland (kg), 2011.

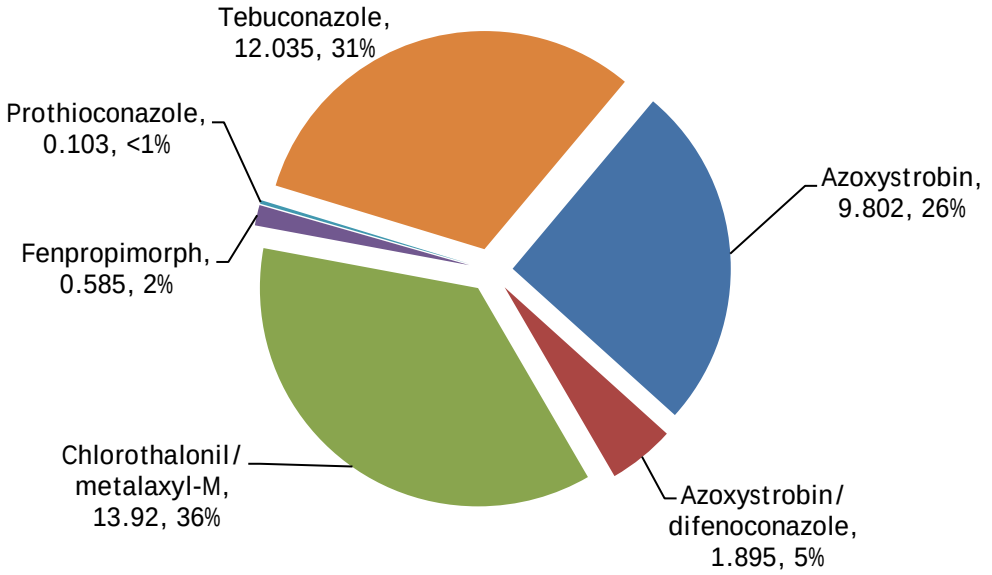
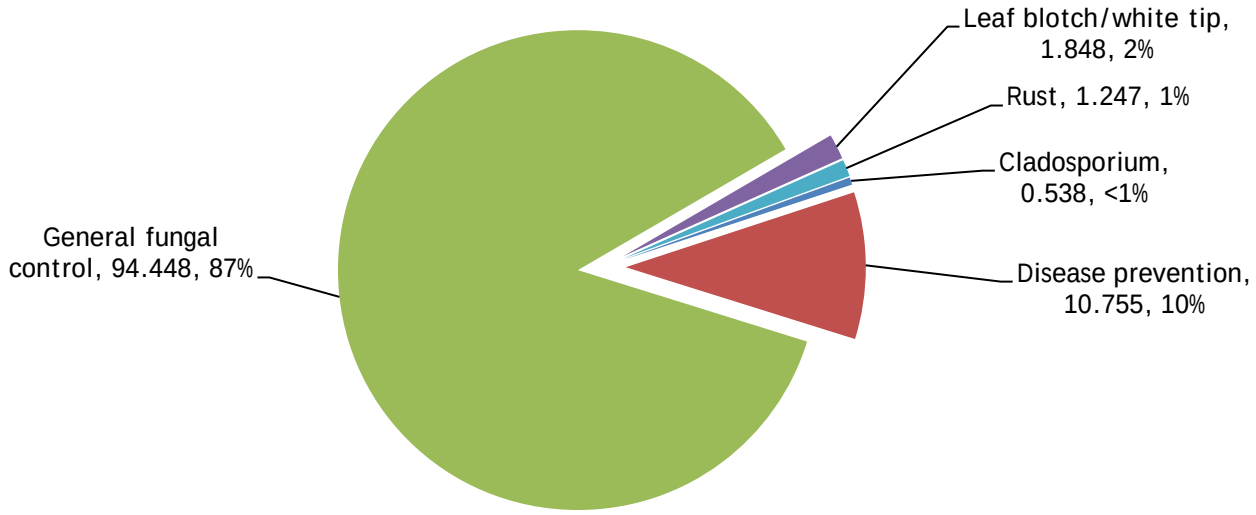


Figure 319: Soup leek: reasons for fungicide use (spha).



Herbicides & desiccants – soup leek

Basic area treated: 25.38 hectares
Area treated: 139.80 spray hectares
Weight of active substances applied: 84.46kg
98.5% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Ioxynil	71.809	20.803	10.746	51.37%
Pendimethalin	25.384	25.384	30.471	18.16%
Glyphosate	17.309	17.001	17.459	12.38%
Chloridazon	17.12	17.12	7.085	12.25%
Propachlor	6.729	6.729	18.224	4.81%

Figure 320: Herbicide & desiccant active substance usage on soup leek crops in Northern Ireland (spha), 2011.

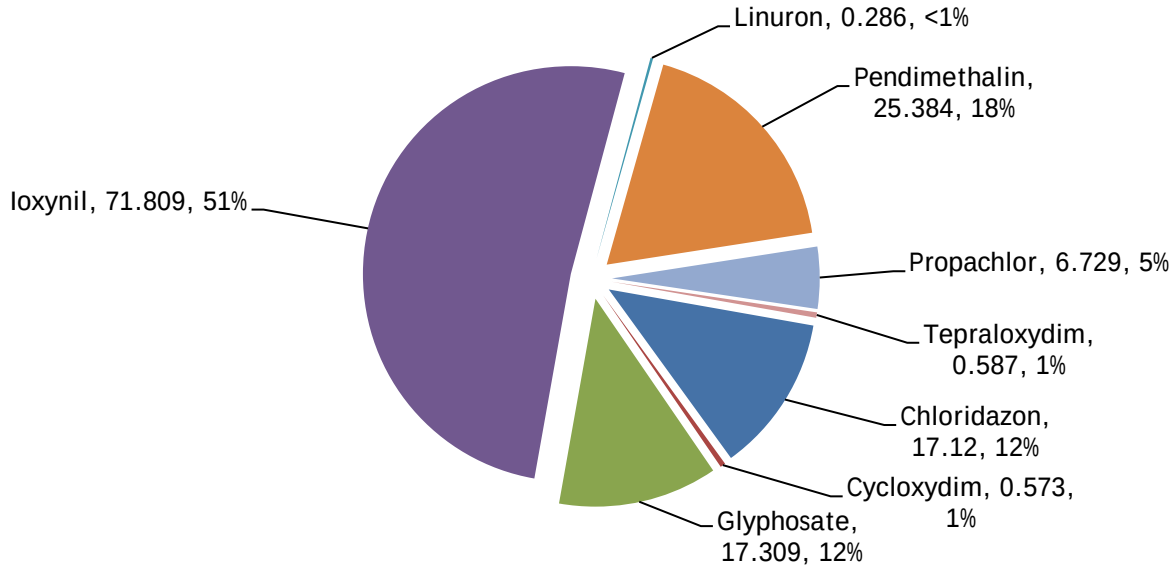


Figure 321: Weight of herbicide & desiccant active substances applied to soup leek crops in Northern Ireland (kg), 2011.

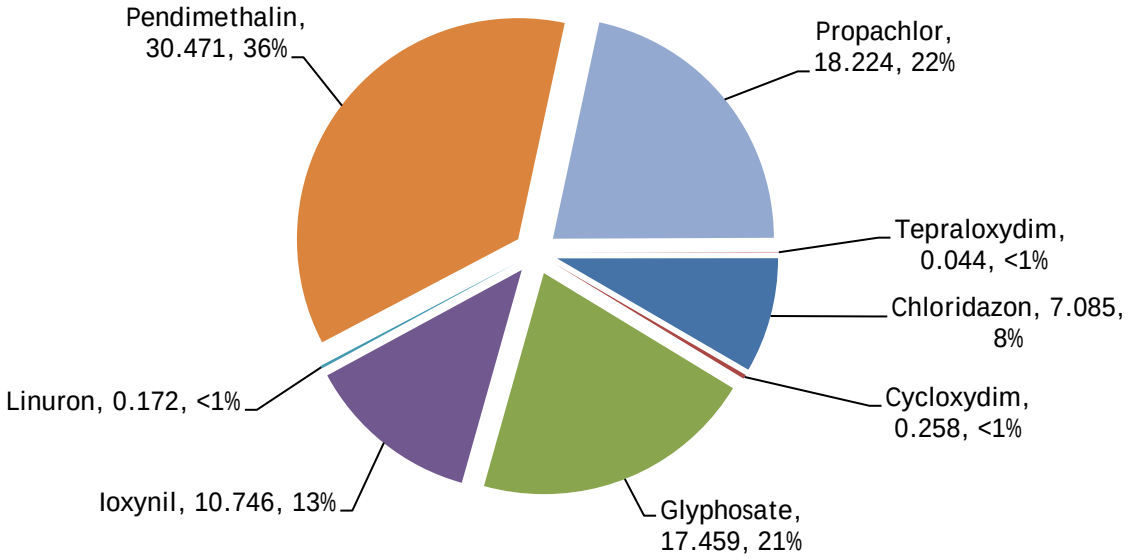
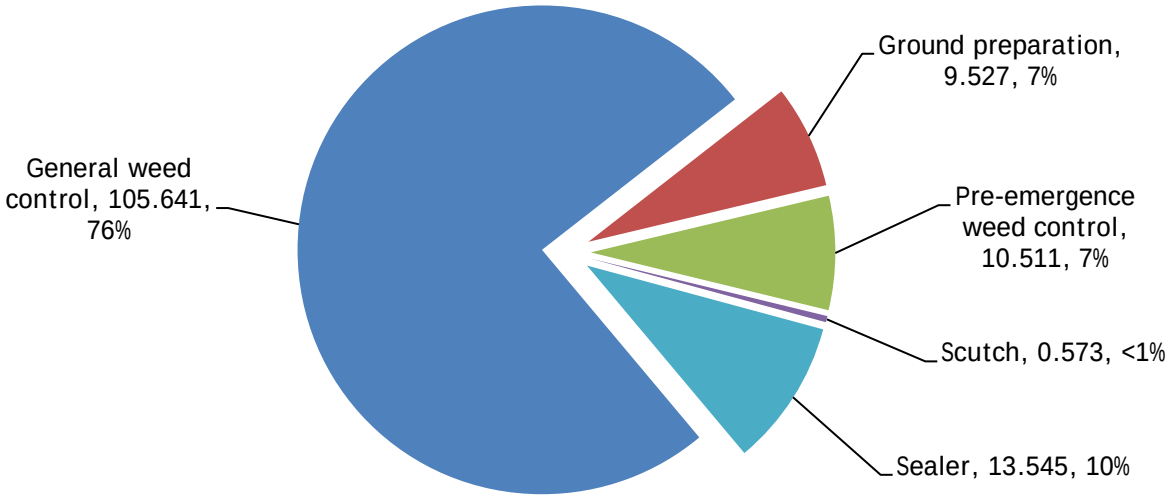


Figure 322: Soup leek: reasons for herbicide & desiccant use (spha).



Insecticides – soup leek

Basic area treated: 0.60 hectares
Area treated: 0.60 spray hectares
Weight of active substances applied: 2.29kg
2.3% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Deltamethrin	0.538	0.538	0.004	89.67%
Garlic Extract	0.062	0.062	2.287	10.33%

Figure 323: Insecticide active substance usage on soup leek crops in Northern Ireland (spha), 2011.

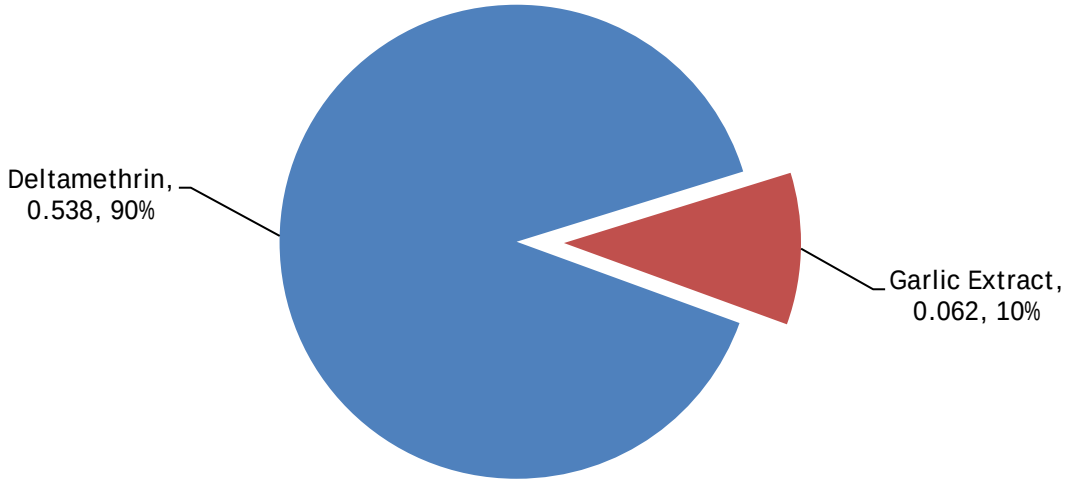


Figure 324: Weight of insecticide active substances applied to soup leek crops in Northern Ireland (kg), 2011.

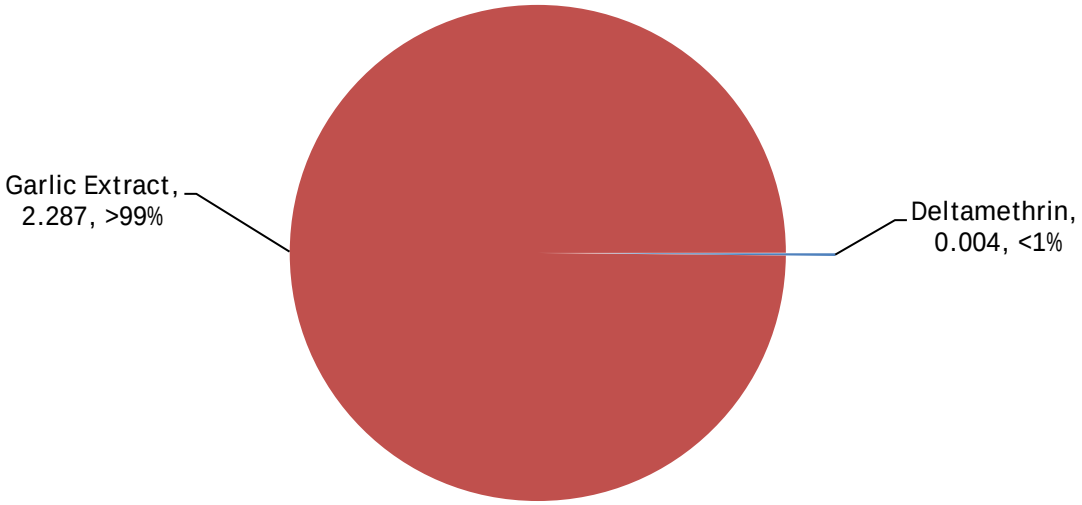
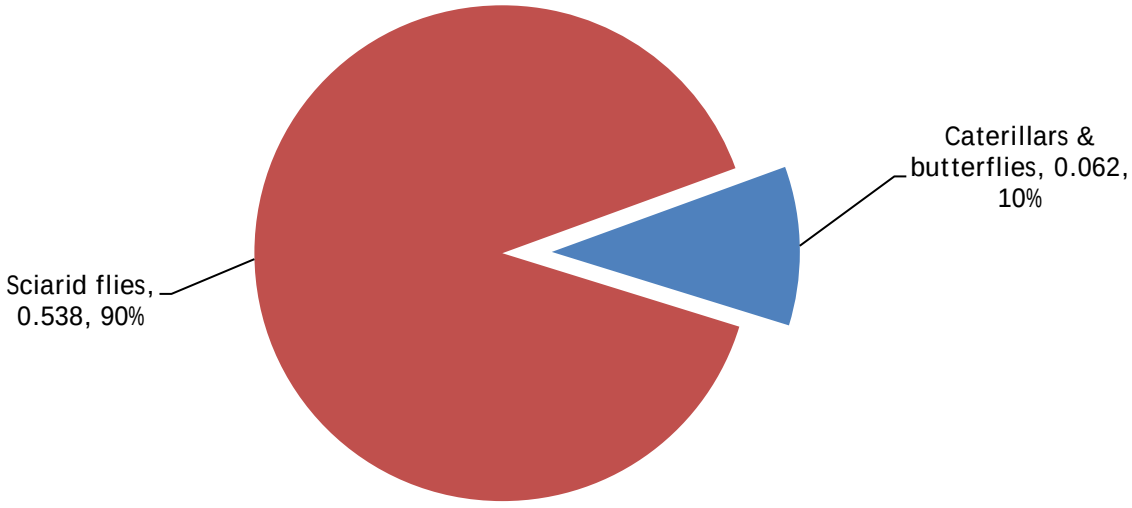


Figure 325: Soup leek: reasons for insecticide use (spha).



Pesticide Usage on table leek crops:

78.42 hectares of table leek crops grown in Northern Ireland

579.09 treated hectares

217.32kg applied

100% of crops received at least one treatment

Table leek crops received on average 3.1 fungicide, 3.9 herbicide and 1.0 insecticide

Figure 326: Regional distribution of table leek crops grown in Northern Ireland (ha), 2011.

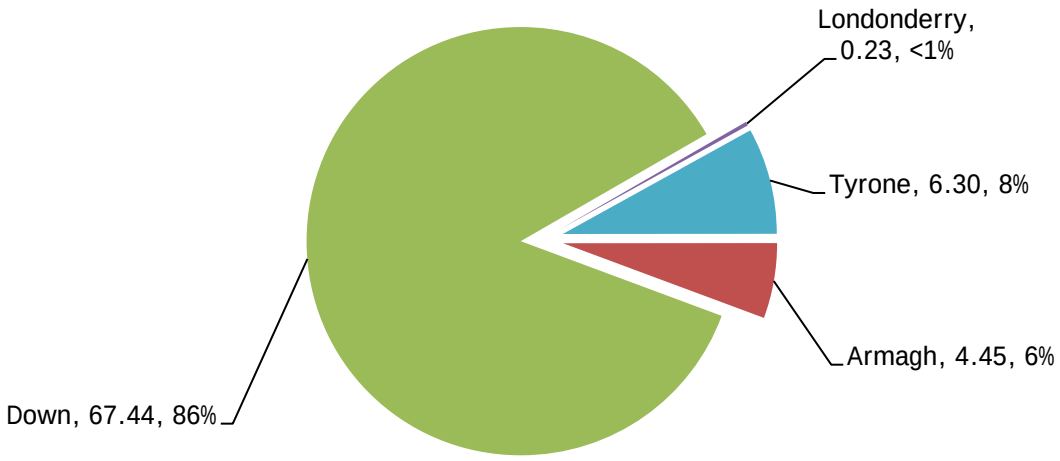


Figure 327: Pesticide usage on table leek crops in Northern Ireland (spha), 2011.

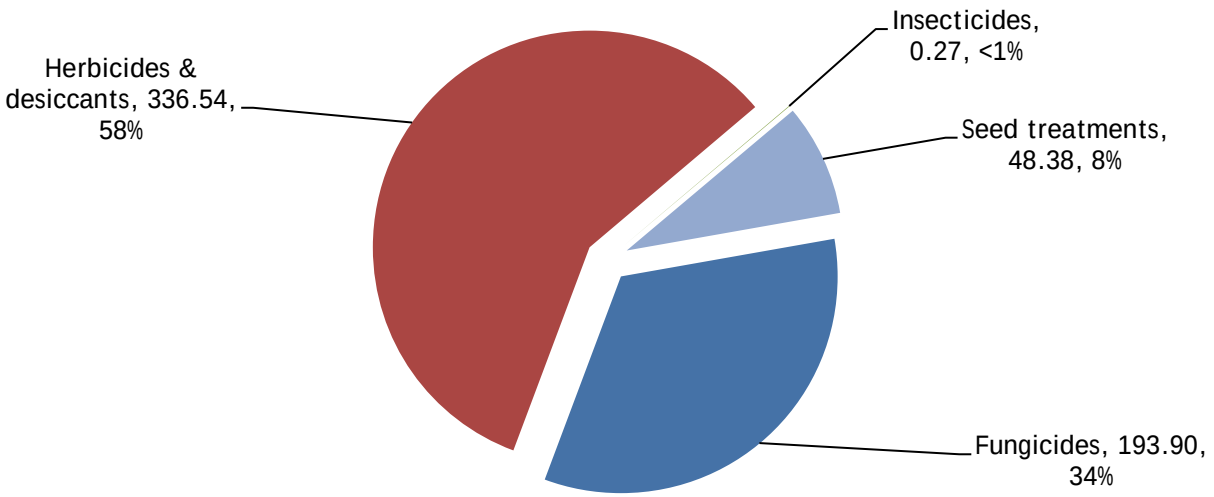


Figure 328: Weight of pesticides applied to table leek crops in Northern Ireland (kg), 2011.

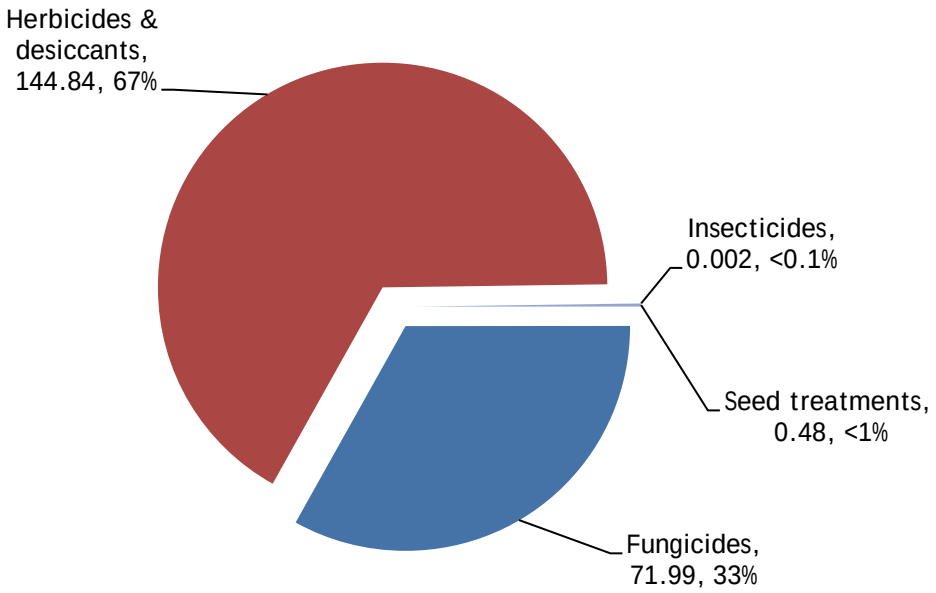
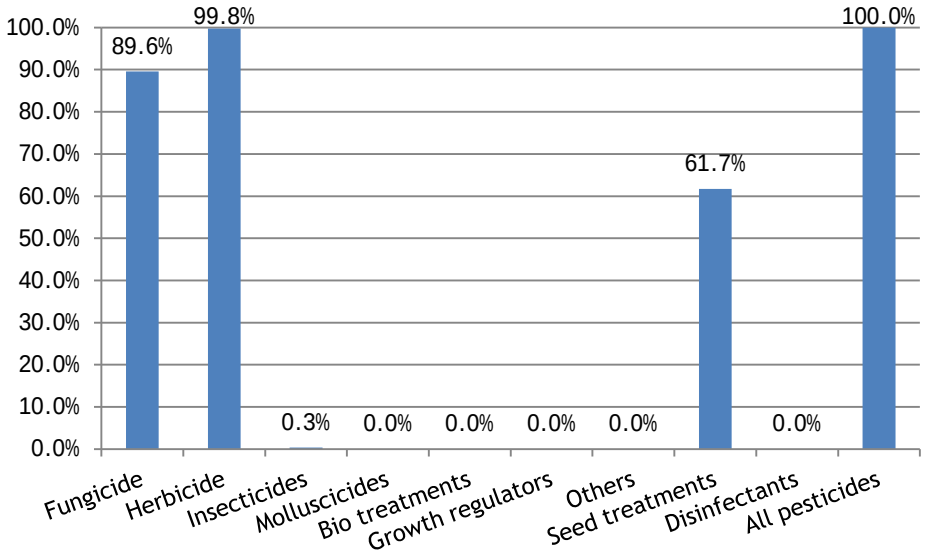


Figure 329: Proportional area of table leek crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides –

Basic area treated: 70.26 hectares
Area treated: 193.9 spray hectares
Weight of active substances applied: 71.99kg
89.6% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Prothioconazole	78.037	45.996	14.983	40.30%
Tebuconazole	61.629	28.944	15.407	31.83%
Chlorothalonil/metalaxyl-M	13.878	7.816	14.918	7.17%
Azoxystrobin	11.172	9.924	2.793	5.77%
Azoxystrobin/difenoconazole	9.777	9.777	3.178	5.05%

Figure 330: Fungicide active substance usage on table leek crops in Northern Ireland (spha), 2011.

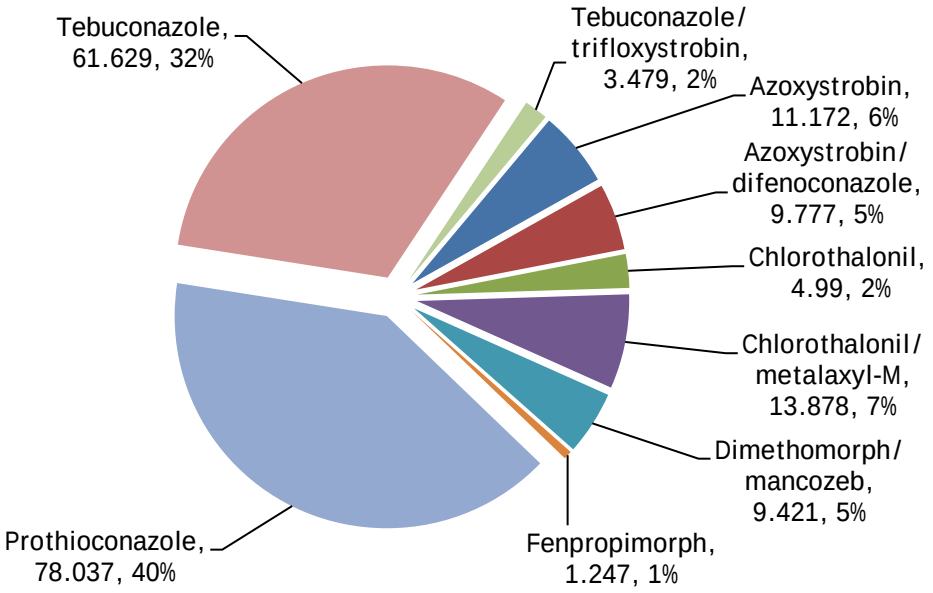


Figure 331: Weight of fungicide active substances applied to table leek crops in Northern Ireland (kg), 2011.

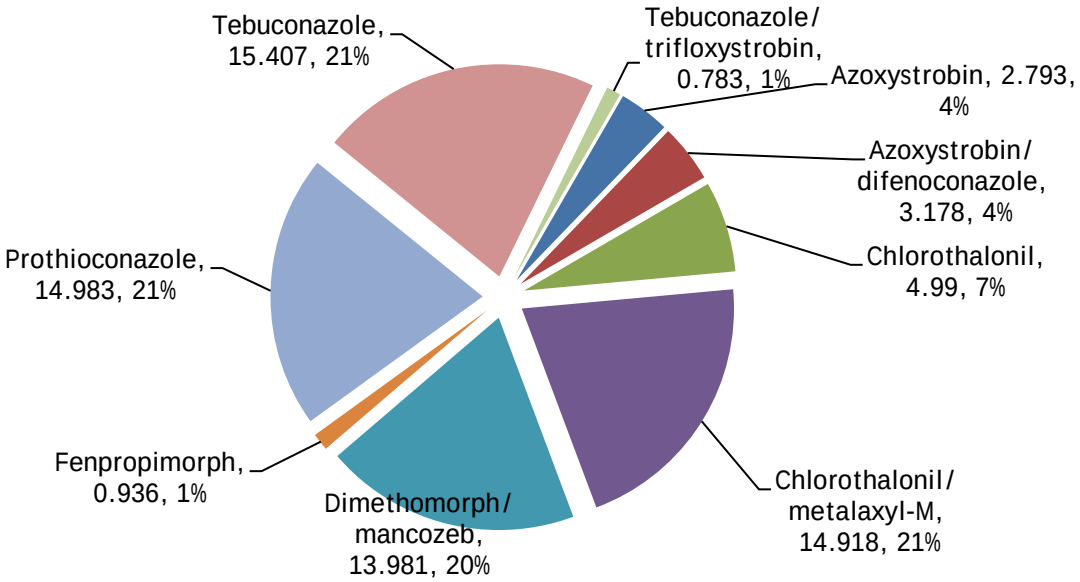
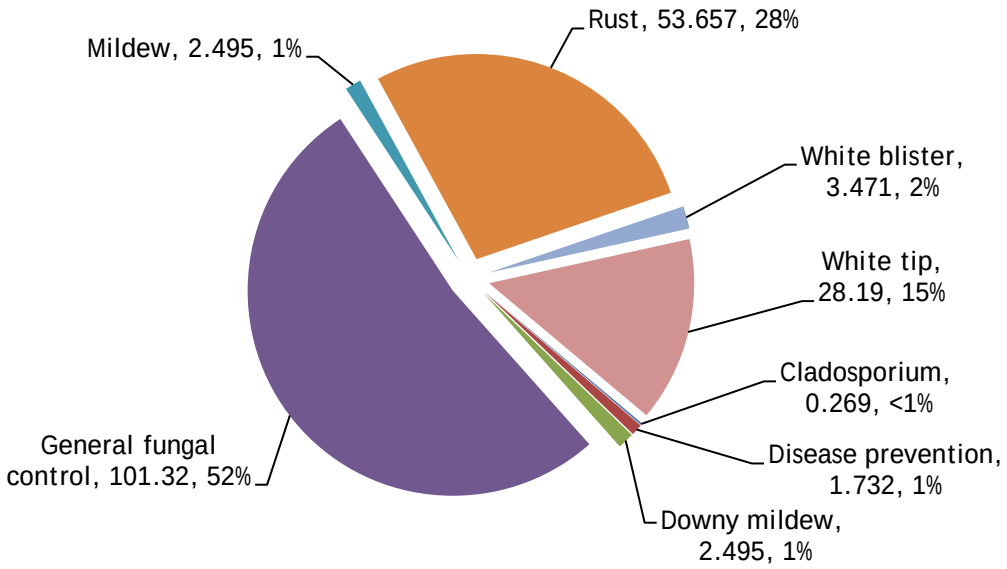


Figure 332: Table leeks: reasons for fungicide use (spha).



Herbicides & desiccants – table leeks

Basic area treated: 78.23 hectares
Area treated: 336.54 spray hectares
Weight of active substances applied: 144.84kg
99.8% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Ioxynil	152.703	71.235	16.71	45.37%
Pendimethalin	45.143	45.143	43.743	13.41%
Chloridazon	33.478	33.478	26.642	9.95%
Fluroxypyr	27.64	23.73	4.024	8.21%
Tepraloxydim	22.584	22.584	1.694	6.71%

Figure 333: Herbicide & desiccant active substance usage on table leek crops in Northern Ireland (spha), 2011.

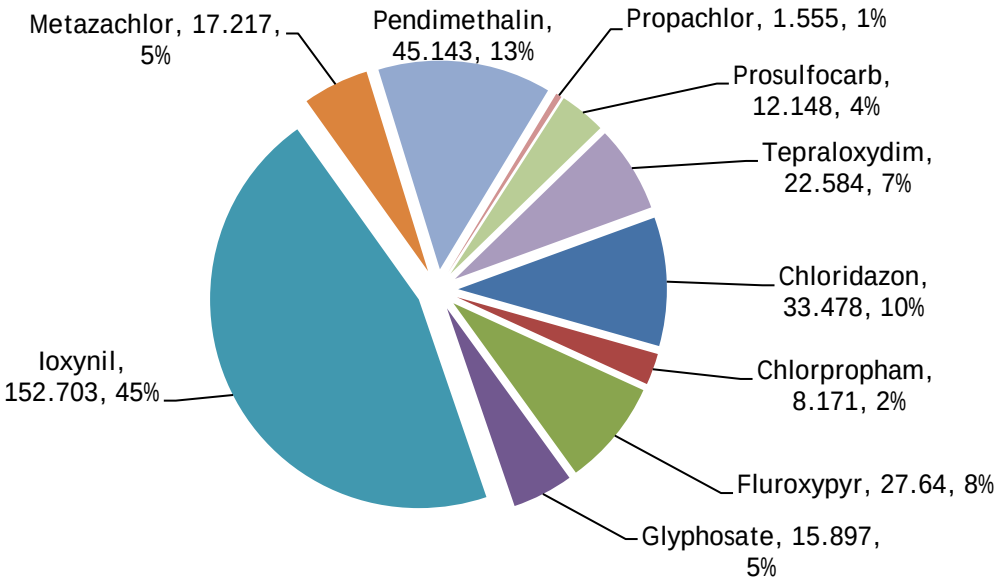


Figure 334: Weight of herbicide & desiccant active substances applied to table leek crops in Northern Ireland (kg), 2011.

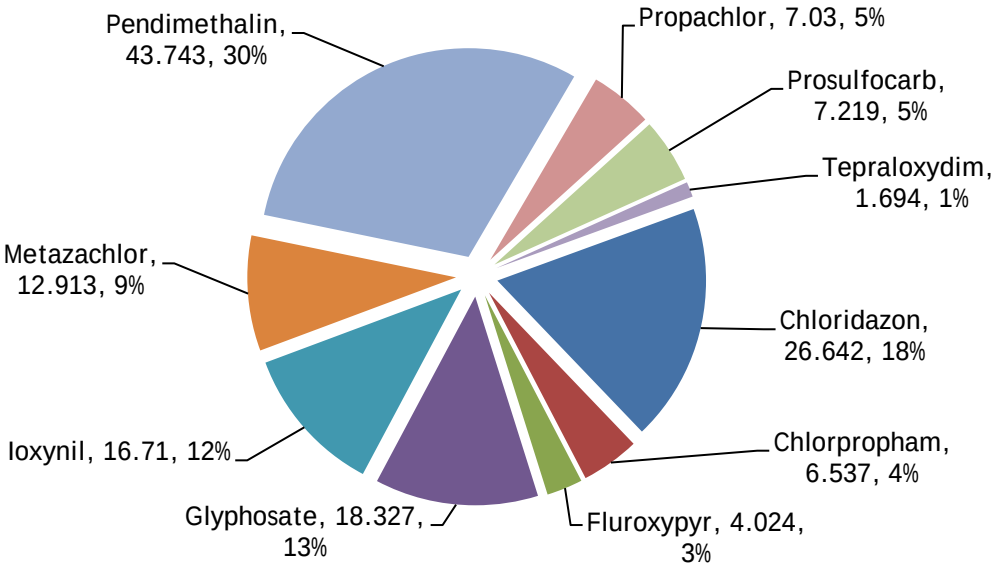
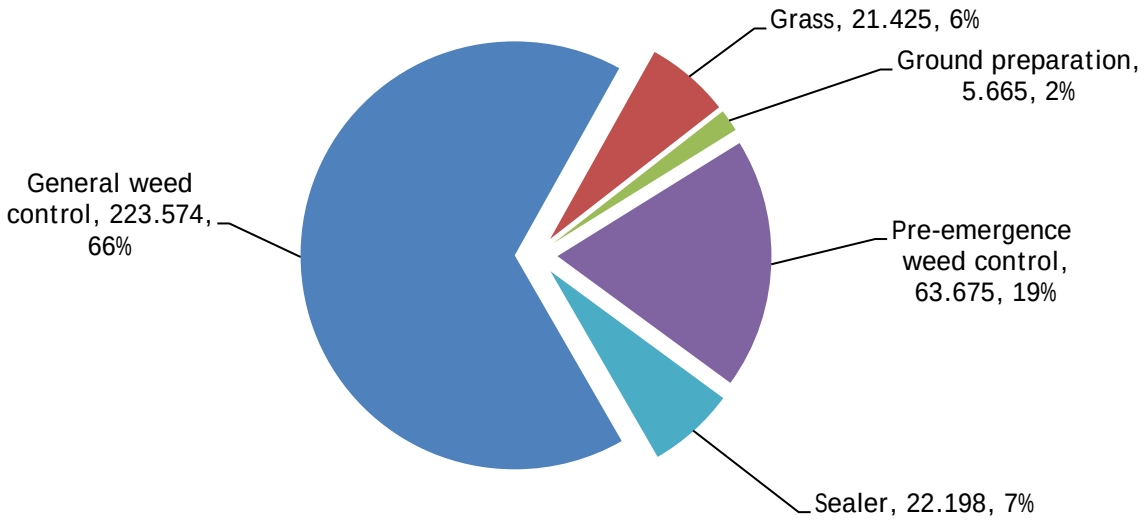


Figure 335: Table leeks: reasons for herbicide & desiccant use (spha).



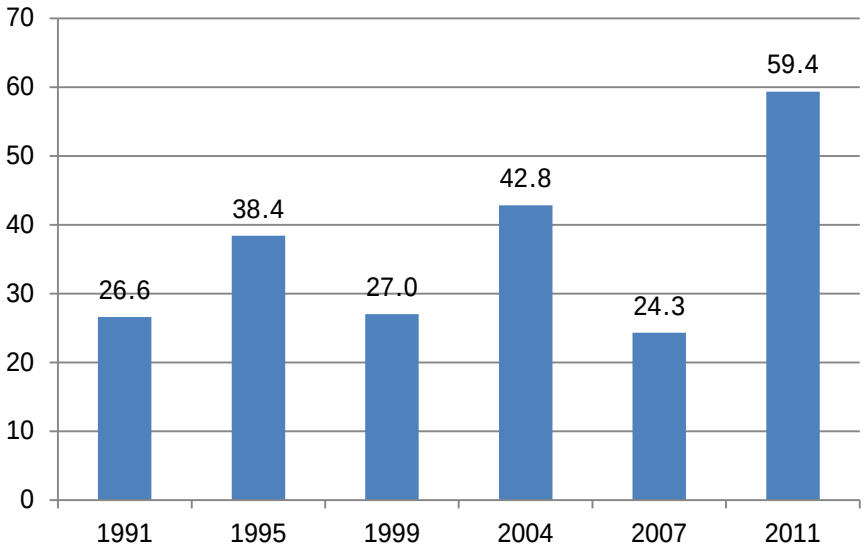
Insecticides – table leeks

Basic area treated: 0.27 hectares
Area treated: 0.27 spray hectares
Weight of active substances applied: 0.002kg
0.3% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Deltamethrin	0.269	0.269	0.002	

Lettuce crops:

Figure 336: Comparison of the area of lettuce crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on lettuce crops:

59.35 hectares of lettuce crops grown in Northern Ireland all of which was grown in County Armagh

464.22 treated hectares

320.55kg applied

100% of crops received at least one treatment

Lettuce received on average 2.0 fungicide, 2.2 herbicide, 1.4 insecticide and 1.0 molluscicide applications.

Figure 337: Pesticide usage on lettuce crops in Northern Ireland (spha), 2011.

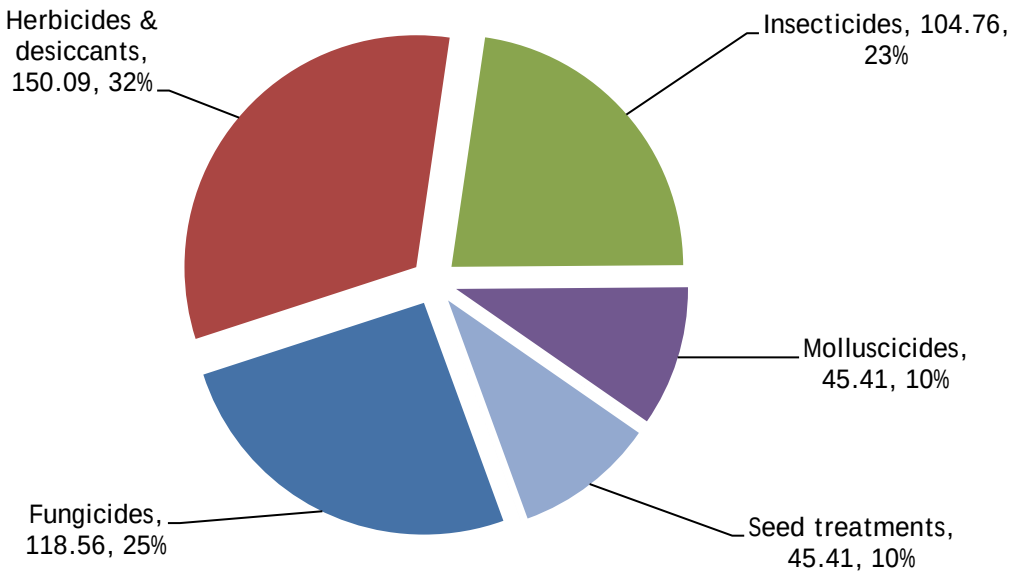


Figure 338: Weight of pesticides applied to lettuce crops in Northern Ireland (kg), 2011.

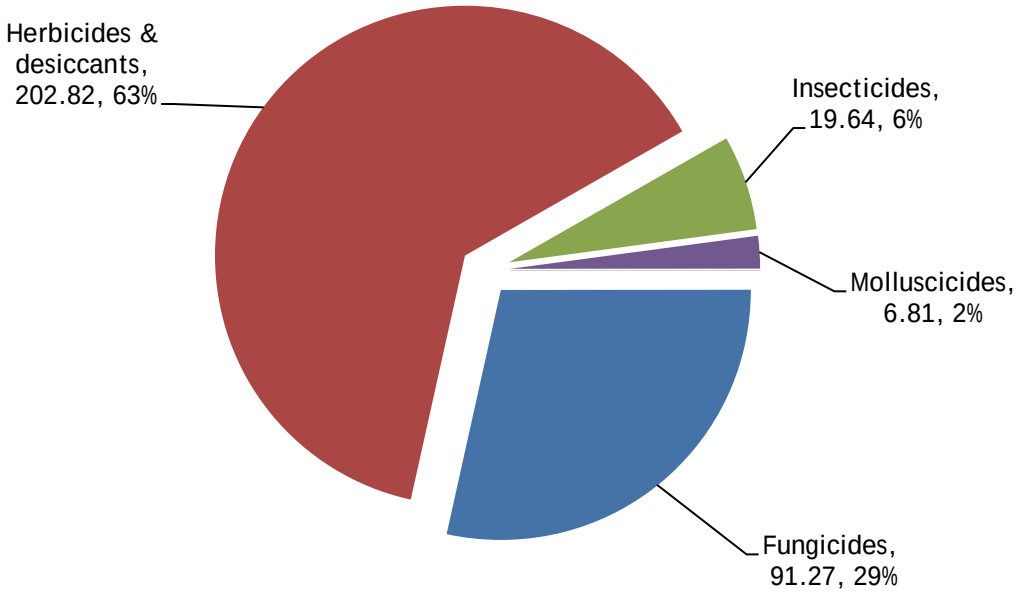
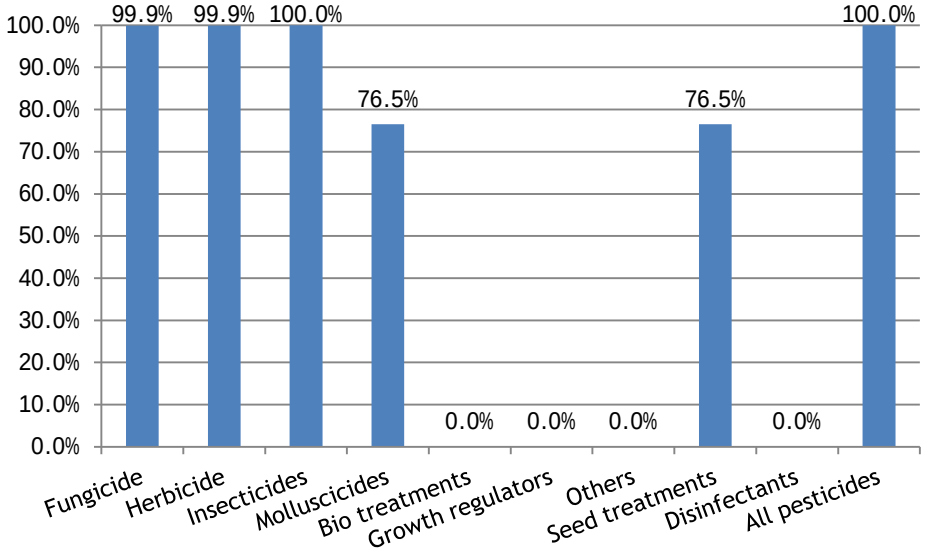


Figure 339: Proportional area of lettuce crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – lettuce

Basic area treated: 59.28 hectares
Area treated: 118.56 spray hectares
Weight of active substances applied: 91.27kg
99.9% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin	59.279	59.279	14.82	50.00%
Mancozeb/metalaxyl-M	59.279	59.279	76.453	50.00%

Figure 340: Fungicide active substance usage on lettuce crops in Northern Ireland (spha), 2011.

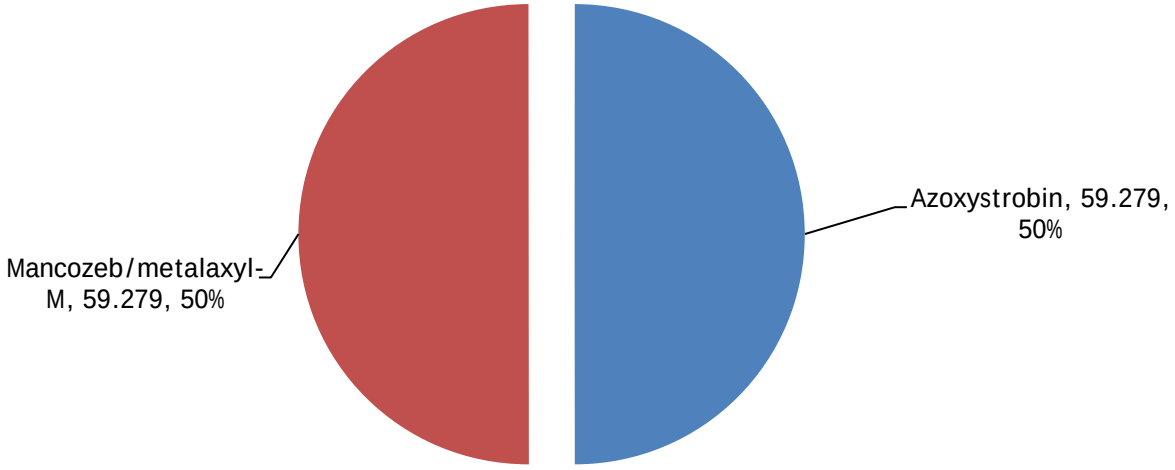


Figure 341: Weight of fungicide active substances applied to lettuce crops in Northern Ireland (kg), 2011.

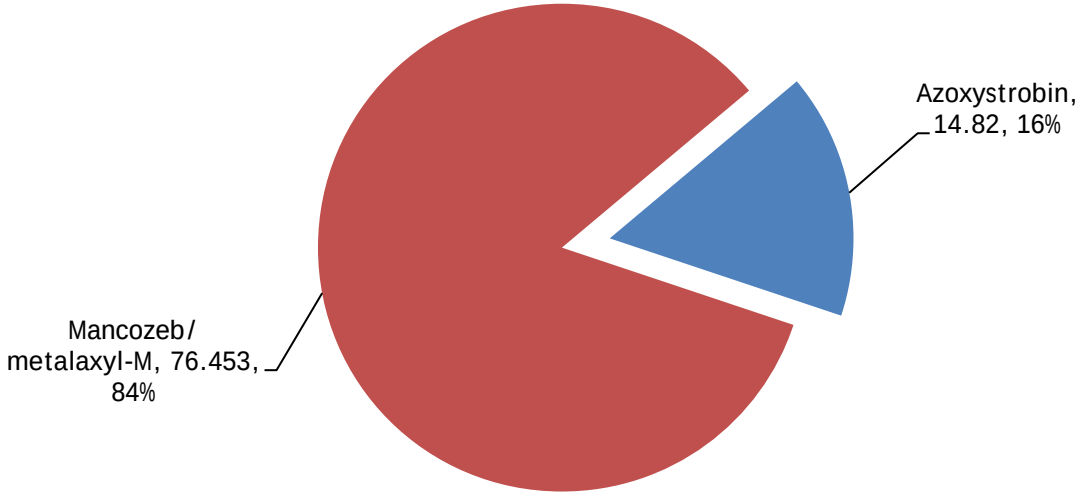
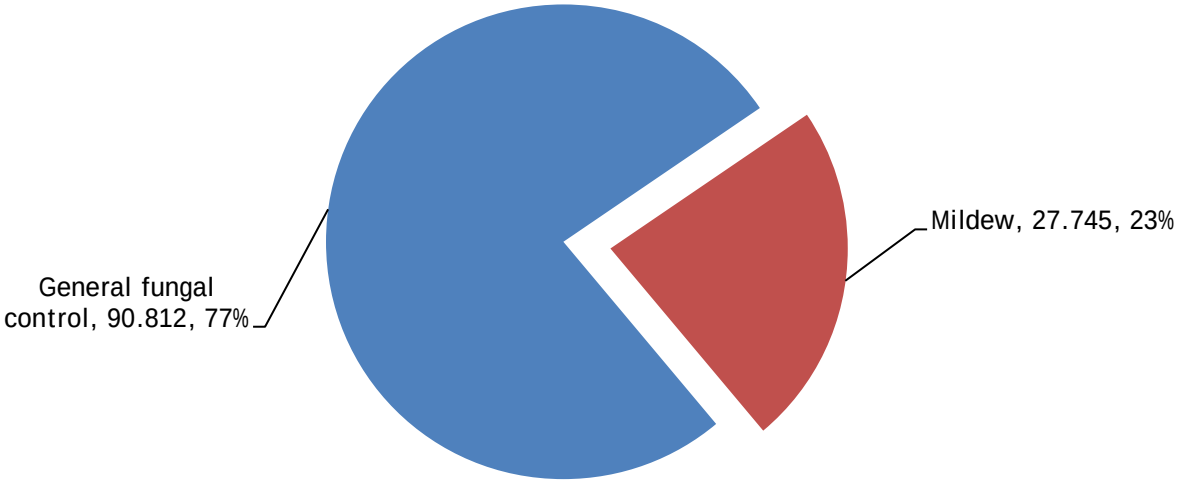


Figure 342: Lettuce: reasons for fungicide use (spha).



Herbicides & desiccants – lettuce

Basic area treated: 59.28 hectares
Area treated: 150.09 spray hectares
Weight of active substances applied: 202.82kg
99.9% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pendimethalin	90.812	45.406	119.827	60.50%
Propyzamide	59.279	59.279	82.99	39.50%

Figure 343: Herbicide & desiccant active substance usage on lettuce crops in Northern Ireland (spha), 2011.

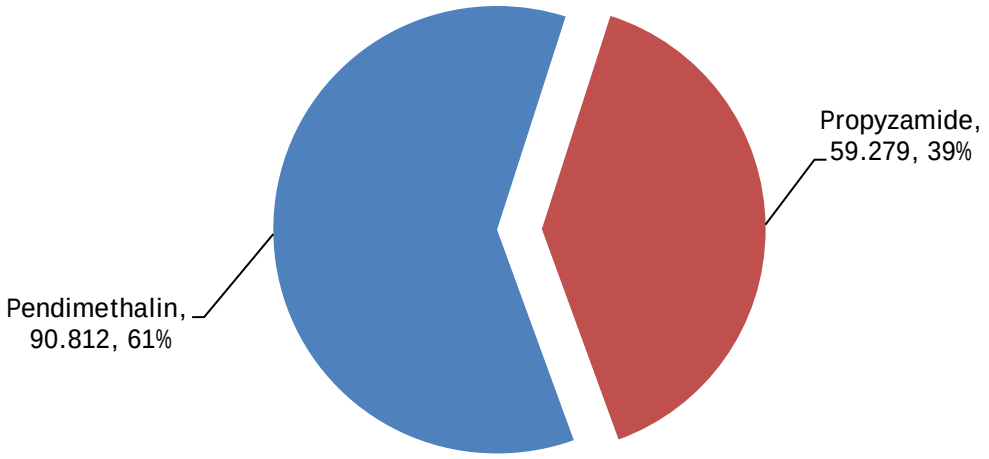


Figure 344: Weight of herbicide & desiccant active substances applied to lettuce crops in Northern Ireland (kg), 2011.

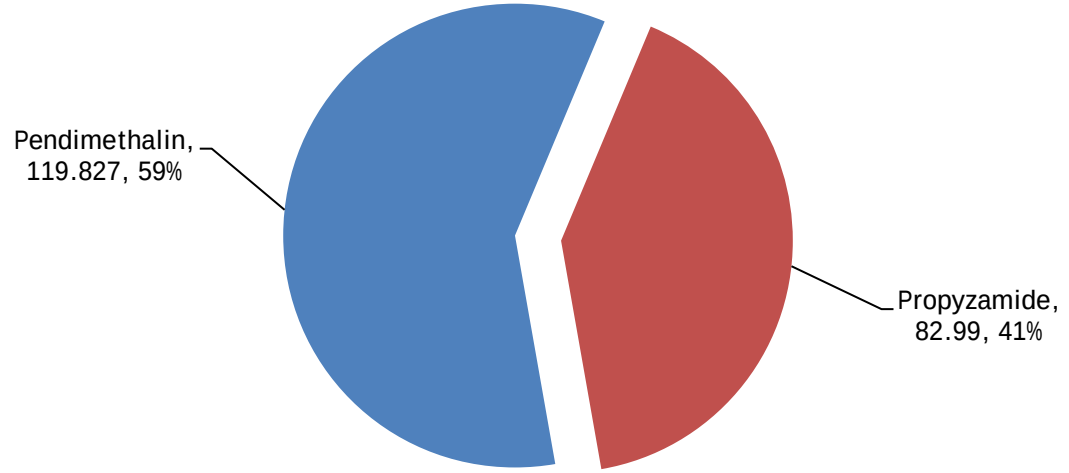
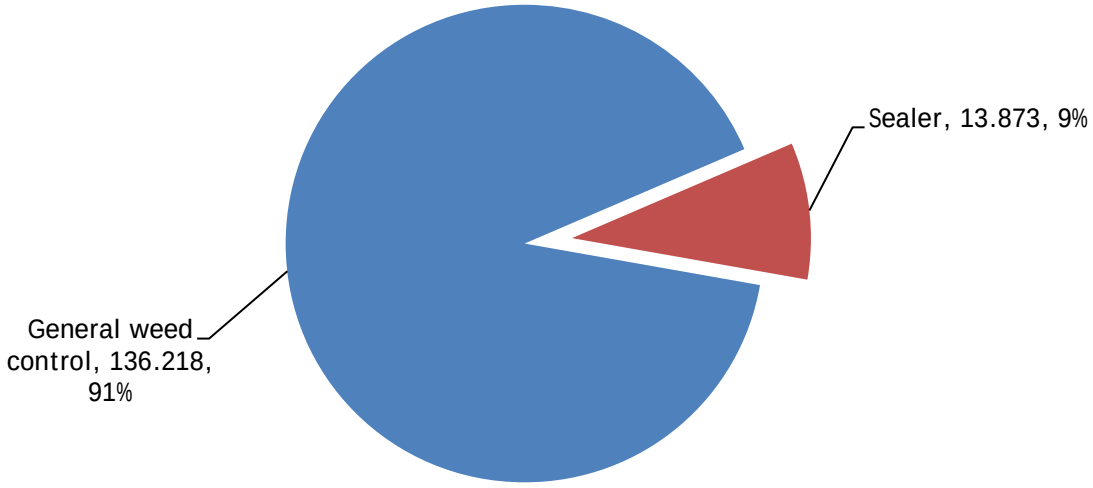


Figure 345: Lettuce: reasons for herbicide & desiccant use (spha).



Insecticides – lettuce

Basic area treated: 59.35 hectares
Area treated: 104.76 spray hectares
Weight of active substances applied: 19.64kg
100% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pymetrozine	45.406	45.406	9.081	76.60%
Pirimicarb	13.873	13.873	3.468	23.40%

Figure 346: Insecticide active substance usage on lettuce crops in Northern Ireland (spha), 2011.

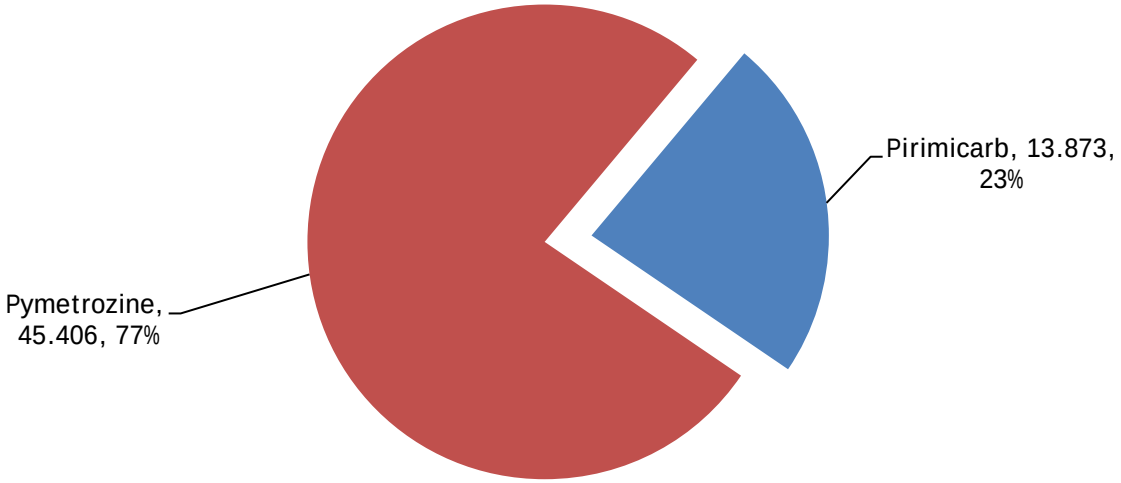


Figure 347: Weight of insecticide active substances applied to lettuce crops in Northern Ireland (kg), 2011.

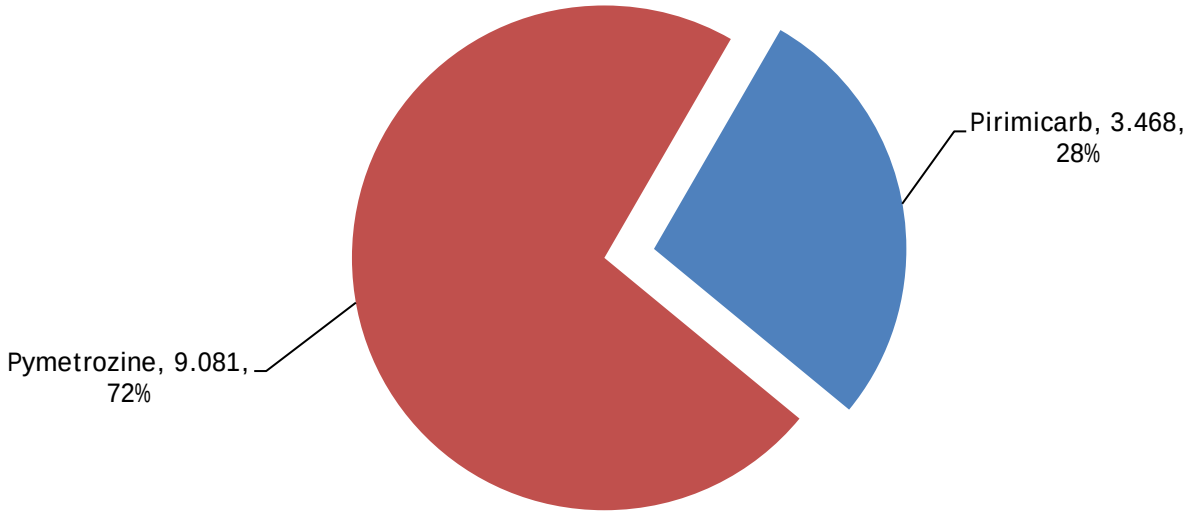
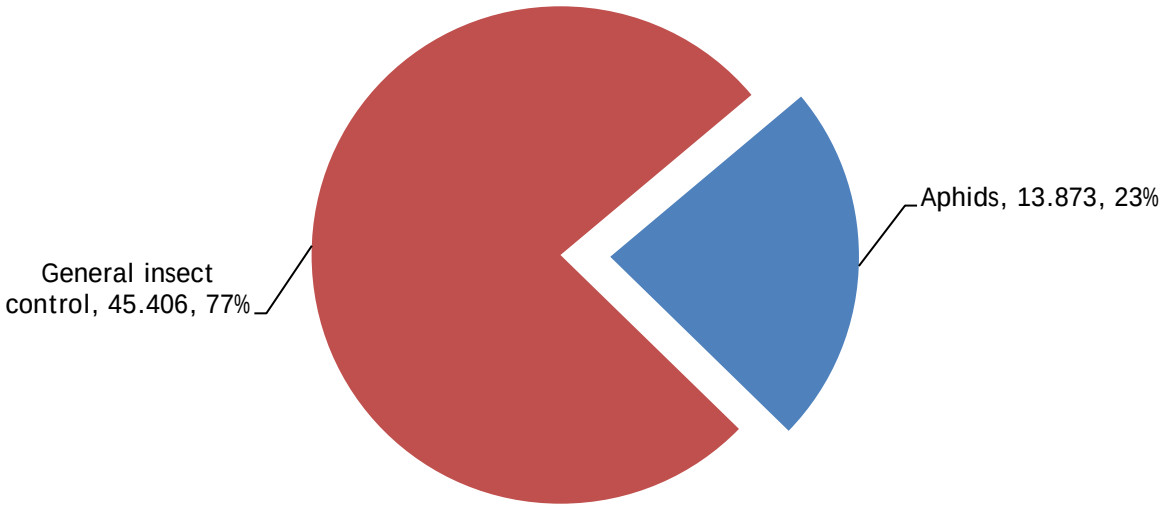


Figure 348: Lettuce: reasons for insecticide use (spha).



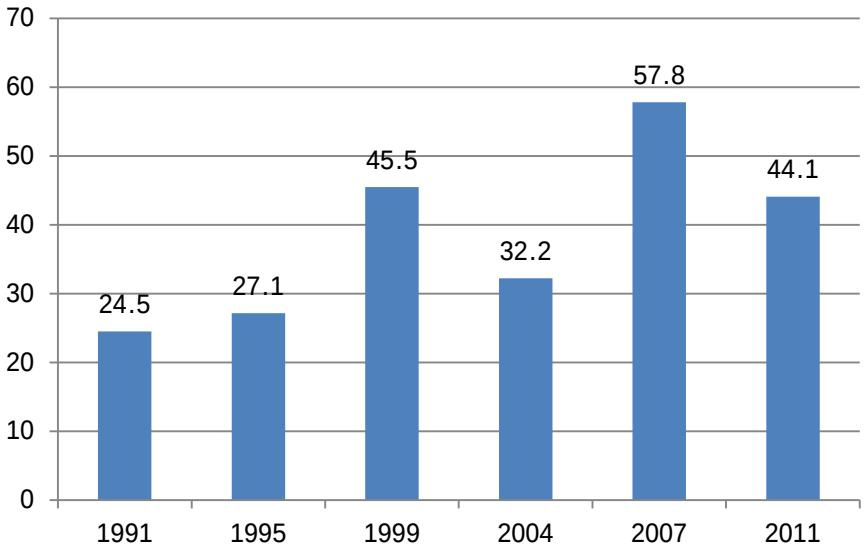
Molluscicides – lettuce

Basic area treated: 45.41 hectares
Area treated: 45.41 spray hectares
Weight of active substances applied: 6.81kg
76.5% of the area grown treated with molluscicides
All applications were for slug control
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Ferric phosphate	45.406	45.406	6.811	

Celery crops:

Figure 349: Comparison of the area of celery crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on table celery crops:

23.02 hectares of table celery crops grown in Northern Ireland

151.25 treated hectares

77.51kg applied

99.7% of crops received at least one treatment

Table celery received on average 2.4 fungicide, 1.3 herbicide, and 2.5 insecticide applications.

Figure 350: Regional distribution of table celery crops grown in Northern Ireland (ha), 2011.

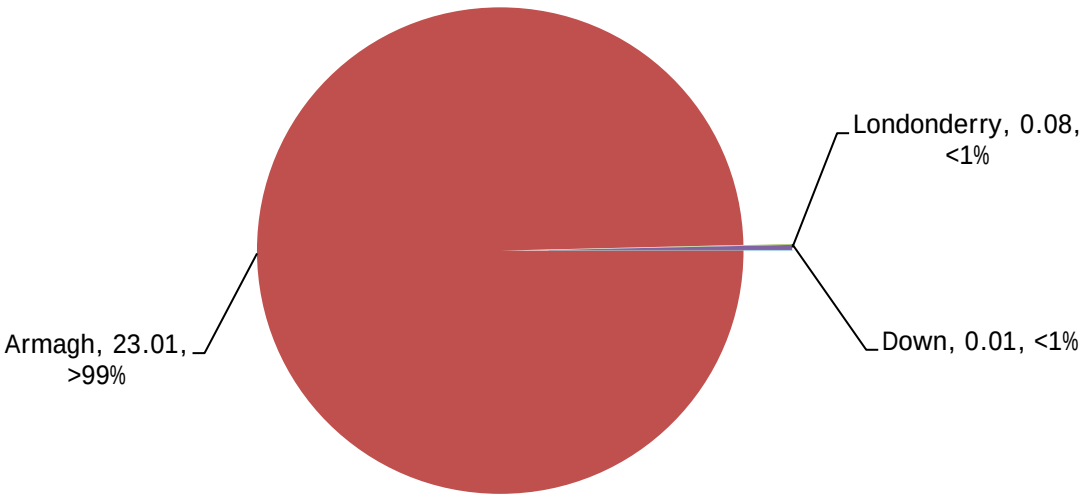


Figure 351: Pesticide usage on table celery crops in Northern Ireland (spha), 2011.

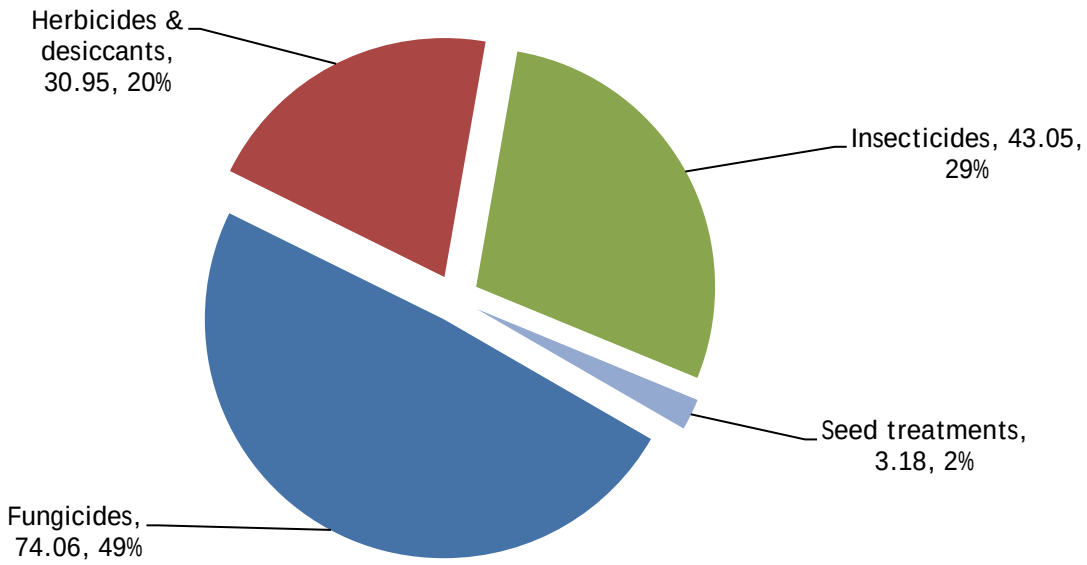


Figure 352: Weight of pesticides applied to table celery crops in Northern Ireland (kg), 2011.

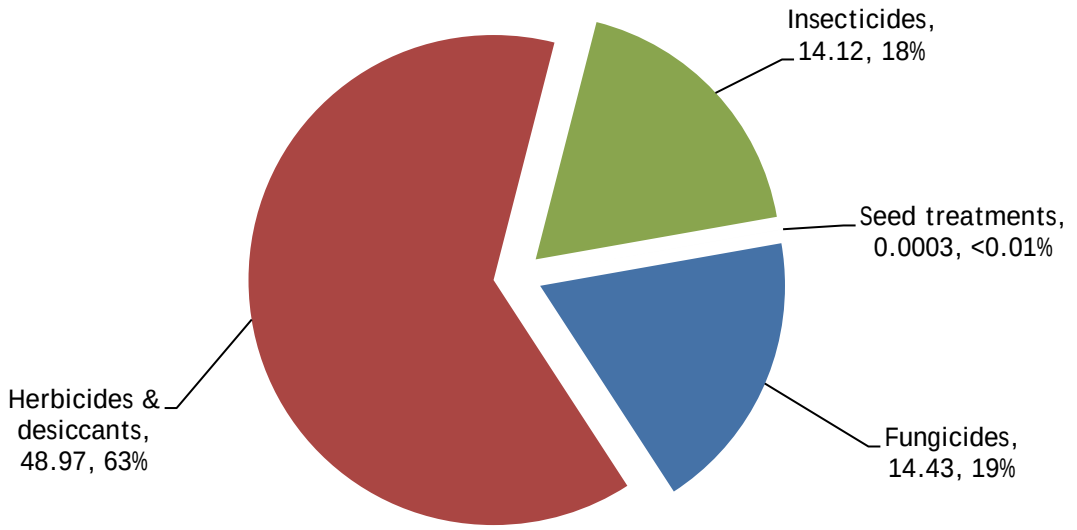
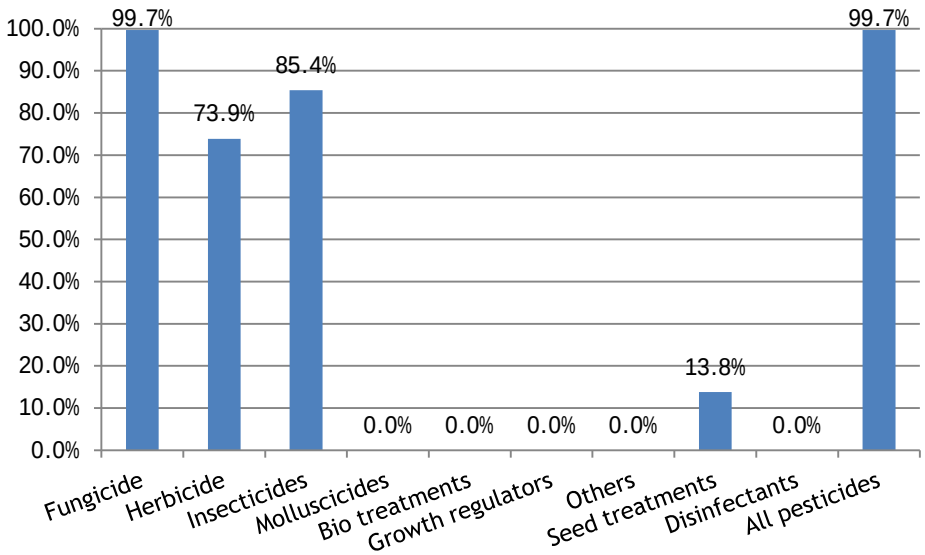


Figure 353: Proportional area of table celery crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – table celery

Basic area treated: 33.24 hectares
Area treated: 133.04 spray hectares
Weight of active substances applied: 11.73kg
86.1% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin	61.101	22.311	14.313	82.64%
Copper oxychloride	11.664	5.832	0.013	15.78%
Difenoconazole	1.174	0.587	0.088	1.59%

Figure 354: Fungicide active substance usage on table celery crops in Northern Ireland (spha), 2011.

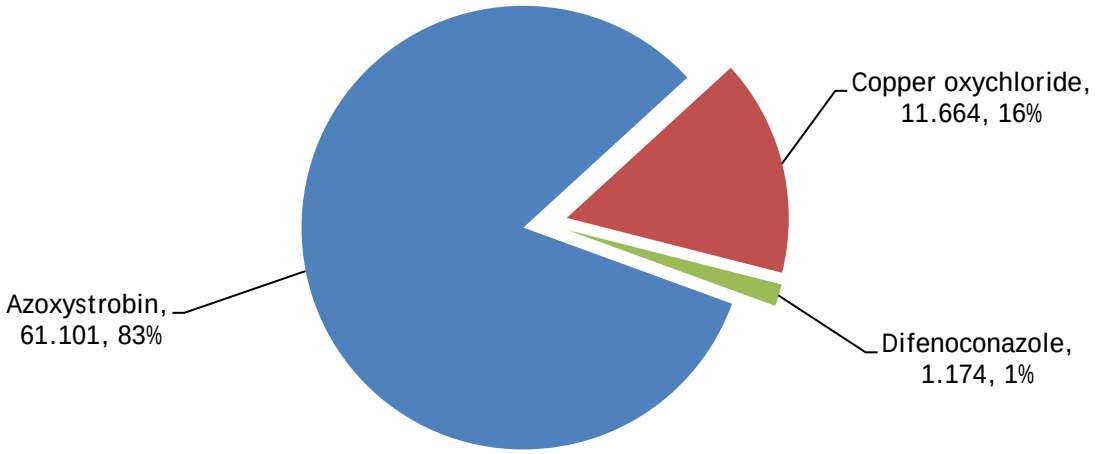


Figure 355: Weight of fungicide active substances applied to table celery crops in Northern Ireland (kg), 2011.

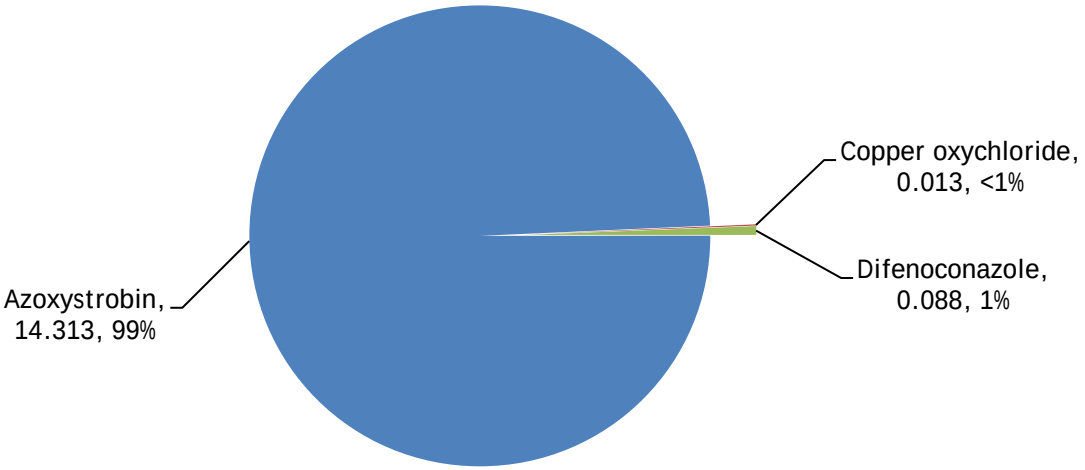
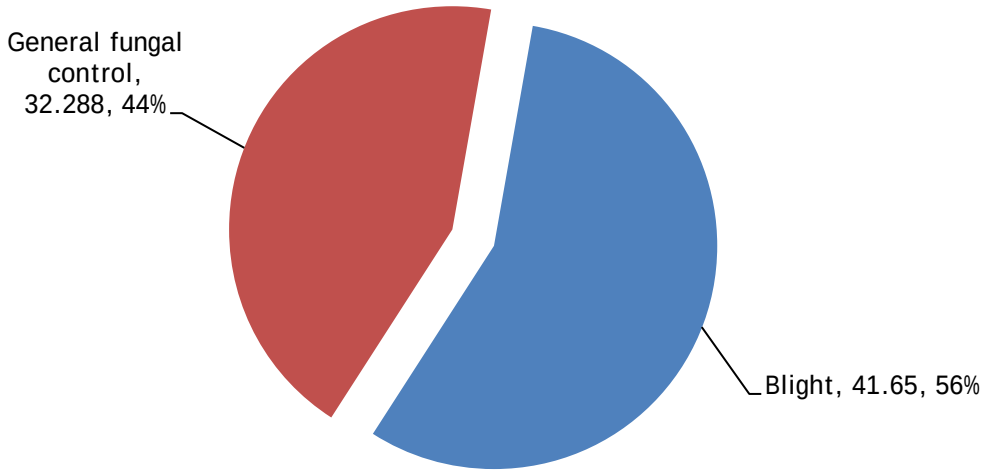


Figure 356: Table celery: reasons for fungicide use (spha).



Herbicides & desiccants – table celery

Basic area treated: 17.07 hectares
Area treated: 30.95 spray hectares
Weight of active substances applied: 48.97kg
73.9% of the area grown treated with herbicides & desiccants
All applications were for general weed control
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Linuron	17.066	17.066	4.543	55.14%
Prosulfocarb	13.883	13.883	44.427	44.86%

Figure 357: Herbicide & desiccant active substance usage on table celery crops in Northern Ireland (spha), 2011.

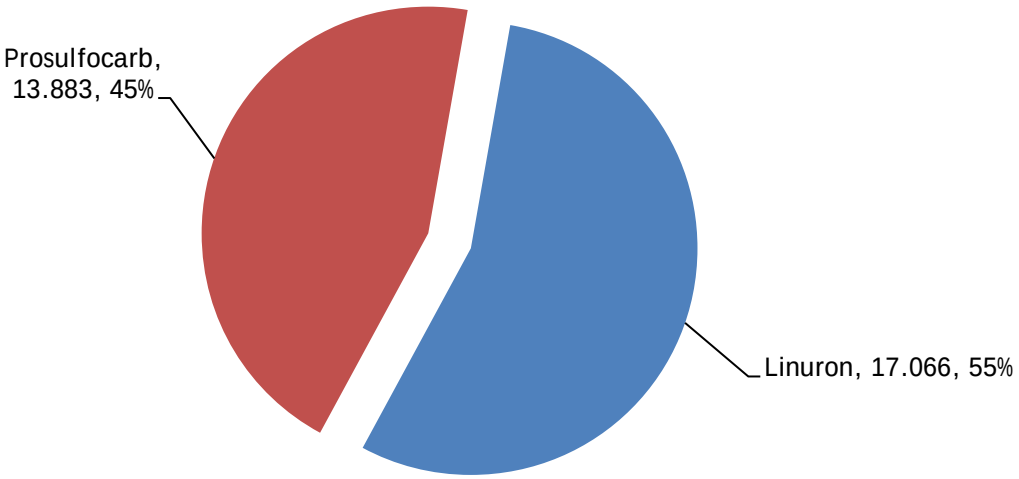
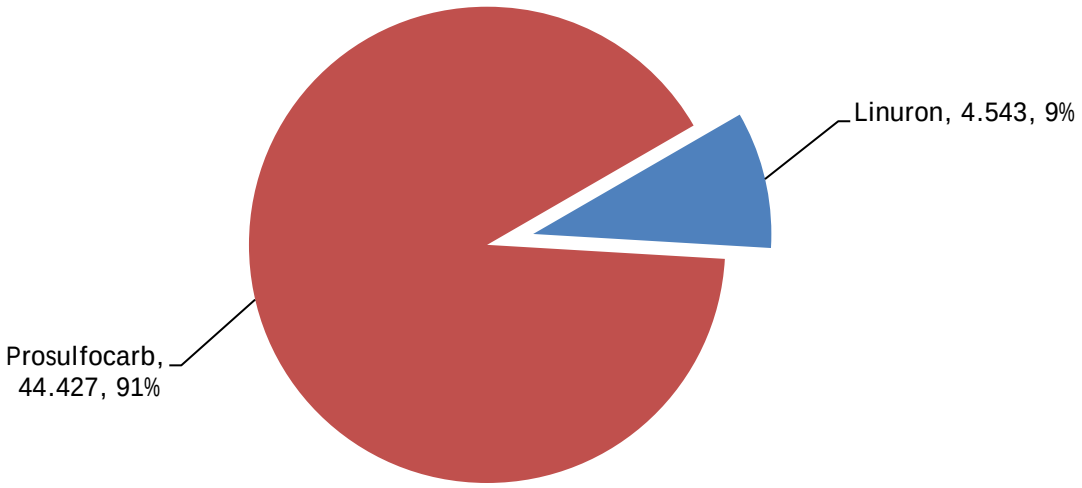


Figure 358: Weight of herbicide & desiccant active substances applied to table celery crops in Northern Ireland (kg), 2011.



Insecticides – table celery

Basic area treated: 19.73 hectares
Area treated: 43.05 spray hectares
Weight of active substances applied: 14.12kg
85.4% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pirimicarb	25.547	19.715	3.577	59.34%
Deltamethrin	5.843	5.843	0.044	13.57%
Garlic Extract	5.832	5.832	9.331	13.55%
Pymetrozine	5.832	5.832	1.166	13.55%

Figure 359: Insecticide active substance usage on table celery crops in Northern Ireland (spha), 2011.

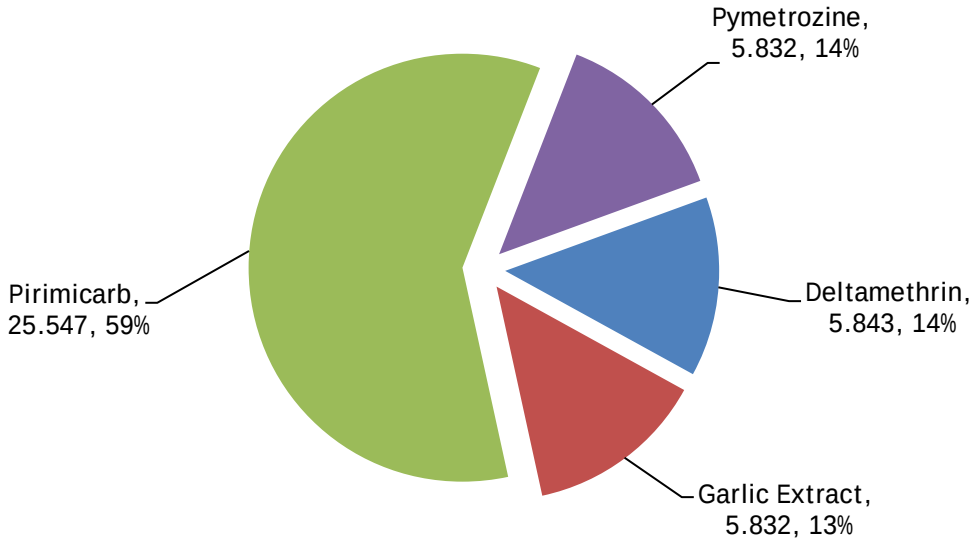


Figure 360: Weight of insecticide active substances applied to table celery crops in Northern Ireland (kg), 2011.

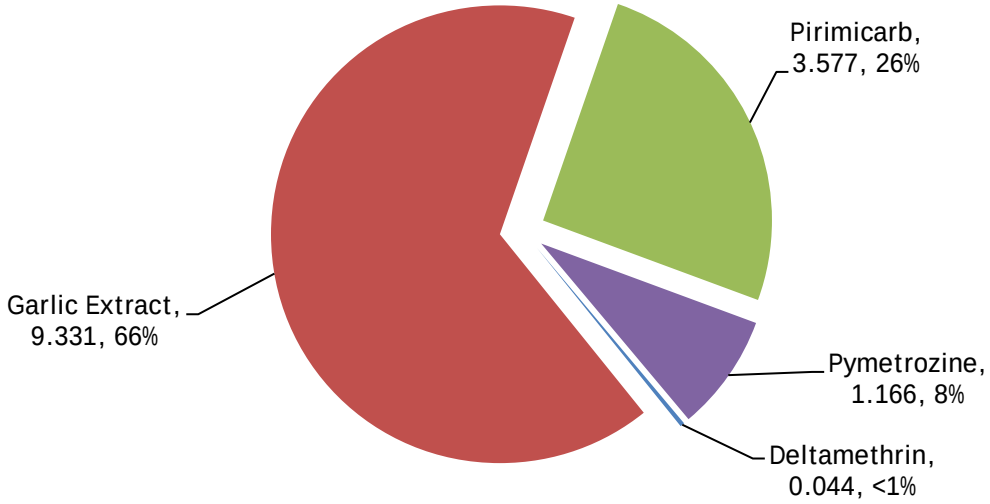
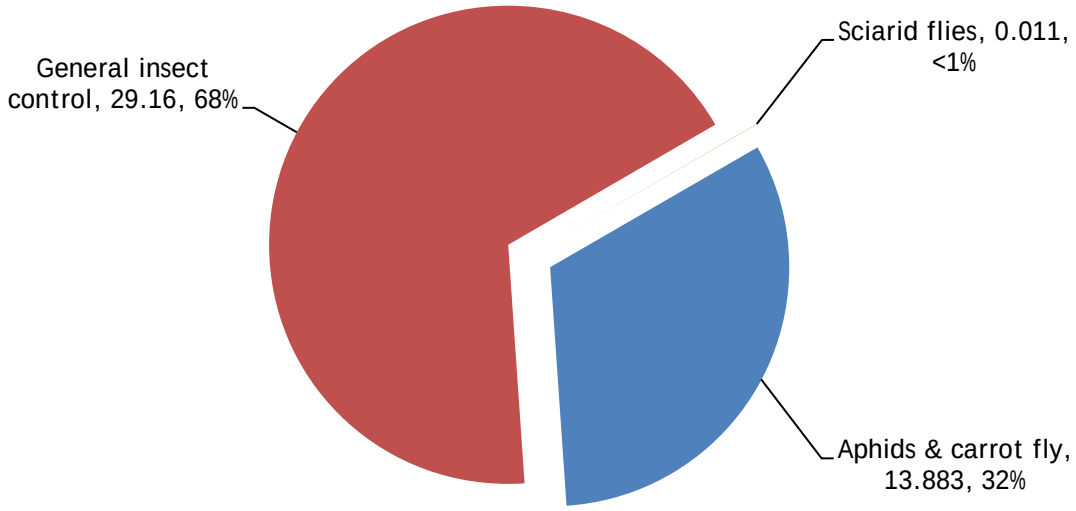


Figure 361: Table celery: reasons for insecticide use (spha).



Pesticide Usage on soup celery crops:

21 hectares of soup celery crops grown in Northern Ireland

20.92 treated hectares

89.82kg applied

99.6% of crops received at least one treatment

Soup celery received on average 2.9 fungicide, 2.8 herbicide and 2.8 insecticide applications.

Figure 362: Regional distribution of soup celery grown in Northern Ireland (ha), 2011.

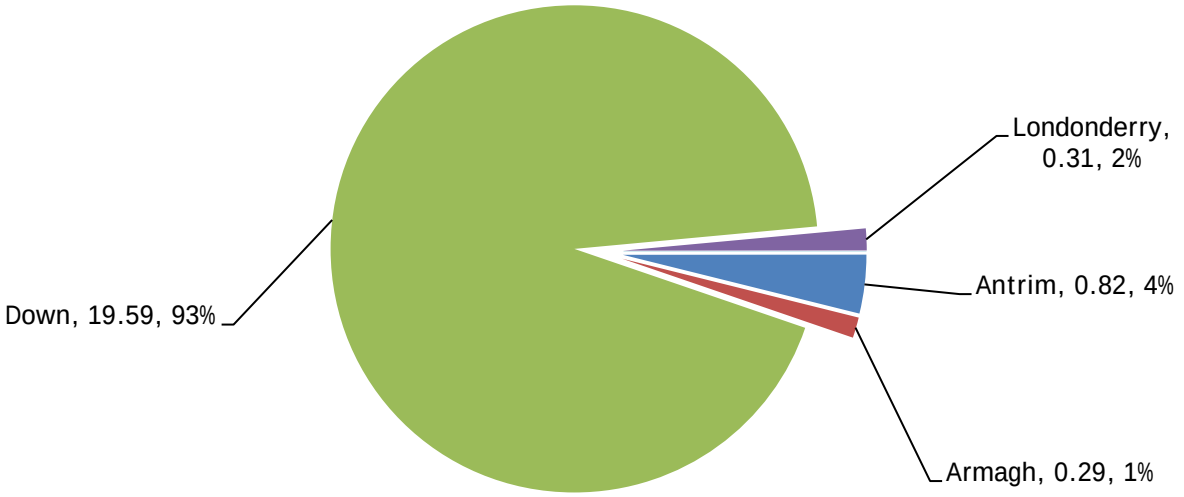


Figure 363: Pesticide usage on soup celery crops in Northern Ireland (spha), 2011.

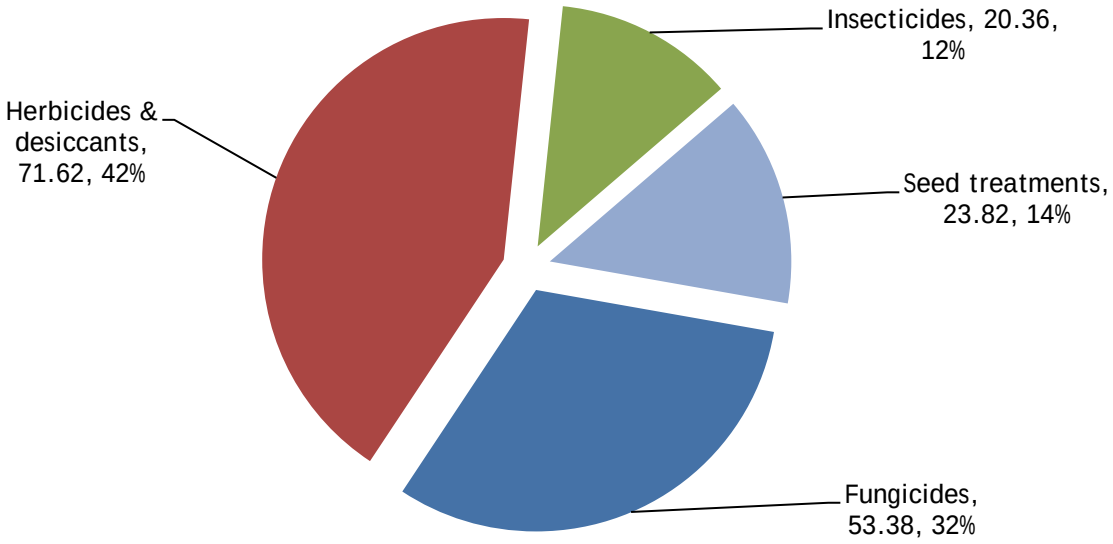


Figure 364: Weight of pesticides applied to soup celery crops in Northern Ireland (kg), 2011.

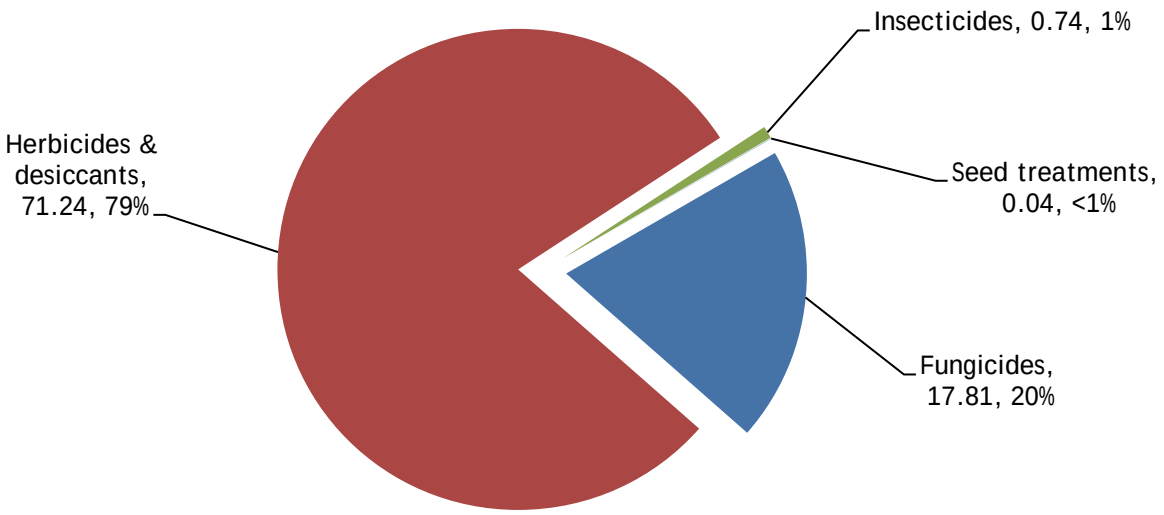
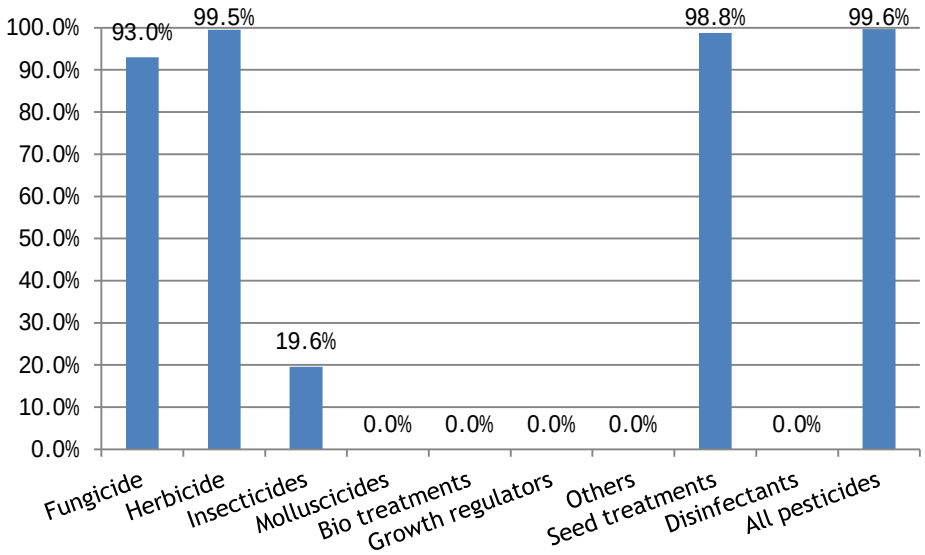


Figure 365: Proportional area of soup celery crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – soup celery

Basic area treated: 19.53 hectares
Area treated: 53.38 spray hectares
Weight of active substances applied: 17.81kg
93% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	33.591	16.36	2.552	62.96%
Azoxystrobin/difenoconazole	9.437	3.146	3.067	17.69%
Azoxystrobin	4.328	2.164	1.082	8.11%
Chlorothalonil/metalaxyl-M	4.328	2.164	4.652	8.11%
Copper oxychloride	1.386	0.462	6.029	2.60%

Figure 366: Fungicide active substance usage on soup celery crops in Northern Ireland (spha), 2011.

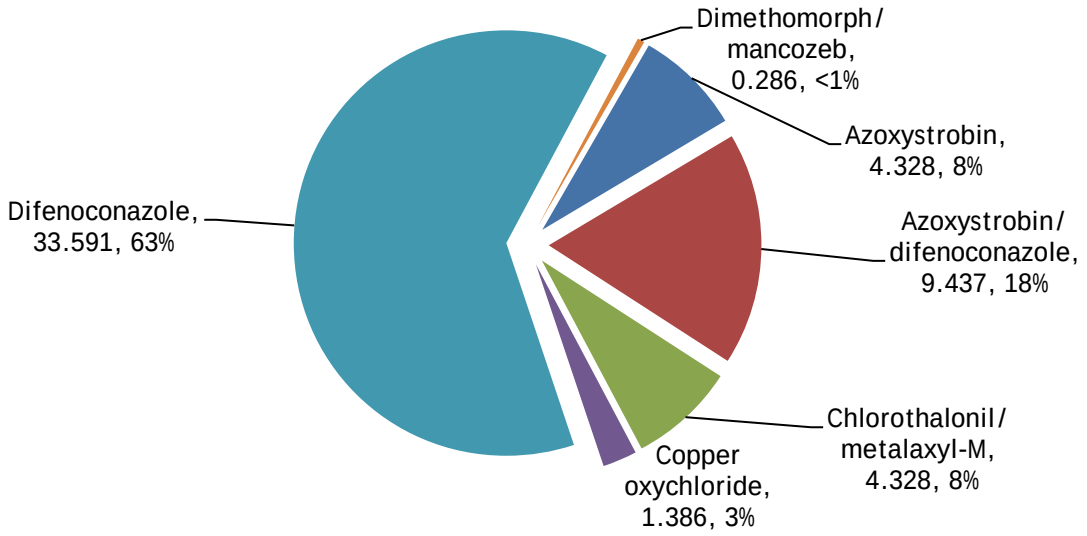


Figure 367: Weight of fungicide active substances applied to soup celery crops in Northern Ireland (kg), 2011.

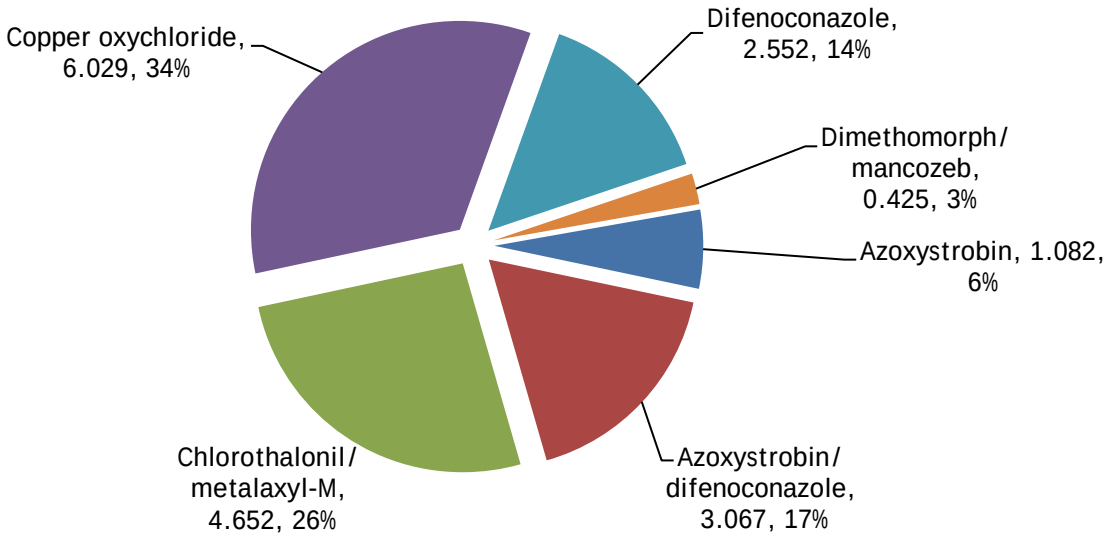
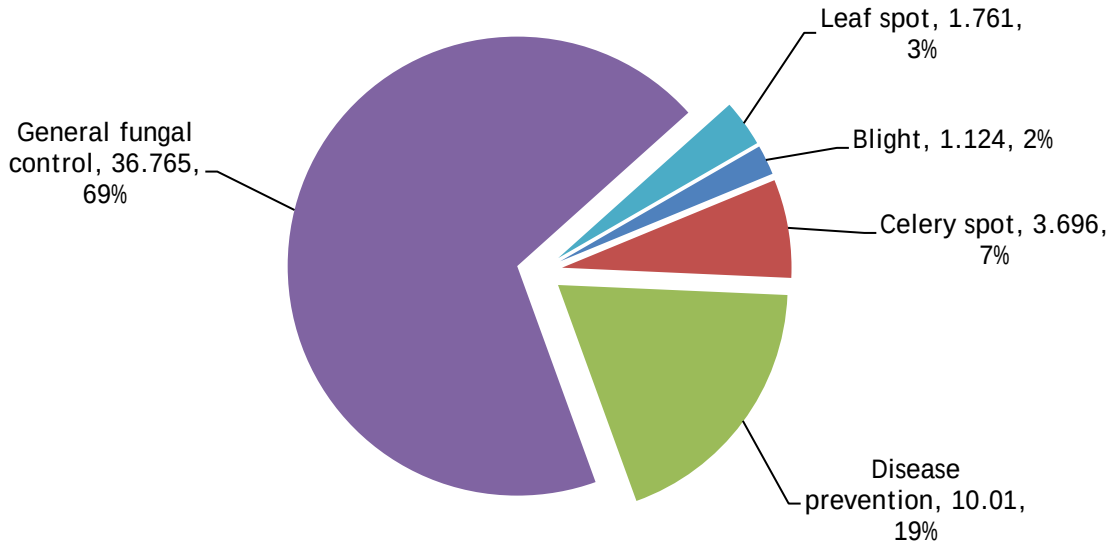


Figure 368: Soup celery: reasons for fungicide use (spha).



Herbicides & desiccants – soup celery

Basic area treated: 20.90 hectares
Area treated: 71.62 spray hectares
Weight of active substances applied: 71.24kg
99.5% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Linuron	28.249	20.896	15.207	39.44%
Pendimethalin	20.225	20.225	17.381	28.24%
Prosulfocarb	11.891	11.891	27.338	16.60%
Glyphosate	11.259	9.411	11.309	15.72%

Figure 369: Herbicide & desiccant active substance usage on soup celery crops in Northern Ireland (spha), 2011.

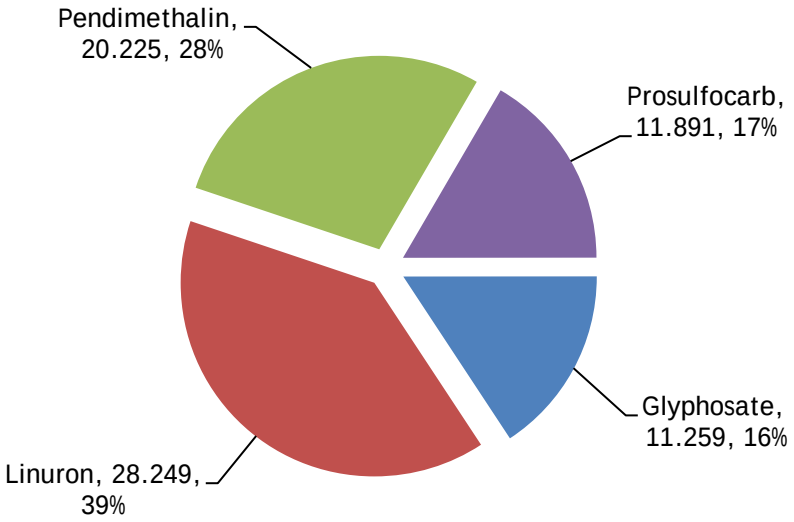


Figure 370: Weight of herbicide & desiccant active substances applied to soup celery crops in Northern Ireland (kg), 2011.

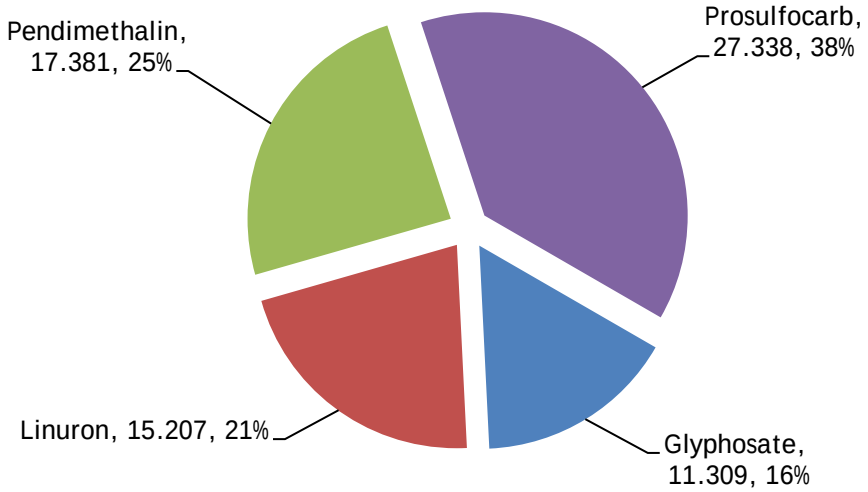
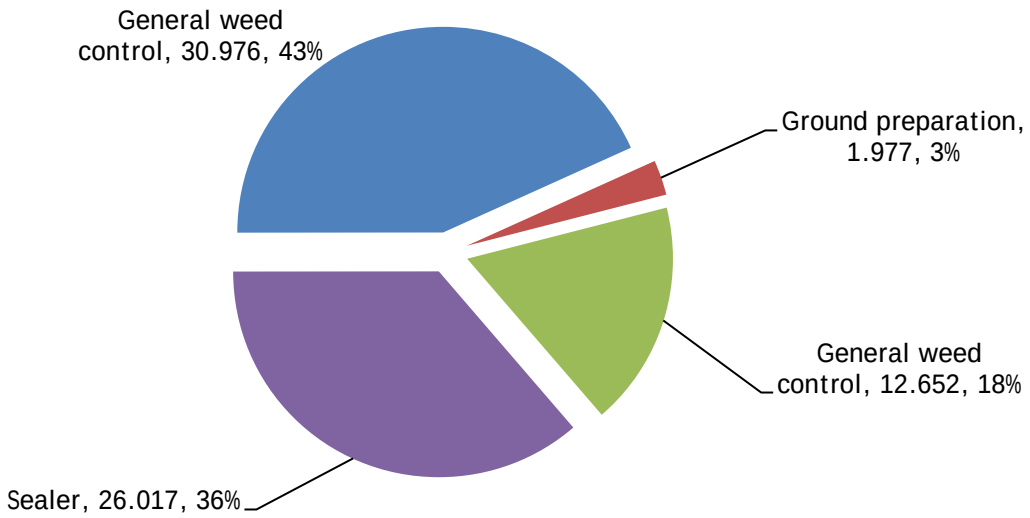


Figure 371: Soup celery: reasons for herbicide & desiccant use (spha).



Insecticides – soup celery

Basic area treated: 4.11 hectares
Area treated: 20.36 spray hectares
Weight of active substances applied: 0.74kg
19.6% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	20.104	4.084	0.282	98.75%
Oxamyl	0.231	0.231	0.456	1.13%
Deltamethrin	0.022	0.022	>1	0.11%

Figure 372: Insecticide active substance usage on soup celery crops in Northern Ireland (spha), 2011.

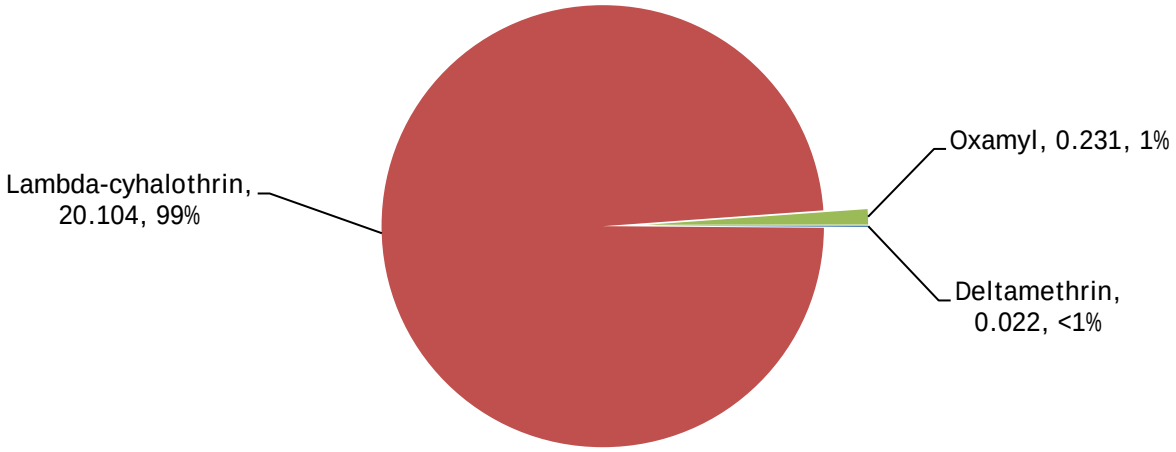


Figure 373: Weight of insecticide active substances applied to soup celery crops in Northern Ireland (kg), 2011.

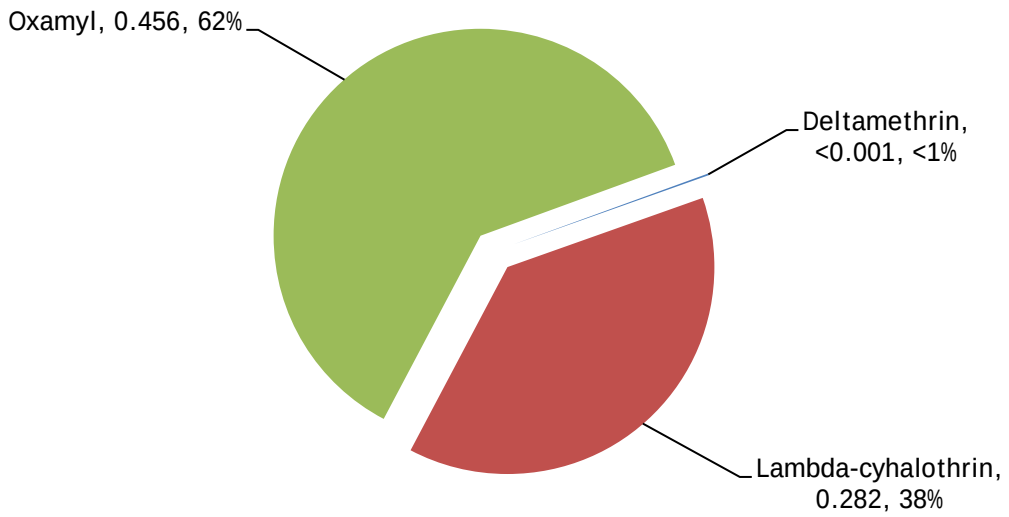
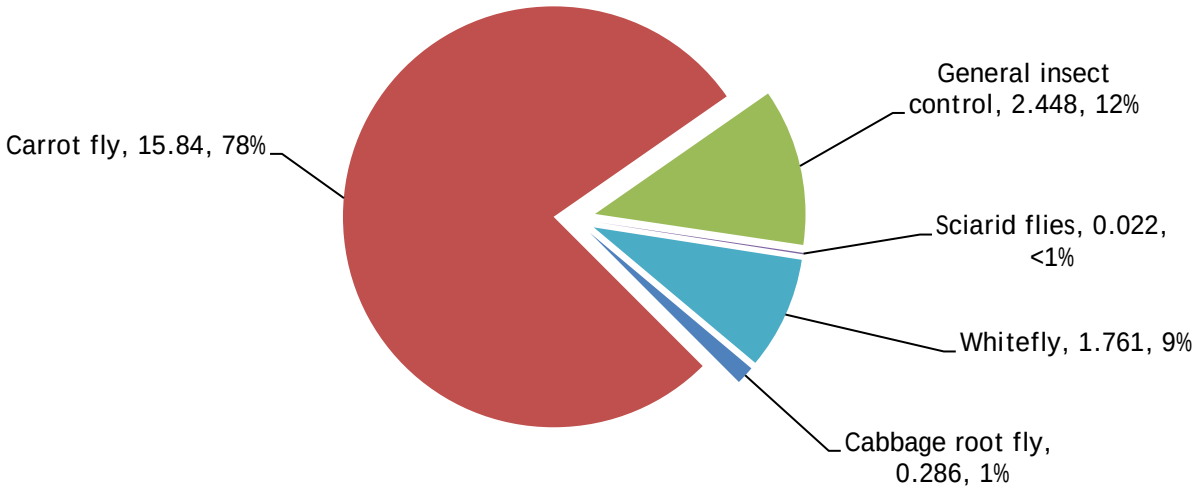
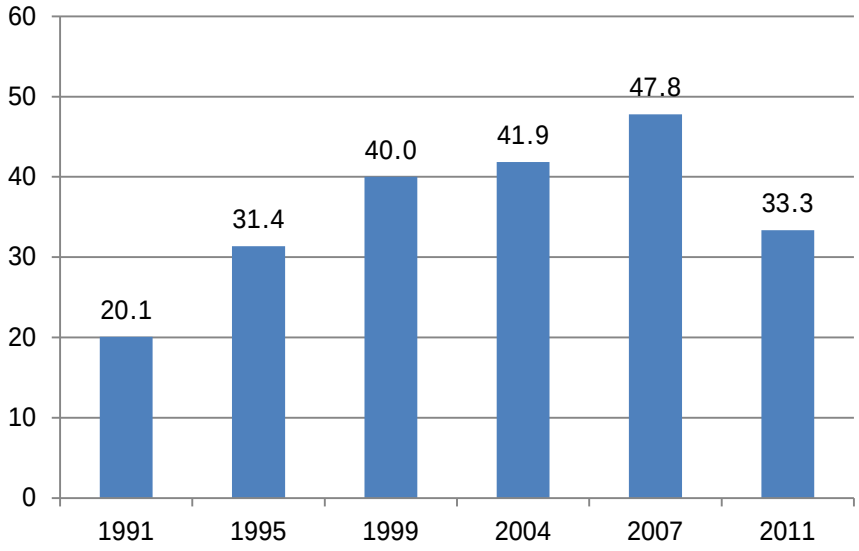


Figure 374: Soup celery: reasons for insecticide use (spha).



Parsley crops:

Figure 375: Comparison of the area of parsley crops grown in Northern Ireland (ha), 1991 - 2011.



Pesticide Usage on parsley crops:

33.35 hectares of parsley crops grown in Northern Ireland

299.50 treated hectares

150.14kg applied

100% of crops received at least one treatment

Parsley received on average 2.5 fungicide, 2.8 herbicide and 2.6 insecticide applications.

Figure 376: Regional distribution of parsley crops grown in Northern Ireland (ha), 2011.

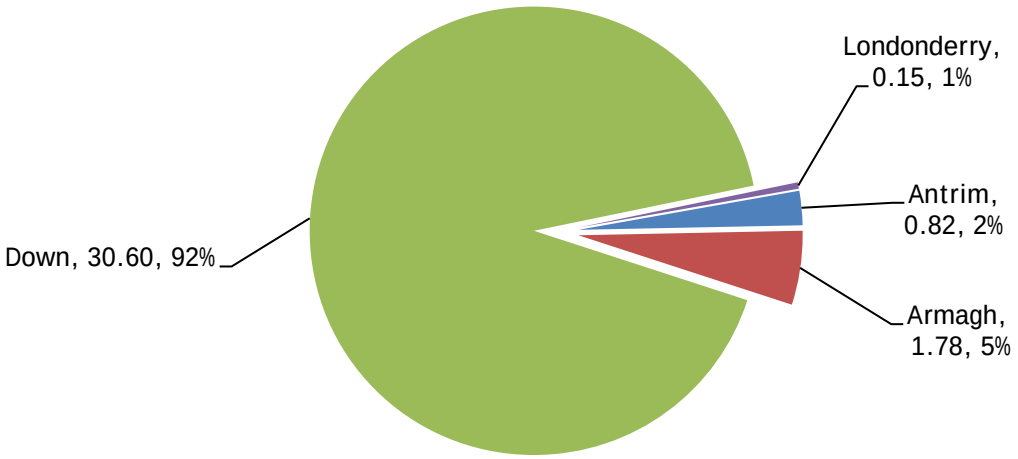


Figure 377: Pesticide usage on parsley crops in Northern Ireland (spha), 2011.

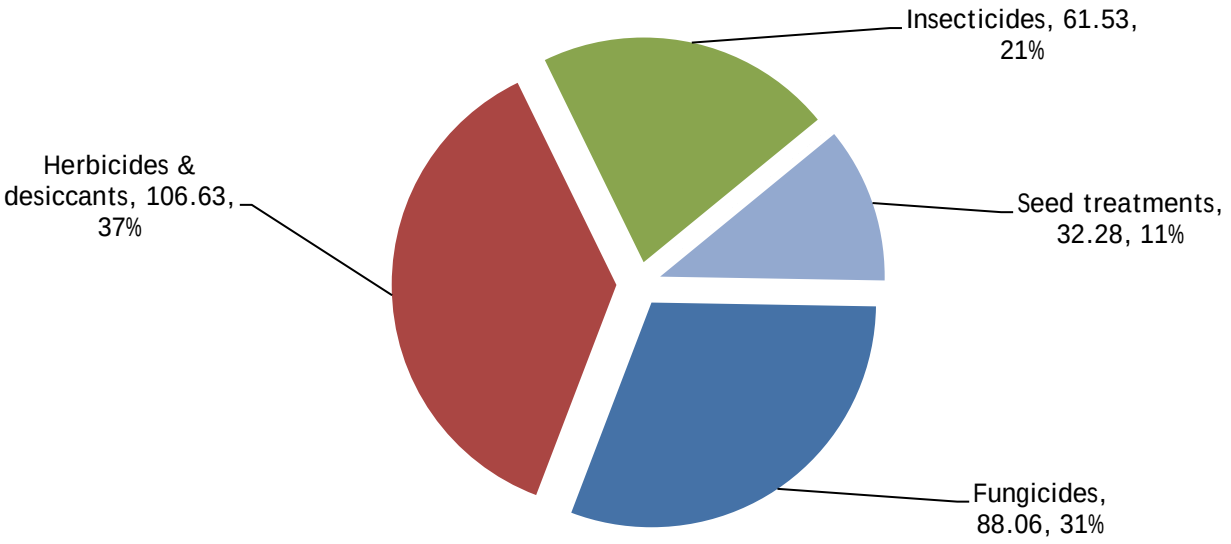


Figure 378: Weight of pesticides applied to parsley crops in Northern Ireland (kg), 2011.

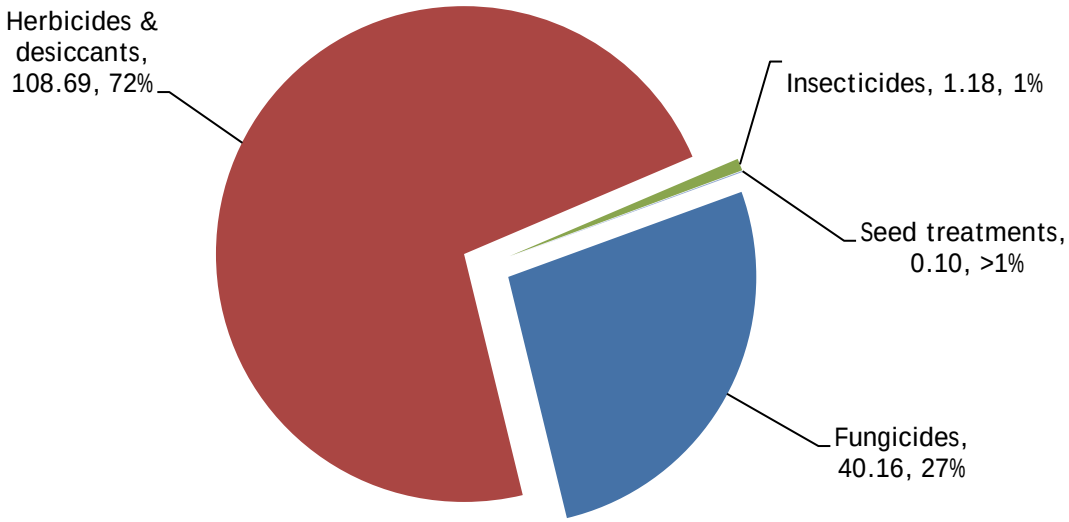
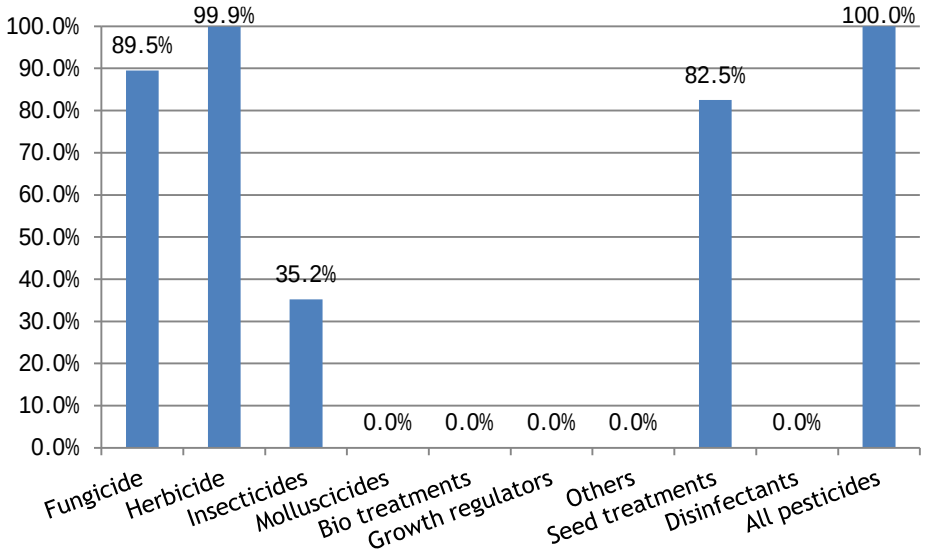


Figure 379: Proportional area of parsley crops treated with each pesticide group in Northern Ireland, 2011.



Fungicides – parsley

Basic area treated: 29.84 hectares
Area treated: 88.06 spray hectares
Weight of active substances applied: 40.16kg
89.5% of the area grown treated with fungicides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Boscalid/pyraclostrobin	2142.50%	1071.20%	715.60%	24.34%
Epoxiconazole	1950.70%	650.20%	243.80%	22.16%
Difenoconazole	1538.20%	770.50%	115.40%	17.48%
Dimethomorph/mancozeb	942.60%	826.70%	1398.90%	10.71%
Mancozeb/metalaxyl-M	853.90%	853.90%	1101.30%	9.70%

Figure 380: Fungicide active substance usage on parsley crops in Northern Ireland (spha), 2011.

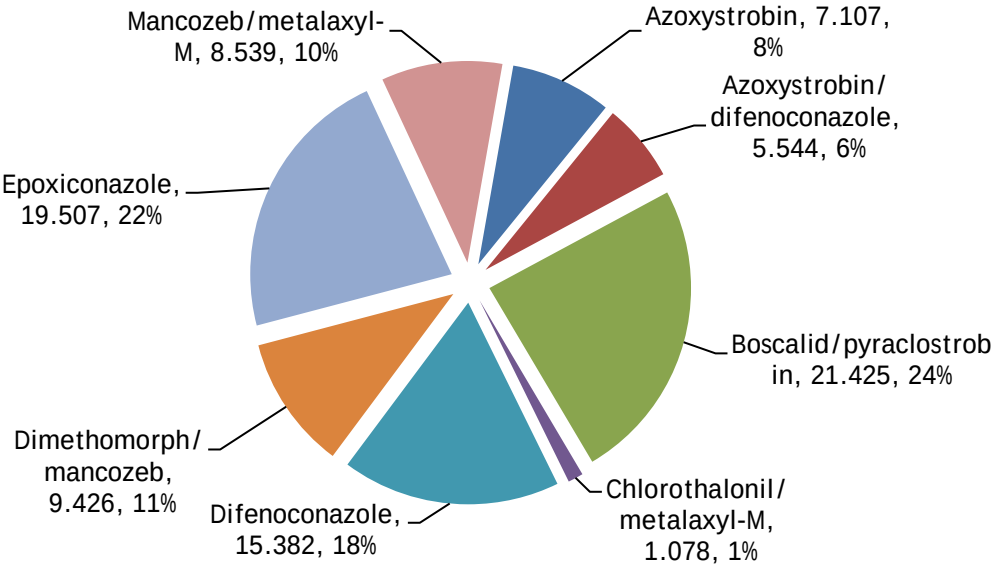


Figure 381: Weight of fungicide active substances applied to parsley crops in Northern Ireland (kg), 2011.

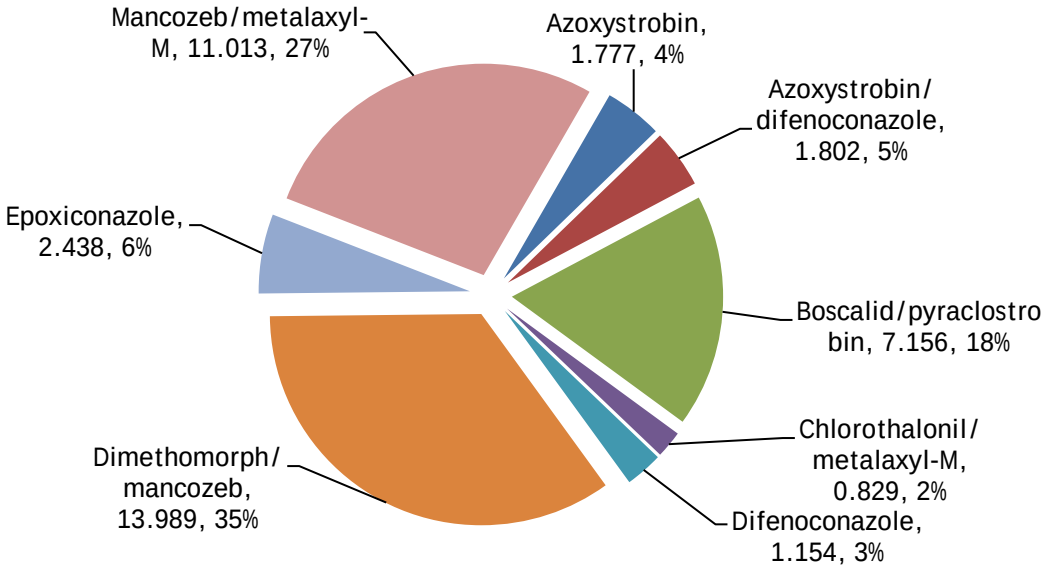
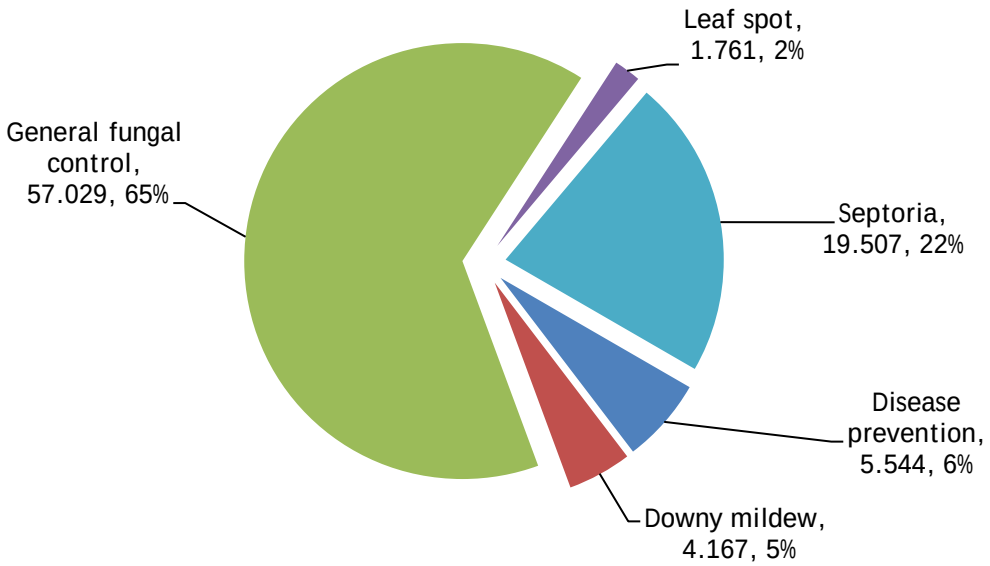


Figure 382: Parsley: reasons for fungicide use (spha).



Herbicides & desiccants – Parsley

Basic area treated: 33.32 hectares
Area treated: 106.63 spray hectares
Weight of active substances applied: 108.69kg
99.9% of the area grown treated with herbicides & desiccants
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Linuron	3998.40%	3270.80%	2115.50%	37.50%
Pendimethalin	3093.30%	3093.30%	2814.10%	29.01%
Glyphosate	1789.00%	1604.20%	2334.20%	16.78%
Prosulfocarb	1782.00%	1782.00%	3605.60%	16.71%

Figure 383: Herbicide & desiccant active substance usage on parsley crops in Northern Ireland (spha), 2011.

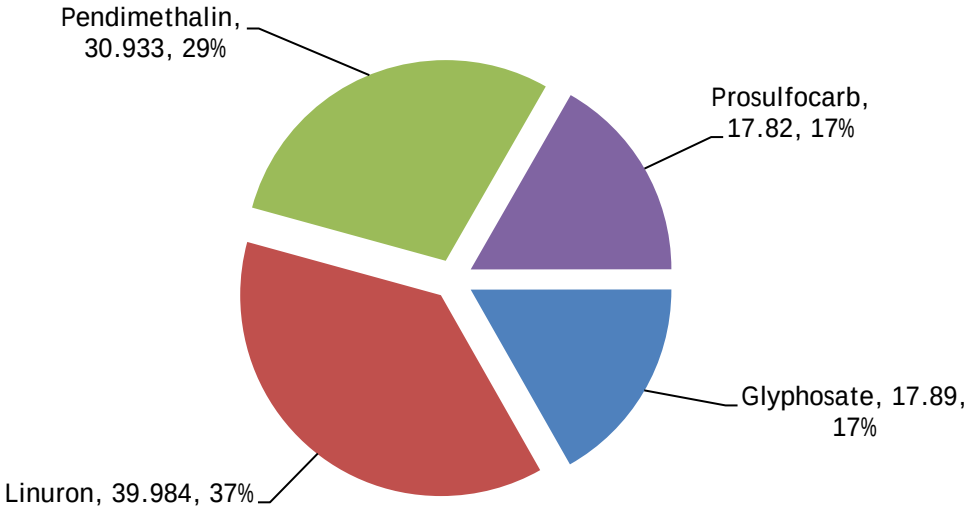


Figure 384: Weight of herbicide & desiccant active substances applied to parsley crops in Northern Ireland (kg), 2011.

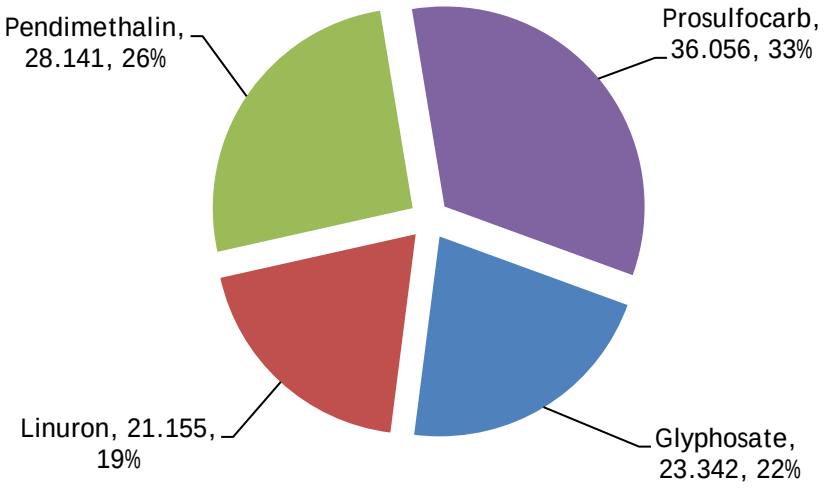
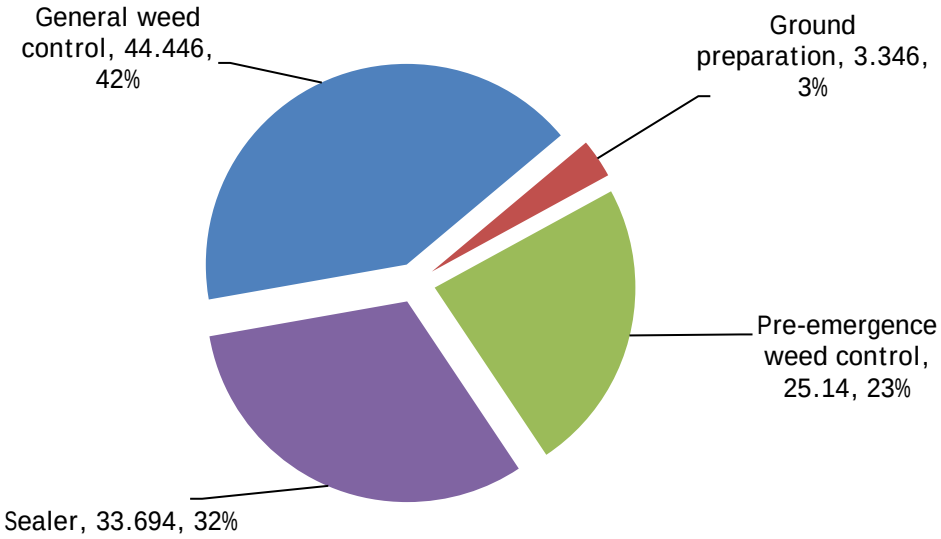


Figure 385: Parsley: reasons for herbicide & desiccant use (spha).



Insecticides – parsley

Basic area treated: 11.74hectares
Area treated: 61.53 spray hectares
Weight of active substances applied: 1.18kg
35.2% of the area grown treated with insecticides
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	6091.70%	1128.10%	86.50%	99.00%
Cypermethrin	46.20%	46.20%	1.50%	0.75%
Oxamyl	15.40%	15.40%	30.40%	0.25%

Figure 386: Insecticide active substance usage on parsley crops in Northern Ireland (spha), 2011.

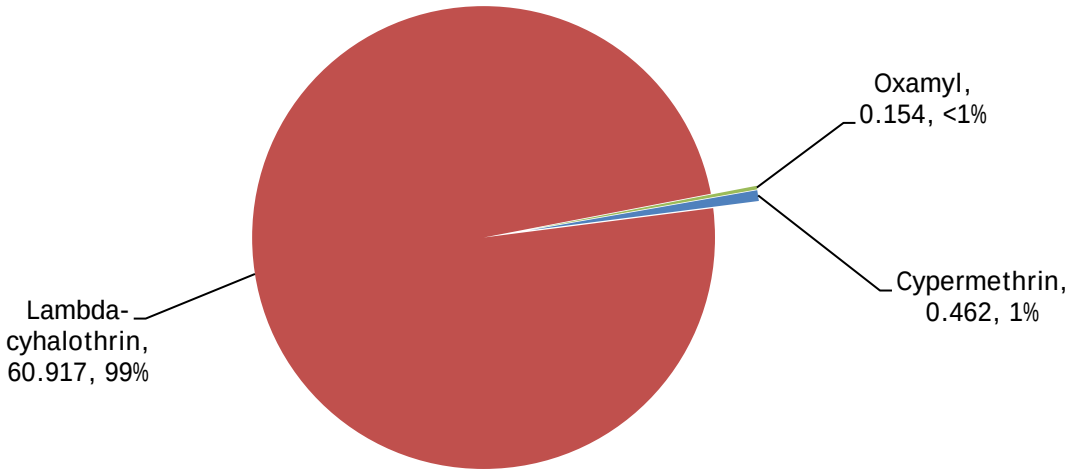


Figure 387: Weight of insecticide active substances applied to parsley crops in Northern Ireland (kg), 2011.

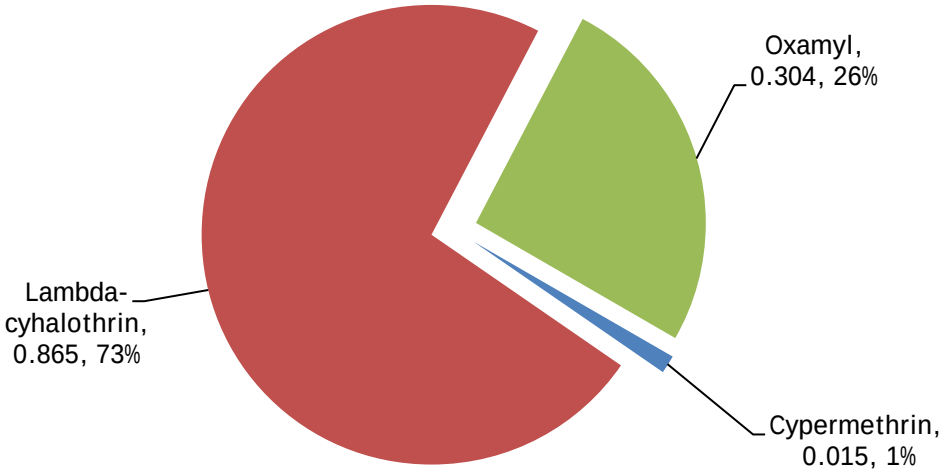
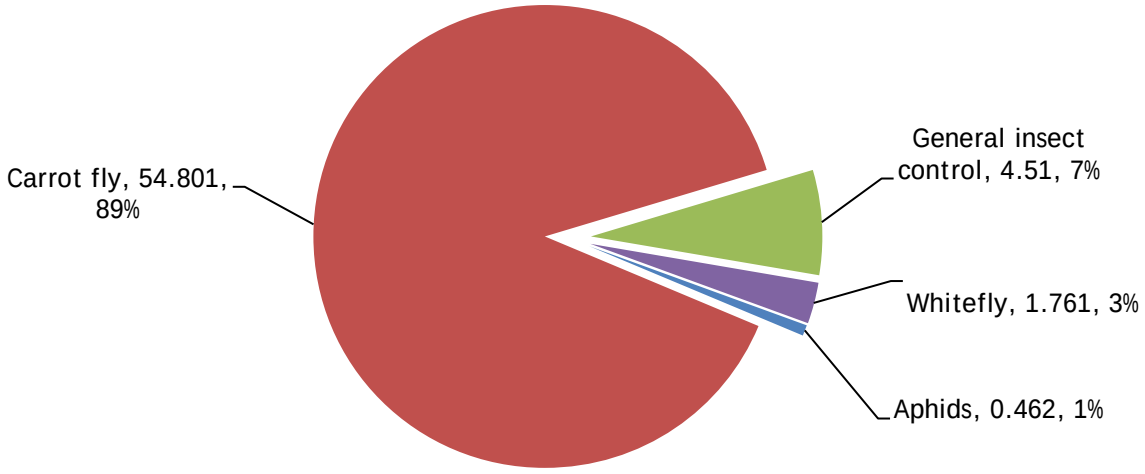


Figure 388: Parsley: reasons for insecticide use (spha).



Pesticide Usage on celeriac crops:

0.01 hectares of celeriac crops grown in Northern Ireland all of which grown in County Down

0.01 treated hectares

0.0022kg applied

100% of crops received at least one treatment

Celeriac crops received on average 1.0 fungicide application.

Table 1: **The total number of farms in each size group with vegetable crops in the June 2011 census and number of samples from each size group.**

	Size group (hectares)									
	< 5		**5<15**		**15 < 40**		**40+**		**Total**	
County	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**
Antrim	9	2	3	2	3	1	0	0	15	5
Armagh	10	7	5	3	2	2	4	2	21	14
Down	19	9	11	6	10	7	9	10	49	32
Fermanagh	3	0	0	0	0	0	0	0	3	0
Londonderry	4	3	1	1	2	1	0	0	7	5
Tyrone	5	3	2	2	0	0	0	0	7	5
Northern Ireland	***50***	***24***	***22***	***14***	***17***	***11***	***13***	***12***	***102***	***61***

Legend

A = Total number of holdings in strata

B = Number of holdings surveyed

Table 2: Total number and area of crops surveyed (hectares) in Northern Ireland, 2011.

Crop	*Number of Crops Surveyed*	*Surveyed area (ha)*
Broccoli & calabrese	26	79.6
Brussels sprout	17	44.1
Autumn cabbage	5	1.3
Spring cabbage	12	12.7
Winter cabbage	5	12.2
Summer cabbage	10	13.0
Savoy cabbage	37	91.7
White cabbage	11	39.2
Red cabbage	10	10.0
Autumn cauliflower	12	19.1
Summer cauliflower	21	29.4
Winter cauliflower	9	19.8
Kale	1	0.6
Peas (not for animals)	2	11.3
Broad bean	3	1.7
Courgette	1	0.0002
Pumpkin	1	0.0015
Carrot	43	285.3
Parsnip	27	140.1
Turnip & swede	17	212.8
Beetroot	11	5.8
Bulb onion	1	12.2
Summer scallion	14	22.6
Winter scallion	3	1.36
Soup leeks	13	20.9
Table leeks	23	62.4
Lettuce	3	41.4
Table celery	7	18.8
Soup celery	15	17.7
Parsley	17	28.6
Celeriac	1	0.009
Organic crops	4	3.63
All crops	***378***	***1,255.7***

Table 3: Estimated area (hectares) of vegetable crops grown regionally in Northern Ireland, 2011.

	County					
Crop type	Antrim	Armagh	Down	Londonderry	Tyrone	Northern Ireland
Broccoli & calabrese	.	15.64	79.52	.	1.16	96.32
Brussels sprout	0.63	17.93	34.29	0.15	1.86	54.87
Autumn cabbage	.	.	2.11	.	.	2.11
Spring cabbage	.	3.44	15.89	.	0.62	19.95
Winter cabbage	.	.	19.23	.	.	19.23
Summer cabbage	.	4.95	9.50	1.60	0.31	16.36
Savoy cabbage	0.76	7.82	101.64	2.06	9.35	121.63
White cabbage	.	1.16	49.85	.	.	51.01
Red cabbage	0.82	.	11.31	0.08	.	12.20
Autumn cauliflower	.	1.54	20.89	.	.	22.42
Summer cauliflower	.	2.01	35.58	0.15	0.87	38.62
Winter cauliflower	.	0.20	24.77	0.15	.	25.12
Kale	0.87	.	.	.	.	0.87
Pea (not for animals)	14.46	.	1.30	.	.	15.75
Broad bean	0.57	.	1.45	.	.	2.02
Courgette	.	.	0.0002	.	.	0.0002
Pumpkin	.	.	0.0023	.	.	0.0023
Carrot	0.86	66.10	225.27	47.97	12.93	353.13
Parsnip	2.16	7.76	153.24	1.48	1.78	166.41
Turnip & swede	32.04	57.08	157.92	0.31	6.00	253.35
Beetroot	0.76	0.35	7.05	.	.	8.16
Bulb onion	.	.	.	17.39	.	17.39
Summer scallions	0.97	2.75	23.50	0.08	.	27.30
Winter scallions	.	.	1.45	0.08	.	1.53
Soup leek	4.01	4.05	17.64	0.08	.	25.77
Table leek	.	4.45	67.44	0.23	6.30	78.42
Lettuce	.	59.35	.	.	.	59.35
Table celery	.	23.01	0.01	0.08	.	23.10
Soup celery	0.82	0.29	19.59	0.31	.	21.00
Parsley	0.82	1.78	30.60	0.15	.	33.35
Celeriac	.	.	0.01	.	.	0.01
Organic crops	0.81	.	1.62	0.80	0.40	3.63
All vegetable crops	***60.54***	***281.63***	***1,111.04***	***72.36***	***41.18***	***1,566.75***

Table 4: **Estimated area (spray hectares) of vegetable crops treated regionally in Northern Ireland with each pesticide type.**

	County					
Pesticide type	Antrim	Armagh	Down	Londonderry	Tyrone	Northern Ireland
Fungicides	37.84	307.05	2,900.48	188.47	52.68	3,486.51
Herbicides	135.80	800.49	3,893.44	325.05	78.33	5,233.11
Insecticides	18.47	414.39	3,058.05	143.19	62.97	3,697.07
Molluscicides	.	45.57	44.37	.	1.86	91.80
Biological controls	.	.	2.58	.	.	2.58
Growth regulators	2.16	.	13.02	.	.	15.17
Seed treatments	44.06	171.84	781.42	50.76	20.71	1,068.78
Disinfectants	.	.	0.18	.	.	0.18
All pesticides	***238.32***	***1,739.34***	***10,693.54***	***707.48***	***216.55***	***13,595.22***

Table 4b: **Estimated weight (kgs) of pesticide applied regionally in Northern Ireland with each pesticide type.**

	County					
Pesticide type	Antrim	Armagh	Down	Londonderry	Tyrone	Northern Ireland
Fungicides	25.04	147.08	1,178.98	146.57	17.40	1,515.06
Herbicides	164.99	698.17	3,370.37	231.25	68.13	4,532.90
Insecticides	0.66	231.51	703.85	109.17	34.74	1,079.92
Molluscicides	.	6.83	5.34	.	0.23	12.41
Biological controls	.	.	.	.	.	.
Growth regulators	10.78	.	78.09	.	.	88.87
Seed treatments	0.19	3.89	9.51	2.67	0.74	16.99
Disinfectants	.	.	40.31	.	.	40.31
All pesticides	***201.64***	***1,087.48***	***5,386.46***	***489.65***	***121.23***	***7286.46***

Table 5: **The total area (spray hectares) and the basic area (hectares), of vegetable crops in Northern Ireland 2011 treated with each pesticide type.**

	Pesticide Type																	
	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Biological controls		Growth regulators		Seed treatments		Disinfectants		All pesticides	
Crop type	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)
Broccoli & calabrese	200.50	50.54	267.92	89.17	294.12	75.41	.	.	0.64	0.64	.	.	.	.	.	.	763.18	89.90
Brussels sprout	247.85	54.60	120.87	54.55	179.84	54.64	2.60	2.60	0.28	0.28	.	.	.	.	0.18	0.18	551.62	54.72
Autumn cabbage	4.91	2.11	2.73	2.09	2.45	2.11	.	.	0.01	0.01	.	.	.	.	.	.	10.10	2.11
Spring cabbage	35.42	18.59	48.71	19.25	30.82	18.59	.	.	0.08	0.08	.	.	11.33	11.33	.	.	126.36	19.33
Winter cabbage	33.48	16.34	54.43	19.11	28.94	19.23	.	.	0.11	0.11	.	.	.	.	.	.	116.96	19.23
Summer cabbage	33.16	12.53	48.05	15.66	44.24	16.05	.	.	0.08	0.08	.	.	.	.	.	.	125.54	16.36
Savoy cabbage	247.98	86.60	238.69	101.06	272.30	96.38	0.04	0.04	0.57	0.57	.	.	0.31	0.31	.	.	759.87	101.98
White cabbage	198.74	47.70	102.45	48.61	184.54	48.81	.	.	0.20	0.20	.	.	.	.	.	.	485.92	48.86
Red cabbage	3.49	1.54	11.69	9.90	1.70	1.52	.	.	0.06	0.06	.	.	.	.	.	.	16.94	9.98
Autumn cauliflower	105.38	19.41	68.69	22.39	115.23	21.26	.	.	0.03	0.03	.	.	.	.	.	.	289.32	22.42
Summer cauliflower	133.04	33.24	93.79	37.81	138.35	36.85	.	.	0.33	0.33	.	.	.	.	.	.	365.51	38.47
Winter cauliflower	104.22	24.77	71.19	24.75	125.14	22.05	.	.	0.19	0.19	.	.	.	.	.	.	300.74	24.97
Kale	0.87	0.87	2.62	0.87	1.75	0.87	.	.	.	.	.	.	.	.	.	.	5.24	0.87
Pea (not for animals)	1.30	1.30	31.51	15.75	1.30	1.30	.	.	.	.	.	.	.	.	.	.	34.10	15.75

Table 5 (cont.): **The total area (spray hectares) and the basic area (hectares), of vegetable crops in Northern Ireland 2011 treated with each pesticide type.**

	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Biological controls		Growth regulators		Seed treatments		Disinfectants		All pesticides	
Crop type	**(sp ha)**	**(ha)**	**(sp ha)**	**(ha)**	**(sp ha)**	**(ha)**	**(sp ha)**	**(ha)**	**(sp ha)**	**(ha)**	**(sp ha)**	**(ha)**	**(sp ha)**	**(ha)**	**(sp ha)**	**(ha)**	**(sp ha)**	**(ha)**
Broad bean	1.45	1.45	3.89	2.02	2.02	2.02	.	.	.	.	.	.	0.15	0.15	.	.	7.52	2.02
Courgette	0.0002	0.0002	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.0002	0.0002
Pumpkin	0.0023	0.0023	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.0023	0.0023
Carrot	831.69	255.70	1,741.95	353.11	1,060.15	353.11	0.31	0.31	.	.	.	.	440.15	344.44	.	.	4,074.25	353.11
Parsnips	510.48	127.93	726.45	166.28	627.00	165.03	0.06	0.06	.	.	15.17	15.17	173.72	122.94	.	.	2,052.88	166.28
Turnip & swede	0.46	0.46	493.13	227.54	356.62	166.59	43.39	43.39	.	.	.	.	227.54	227.54	.	.	1,121.14	227.85
Beetroot	3.69	3.69	23.17	8.31	.	.	.	.	.	.	.	.	8.74	8.12	.	.	35.60	8.31
Bulb onion	104.36	17.39	121.75	17.39	.	.	.	.	.	.	.	.	.	.	.	.	226.11	17.39
Summer scallion	45.17	22.49	119.45	27.22	.	.	.	.	.	.	.	.	27.22	27.22	.	.	191.84	27.22
Winter scallion	1.54	0.15	4.35	1.45	.	.	.	.	.	.	.	.	1.45	1.45	.	.	7.34	1.45
Soup leek	109.37	25.64	139.80	25.38	0.60	0.60	.	.	.	.	.	.	25.10	25.10	.	.	274.87	25.98
Table leek	193.90	70.26	336.54	78.23	0.27	0.27	.	.	.	.	.	.	48.38	48.38	.	.	579.09	78.50
Lettuce	118.56	59.28	150.09	59.28	104.76	59.35	45.41	45.41	.	.	.	.	45.41	45.41	.	.	464.22	59.35
Table celery	74.06	23.02	30.95	17.07	43.05	19.73	.	.	.	.	.	.	3.18	3.18	.	.	151.25	23.02
Soup celery	53.38	19.53	71.62	20.90	20.36	4.11	.	.	.	.	.	.	23.82	20.74	.	.	169.18	20.92
Parsley	88.06	29.84	106.63	33.32	61.53	11.74	.	.	.	.	.	.	32.28	27.51	.	.	288.50	33.35
Celeriac	0.01	0.01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.01	0.01
All vegetable crops	***3,486.51***	***1,027.00***	***5,233.11***	***1,498.49***	***3,697.07***	***1,197.62***	***91.80***	***91.80***	***2.58***	***2.58***	***15.17***	***15.17***	***1,068.78***	***913.82***	***0.18***	***0.18***	***13,595.22***	***1,509.73***

Table 6: **The total quantities (kilograms) of each pesticide type used on vegetable crops in Northern Ireland, 2011.**

	Pesticide type								
Crop type	Fungicides	Herbicides & desiccants	Insecticides	Molluscicides	Biological control	Growth regulators	Seed treatments	Disinfectants	Total weight applied (kg)
Broccoli & calabrese	81.06	285.89	72.92	.	.	.	.	.	439.87
Brussels sprout	92.04	177.60	35.68	0.34	.	.	.	40.31	345.97
Autumn cabbage	3.22	2.24	1.09	.	.	.	.	.	6.56
Spring cabbage	9.29	39.98	10.53	.	.	.	0.003	.	59.80
Winter cabbage	7.26	48.29	9.52	.	.	.	.	.	65.07
Summer cabbage	11.73	36.33	20.06	.	.	.	.	.	68.13
Savoy cabbage	80.83	199.40	79.31	0.0046	.	.	0.0016	.	359.54
White cabbage	76.75	119.72	30.10	.	.	.	.	.	226.56
Red cabbage	4.32	10.53	3.85	.	.	.	.	.	18.70
Autumn cauliflower	36.44	105.20	16.44	.	.	.	.	.	158.08
Summer cauliflower	53.89	139.29	31.01	.	.	.	.	.	224.19
Winter cauliflower	36.91	109.02	21.80	.	.	.	.	.	167.73
Kale	0.94	2.65	0.22	.	.	.	.	.	3.81
Pea (not for animals)	1.39	45.00	0.27	.	.	.	.	.	46.66
Broad bean	1.55	5.27	0.34	.	.	.	0.01	.	7.17
Courgettes	0.0005	.	.	.	.	.	.	.	0.0005
Pumpkin	0.0065	.	.	.	.	.	.	.	0.0065
Carrot	347.70	1,354.56	190.08	0.04	.	.	12.29	.	1,904.67
Parsnip	266.68	658.10	51.41	0.01	.	88.87	0.37	.	1,065.44

Table 6 cont: **The total quantities (kilograms) of each pesticide type used on vegetable crops in Northern Ireland, 2011.**

Crop type	Fungicides	Herbicides & desiccants	Insecticides	Molluscicides	Biological control	Growth regulators	Seed treatments	Disinfectants	Total weight applied (kg)
Turnip & swede	0.21	381.66	467.31	5.21	.	.	1.94	.	856.33
Beetroot	2.46	27.86	.	.	.	.	0.44	.	30.76
Bulb onion	110.62	57.81	.	.	.	.	.	.	168.43
Summer scallion	14.36	54.81	.	.	.	.	0.75	.	69.91
Winter scallion	1.36	10.68	.	.	.	.	0.05	.	12.09
Soup leek	38.38	84.46	2.29	.	.	.	0.51	.	125.64
Table leek	71.99	144.84	0.00	.	.	.	0.48	.	217.32
Lettuce	91.27	202.82	19.64	6.81	.	.	0.01	.	320.55
Table celery	14.43	48.97	14.12	.	.	.	0.00	.	77.51
Soup celery	17.81	71.24	0.74	.	.	.	0.04	.	89.82
Parsley	40.16	108.69	1.18	.	.	.	0.10	.	150.14
Celeriac	0.0022	.	.	.	.	.	.	.	0.0022
All vegetable crops	***1,515.06***	***4,532.90***	***1,079.92***	***12.41***	***.***	***88.87***	***16.99***	***40.31***	***7,286.47***

Table 7: **The proportional area (%) of each crop treated with pesticides and the number of spray applications (in parentheses) in Northern Ireland, 2011.**

	Pesticide type																	
	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Biological controls		Growth regulators		Seed treatments		Disinfectants		All pesticides	
Crop type	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps
Broccoli & calabrese	52.5	(3.60)	92.6	(2.40)	78.3	(2.54)	.	.	0.7	(1.00)	.	.	.	(1.79)	.	.	93.3%	(2.61)
Brussels sprout	99.5%	(3.38)	99.4%	(1.54)	99.6%	(2.08)	4.7%	(1.00)	0.5%	(1.00)	.	.	.	.	0.3%	(1.00)	99.7%	(2.20)
Autumn cabbage	100.0%	(4.76)	99.4%	(1.66)	100.0%	(1.98)	.	.	0.5%	(1.00)	.	.	.	.	.	.	100.0%	(2.83)
Spring cabbage	93.2%	(3.01)	96.5%	(2.00)	93.2%	(1.55)	.	.	0.4%	(1.00)	.	.	56.8%	(1.00)	.	.	96.9%	(2.07)
Winter cabbage	85.0%	(4.46)	99.4%	(2.69)	100.0%	(1.98)	.	.	0.6%	(1.00)	.	.	.	.	.	.	100.0%	(2.84)
Summer cabbage	76.6%	(3.53)	95.7%	(2.46)	98.1%	(2.34)	.	.	0.5%	(1.00)	.	.	.	.	.	.	100.0%	(2.63)
Savoy cabbage	71.2%	(2.94)	83.1%	(1.98)	79.2%	(2.04)	0.03%	(1.00)	0.5%	(1.00)	.	.	0.3%	(1.00)	.	.	83.8%	(2.22)
White cabbage	93.5%	(4.23)	95.3%	(2.16)	95.7%	(3.66)	.	.	0.4%	(1.00)	.	.	.	.	.	.	95.8%	(3.31)
Red cabbage	12.6%	(3.49)	81.2%	(1.61)	12.5%	(1.59)	.	.	0.5%	(1.00)	.	.	.	.	.	.	81.8%	(2.25)
Autumn cauliflower	86.6%	(4.10)	99.9%	(2.13)	94.8%	(2.62)	.	.	0.1%	(1.00)	.	.	.	.	.	.	100.0%	(2.83)
Summer cauliflower	86.1%	(3.73)	97.9%	(2.06)	95.4%	(2.33)	.	.	0.8%	(1.00)	.	.	.	.	.	.	99.6%	(2.61)
Winter cauliflower	98.6%	(3.63)	98.5%	(2.58)	87.8%	(4.27)	.	.	0.8%	(1.00)	.	.	.	.	.	.	99.4%	(3.37)
Kale	100.0%	(1.00)	100.0%	(3.00)	100.0%	(2.00)	.	.	.	.	.	.	.	.	.	.	100.0%	(2.00)
Pea (not for animals)	8.2%	(1.00)	100.0%	(2.00)	8.2%	(1.00)	.	.	.	.	.	.	.	.	.	.	100.0%	(1.54)

Table 7 (cont.): The proportional area (%) of each crop treated with pesticides and the number of spray applications (in parentheses) in Northern Ireland, 2011.

	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Biological controls		Growth regulators		Seed treatments		Disinfectants		All pesticides	
Crop type	**%**	**sp apps**	**%**	**sp apps**	**%**	**sp apps**	**%**	**sp apps**	**%**	**sp apps**	**%**	**sp apps**	**%**	**sp apps**	**%**	**sp apps**	**%**	**sp apps**
Broad bean	71.7%	(1.00)	100.0%	(1.62)	100.0%	(1.00)	.	.	.	.	.	.	7.6%	(1.00)	.	.	100.0%	(1.20)
Courgette	100.0%	(1.00)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100.0%	(1.00)
Pumpkin	100.0%	(1.00)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100.0%	(1.00)
Carrot	72.4%	(2.73)	100.0%	(3.79)	100.0%	(2.83)	0.1%	(1.00)	.	.	.	.	97.5%	(1.25)	.	.	100.0%	(2.64)
Parsnip	76.9%	(3.46)	99.9%	(3.39)	99.2%	(3.24)	0.04%	(1.00)	.	.	9.1%	(1.00)	73.9%	(1.06)	.	.	99.9%	(2.64)
Turnip & swede	0.18%	(1.00)	89.81%	(2.29)	65.75%	(3.05)	17.12%	(1.00)	.	.	.	.	89.81%	(1.00)	.	.	89.93%	(1.95)
Beetroot	45.3%	(1.00)	101.9%	(2.38)	.	.	.	.	.	.	.	.	99.5%	(1.21)	.	.	101.9%	(1.72)
Bulb onion	100.0%	(6.00)	100.0%	(7.00)	.	.	.	.	.	.	.	.	.	.	.	.	100.0%	(6.50)
Summer scallion	82.4%	(2.88)	99.7%	(3.37)	.	.	.	.	.	.	.	.	99.7%	(1.00)	.	.	99.7%	(2.33)
Winter scallion	10.1%	(10.00)	95.0%	(3.00)	.	.	.	.	.	.	.	.	95.0%	(1.00)	.	.	95.0%	(3.82)
Soup leek	99.5%	(2.46)	98.5%	(4.35)	2.3%	(1.00)	.	.	.	.	.	.	97.4%	(1.00)	.	.	100.8%	(2.55)
Table leek	89.6%	(3.07)	99.8%	(3.91)	0.3%	(1.00)	.	.	.	.	.	.	61.7%	(1.00)	.	.	100.1%	(2.88)
Lettuce	99.9%	(2.00)	99.9%	(2.20)	100.0%	(1.43)	76.5%	(1.00)	.	.	.	.	76.5%	(1.00)	.	.	100.0%	(1.61)
Table celery	99.7%	(2.39)	73.9%	(1.26)	85.4%	(2.52)	.	.	.	.	.	.	13.8%	(1.00)	.	.	99.7%	(1.97)
Soup celery	93.0%	(2.93)	99.5%	(2.84)	19.6%	(2.80)	.	.	.	.	.	.	98.8%	(1.45)	.	.	99.6%	(2.48)
Parsley	89.5%	(2.48)	99.9%	(2.80)	35.2%	(2.55)	.	.	.	.	.	.	82.5%	(1.46)	.	.	100.0%	(2.31)
Celeriac	100.0%	(1.00)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100.0%	(1.00)
All crops	***65.55%***	***(3.18)***	***95.64%***	***(2.78)***	***76.44%***	***(2.53)***	***5.86%***	***(1.00)***	***0.165%***	***(1.00)***	***0.968%***	***1.00***	***58.33%***	***(1.16)***	***0.012%***	***(1.00)***	***96.4%***	***(2.50)***

Table 8: **Estimated area (spray hectares) of vegetable crops treated with pesticide formulations in Northern Ireland, 2011.**

Pesticide type & formulation	Brassica*	Carrot	Celery	Leek	Lettuce	Bulb onion & scallion	Other vegetables	Parsley	Parsnip	Pea & bean	Turnip & swede	Total Area (spha)
Fungicides												
Azoxystrobin	184.67	60.77	65.43	50.38	59.28	22.17	.	7.11	43.33	.	.	493.13
Azoxystrobin/difenoconazole	296.63	189.86	9.44	15.61	.	.	.	5.54	32.5	.	.	549.58
Benthiavalicarb-isopropyl/mancozeb	.	.	.	.	.	17.39	.	.	.	.	.	17.39
Boscalid/pyraclostrobin	2.58	115.97	.	.	.	.	.	21.42	50.78	.	.	190.76
Carbendazim	>0.001	.	.	.	.	.	.	.	.	.	.	>0.001
Chlorothalonil	38.5	.	.	4.99	.	19.86	.	.	.	0.15	.	63.5
Chlorothalonil/metalaxyl-M	131.14	.	4.33	27.75	.	4.91	0.62	1.08	.	2.59	0.15	172.57
Copper oxychloride	.	.	13.05	.	.	17.39	.	.	.	.	.	30.44
Cyprodinil/fludioxonil	.	105.84	.	.	.	.	.	.	50.78	.	.	156.62
Difenoconazole	523.26	.	34.76	.	.	.	0.76	15.38	.	.	.	574.17
Dimethomorph/mancozeb	.	.	0.29	9.42	.	17.39	.	9.43	.	.	.	36.53
Epoxiconazole	.	.	.	.	.	.	.	19.51	.	.	.	19.51
Fenpropimorph	.	81.63	.	2.49	.	.	2.32	.	73.71	.	.	160.16
Fosetyl-aluminium	5.17	.	.	.	.	.	.	.	.	.	.	5.17
Mancozeb	.	.	.	.	.	17.39	.	.	50.78	.	.	68.17
Mancozeb/metalaxyl-M	.	.	.	.	59.28	.	.	8.54	.	.	.	67.82
Metalaxyl-M	.	152.97	.	.	.	.	.	.	96.27	.	.	249.23
Propamocarb hydrochloride	2.61	.	.	.	.	.	.	.	.	.	.	2.61
Prothioconazole	68.23	.	.	78.57	.	32.14	.	.	.	.	.	178.94
Tebuconazole	69.27	117.7	.	109.77	.	2.42	.	.	55.76	.	.	354.92
Tebuconazole/trifloxystrobin	19.47	6.94	.	3.48	.	.	.	.	56.57	.	.	86.46
Tolclofos-methyl	1.97	.	.	.	.	.	.	.	.	.	.	1.97
All fungicides	***1,343.49***	***831.69***	***127.29***	***302.47***	***118.56***	***151.07***	***3.69***	***88.01***	***510.48***	***2.75***	***0.15***	***3,479.65***

***Leaf and flowerhead brassicas**

Table 8 (cont.): **Estimated area (spray hectares) of vegetable crops treated with pesticide formulations in Northern Ireland, 2011.**

Pesticide type & formulation	Brassica*	Carrot	Celery	Leek	Lettuce	Bulb onion & scallion	Other vegetables	Parsley	Parsnip	Pea & bean	Turnip & swede	Total Area (spha)
Herbicides & dessicants												
Aminopyralid/fluroxypyr	19.47	.	.	.	.	.	.	.	.	.	.	19.47
Bentazone	.	.	.	.	.	.	.	.	.	15.03	.	15.03
Chloridazon	.	.	.	50.6	.	36.06	.	.	.	.	.	86.66
Chlorpropham	.	.	.	8.17	.	.	.	.	.	.	.	8.17
Clomazone	102.07	157.39	.	.	.	.	.	.	.	.	83.94	343.4
Clopyralid	26.03	.	.	.	.	.	.	.	.	.	.	26.03
Clopyralid/triclopyr	0.020	.	.	.	.	.	.	.	.	.	.	0.020
Cycloxydim	.	.	.	0.57	.	.	.	.	.	.	.	0.57
Dicamba/MCPA/mecoprop-P	.	10.38	.	.	.	.	.	.	5.83	.	.	16.21
Diquat	16.86	44.72	.	.	.	1.29	1.94	.	26.05	.	7.79	98.64
Ethofumesate	.	.	.	.	.	.	3.85	.	.	.	.	3.85
Fluroxypyr	.	.	.	27.64	.	.	.	.	.	.	.	27.64
Glyphosate	382.09	127.83	11.26	33.21	.	3.45	2.0	17.89	51.22	17.62	150.2	796.75
Imazamox/pendimethalin	.	.	.	.	.	.	.	.	.	2.59	.	2.6
Ioxynil	.	.	.	224.51	.	98.54	.	.	.	.	.	323.05
Lenacil	.	.	.	.	.	.	6.16	.	.	.	.	6.16
Linuron	.	614.82	45.31	0.29	.	3.2	.	39.98	244.15	.	18.46	966.22
Metamitron	.	.	.	.	.	.	3.06	.	52.93	.	.	55.99
Metazachlor	404.88	.	.	17.22	.	.	.	.	.	.	217.17	639.27
Metribuzin	.	6.94	.	.	.	.	.	.	.	.	.	6.94
Pendimethalin	43.89	301.73	20.22	70.53	90.81	63.3	.	30.93	149.73	0.15	.	771.3
Phenmedipham	.	.	.	.	.	.	3.85	.	.	.	.	3.85
Propachlor	100.78	.	.	8.28	.	3.91	.	.	.	.	.	112.97
Propaquizafop	.	89.93	.	.	.	0.15	.	.	50.78	.	.	140.86
Propyzamide	9.73	.	.	.	59.28	.	.	.	.	.	.	69
Prosulfocarb	.	346.2	25.77	12.15	.	17.39	.	17.82	124.03	.	15.57	558.94
Pyridate	26.03	.	.	.	.	.	.	.	.	.	.	26.03
Tepraloxydim	.	42	.	23.17	.	18.27	.	.	21.73	.	.	105.17
Triflusulfuron-methyl	.	.	.	.	.	.	2.32	.	.	.	.	2.32
All herbicides & dessicants	***1,131.83***	***1,741.95***	***102.57***	***476.33***	***150.09***	***245.55***	***23.17***	***106.63***	***726.45***	***35.40***	***493.13***	***5,233.11***

***Leaf and flowerhead brassicas**

Table 8 (cont.): **Estimated area (spray hectares) of vegetable crops treated with pesticide formulations in Northern Ireland, 2011.**

Pesticide type & formulation	Brassica*	Carrot	Celery	Leek	Lettuce	Bulb onion & scallion	Other vegetables	Parsley	Parsnip	Pea & bean	Turnip & swede	Total Area (spha)
Insecticides												
Bifenazate	0.87	.	.	.	.	.	.	.	.	.	.	0.87
Chlorpyrifos	19.29	.	.	.	.	.	.	.	.	0.15	.	19.45
Cypermethrin	123.64	.	.	.	.	.	.	0.46	.	0.57	.	124.68
Deltamethrin	49	42.85	5.87	0.81	.	.	.	.	9.73	.	5.83	114.08
Garlic Extract	6.84	.	5.83	0.06	.	.	.	.	.	.	272.89	285.62
Indoxacarb	59.48	.	.	.	.	.	.	.	.	.	.	59
Lambda-cyhalothrin	430.09	830.38	20.1	.	.	.	.	60.92	564.51	.	25.53	1,931.54
Lambda-cyhalothrin/pirimicarb	169.58	.	.	.	.	.	.	.	.	.	.	169.58
Oxamyl	0.31	100.83	0.23	.	.	.	.	0.15	43.49	.	0.31	145.32
Pirimicarb	202.27	86.09	25.55	.	13.87	.	.	.	9.28	2.59	52.06	391.71
Pymetrozine	163.88	.	5.83	.	45.41	.	.	.	.	.	.	215.12
Spirotetramat	27.89	.	.	.	.	.	.	.	.	.	.	27.89
Thiacloprid	166.26	.	.	.	.	.	.	.	.	.	.	166.26
All insecticides	***1,419.41***	***1,060.15***	***63.41***	***0.87***	***59.28***	***.***	***.***	***61.53***	***627.00***	***3.32***	***356.62***	***3,651.59***
Molluscicides												
Ferric phosphate	.	.	.	.	45.41	.	.	.	.	.	.	45.41
Metaldehyde	1.86	.	.	.	.	.	.	.	.	.	.	1.86
Methiocarb	0.78	0.31	.	.	.	.	.	.	0.06	.	43.39	44.53
All molluscicides	***2.64***	***0.31***	***.***	***.***	***45.41***	***.***	***.***	***.***	***0.06***	***.***	***43.39***	***91.80***
Growth regulators												
Maleic hydrazide	.	.	.	.	.	.	.	.	15.17	.	.	15.17
All growth regulators	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***15.17***	***.***	***.***	***15.17***

*Leaf and flowerhead brassicas

Table 8 (cont.): **Estimated area (spray hectares) of vegetable crops treated with pesticide formulations in Northern Ireland, 2011.**

Pesticide type & formulation	Brassica*	Carrot	Celery	Leek	Lettuce	Bulb onion & scallion	Other vegetables	Parsley	Parsnip	Pea & bean	Turnip & swede	Total Area (spha)
Seed Treatments												
Cymoxanil/fludioxonil/ metalaxyl-M	11.02	162.20	.	.	.	.	0.31	.	108.53	.	.	282.06
hymexazol	.	.	.	.	.	.	3.56	.	.	.	.	3.56
Iprodione	2.65	.	3.08	.	.	.	0.31	4.80	.	.	3.57	14.41
Metalaxyl-M	0.03	.	.	.	.	.	.	.	.	.	.	0.03
Thiram	3.17	.	22.24	2.76	45.41	4.82	4.57	11.46	.	0.15	104.15	198.71
Fipronil	0.31	.	.	.	.	.	.	.	.	.	88.09	88.40
Imidacloprid	.	.	.	.	45.48	.	.	.	.	.	.	45.48
Tefluthrin	.	257.05	.	69.68	.	22.56	.	14.23	65.19	.	.	428.69
Unknown seed treatment	.	20.90	1.85	1.85	.	1.30	.	1.85	.	.	32.04	59.79
All seed treatments	***17.18***	***440.15***	***27.16***	***74.29***	***90.89***	***28.67***	***8.74***	***32.33***	***173.72***	***0.15***	***227.85***	***1,121.13***
Disinfectants												
Acetic acid/hydrogen peroxide/peracetic acid	0.18	.	.	.	.	.	.	.	.	.	.	0.18
All disinfectants	***0.18***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***0.18***
Adjuvants												
Polyalkylene oxide modified heptamethyl siloxane	.	.	.	.	.	.	.	.	9.73	.	.	9.73
Unknown adjuvant	.	11.6	.	.	.	.	.	.	.	.	.	11.6
All adjuvants	***.***	***11.6***	***.***	***.***	***.***	***.***	***.***	***.***	***9.73***	***.***	***.***	***21.32***
All pesticides	***3,917.32***	***4,085.85***	***320.44***	***853.95***	***464.22***	***425.29***	***35.61***	***288.50***	***2,062.60***	***41.62***	***1,121.14***	***13,616.54***

*Leaf and flowerhead brassicas

Table 9: **Estimated quantities (kilograms) of pesticide formulations used on vegetable crops in Northern Ireland, 2011.**

Pesticide type & formulation	Brassica*	Carrot	Celery	Leek	Lettuce	Bulb onion & scallion	Other vegetables	Parsley	Parsnip	Pea & bean	Turnip & swede	Total Quantity(kg)
Fungicides												
Azoxystrobin	40.82	15.19	15.39	12.59	14.82	4.67	.	1.78	10.83	.	.	116.10
Azoxystrobin/difenoconazole	96.40	61.71	3.07	5.07	.	.	.	1.80	10.56	.	.	178.61
Benthiavalicarb-isopropyl/mancozeb	.	.	.	.	.	18.72	.	.	.	.	.	18.72
Boscalid/pyraclostrobin	0.86	38.40	.	.	.	.	.	7.16	16.96	.	.	63.37
Carbendazim	>0.001	.	.	.	.	.	.	.	.	.	.	>0.001
Chlorothalonil	46.76	.	.	4.99	.	19.86	.	.	.	0.15	.	71.76
Chlorothalonil/metalaxyl-M	140.97	.	4.65	28.84	.	5.28	0.66	0.83	.	2.79	0.17	184.18
Copper oxychloride	.	.	6.04	.	.	17.39	.	.	.	.	.	23.43
Cyprodinil/fludioxonil	.	52.92	.	.	.	.	.	.	25.39	.	.	78.31
Difenoconazole	38.53	.	2.64	.	.	.	0.06	1.15	.	.	.	42.38
Dimethomorph/mancozeb	.	.	0.42	13.98	.	25.81	.	13.99	.	.	.	54.21
Epoxiconazole	.	.	.	.	.	.	.	2.44	.	.	.	2.44
Fenpropimorph	.	61.23	.	1.52	.	.	1.74	.	55.29	.	.	119.77
Fosetyl-aluminium	61.98	.	.	.	.	.	.	.	.	.	.	61.98
Mancozeb	.	.	.	.	.	27.83	.	.	76.17	.	.	103.99
Mancozeb/metalaxyl-M	.	.	.	.	76.45	.	.	11.01	.	.	.	87.47
Metalaxyl-M	.	88.73	.	.	.	.	.	.	44.81	.	.	133.54
Propamocarb hydrochloride	11.62	.	.	.	.	.	.	.	.	.	.	11.62
Prothioconazole	13.10	.	.	15.09	.	6.17	.	.	.	.	.	34.36
Tebuconazole	17.02	27.98	.	27.44	.	0.60	.	.	13.94	.	.	86.99
Tebuconazole/trifloxystrobin	5.84	1.56	.	0.78	.	.	.	.	12.73	.	.	20.91
Tolclofos-methyl	19.75	.	.	.	.	.	.	.	.	.	.	19.75
All fungicides	***493.67***	***347.70***	***32.22***	***110.31***	***91.27***	***126.34***	***2.46***	***40.16***	***266.68***	***2.94***	***0.17***	***1,513.91***

Table 9 (cont.): **Estimated quantities (kilograms) of pesticide formulations used on vegetable crops in Northern Ireland, 2011.**

Pesticide type & formulation	Brassica*	Carrot	Celery	Leek	Lettuce	Bulb onion & scallion	Other vegetables	Parsley	Parsnip	Pea & bean	Turnip & swede	Total Quantity(kg)
Insecticides												
Bifenazate	0.21	.	.	.	.	.	.	.	.	.	.	0.21
Chlorpyrifos	170.53	.	.	.	.	.	.	.	.	0.06	.	170.58
Cypermethrin	3.09	.	.	.	.	.	.	0.02	.	0.010	.	3.12
Deltamethrin	0.37	0.32	0.040	0.010	.	.	.	.	0.06	.	0.04	0.84
Garlic Extract	33.66	.	9.33	2.29	.	.	.	.	.	.	455.52	500.80
Indoxacarb	1.52	.	.	.	.	.	.	.	.	.	.	1.52
Lambda-cyhalothrin	5.25	9.78	0.28	.	.	.	.	0.86	6.42	.	0.20	22.80
Lambda-cyhalothrin/pirimicarb	32.34	.	.	.	.	.	.	.	.	.	.	32.34
Oxamyl	0.61	167.93	0.46	.	.	.	.	0.30	43.64	.	0.61	213.54
Pirimicarb	36.93	12.05	3.58	.	3.47	.	.	.	1.30	0.54	10.93	68.81
Pymetrozine	29.98	.	1.17	.	9.08	.	.	.	.	.	.	40.22
Spirotetramat	2.09	.	.	.	.	.	.	.	.	.	.	2.09
Thiacloprid	15.96	.	.	.	.	.	.	.	.	.	.	15.96
All insecticides	***332.54***	***190.08***	***14.86***	***2.29***	***12.55***	***.***	***.***	***1.18***	***51.41***	***0.61***	***467.31***	***1,072.83***
Molluscicides												
Ferric phosphate	.	.	.	.	6.81	.	.	.	.	.	.	6.81
Metaldehyde	0.23	.	.	.	.	.	.	.	.	.	.	0.23
Methiocarb	0.12	0.04	.	.	.	.	.	.	0.010	.	5.21	5.37
All molluscicides	***0.35***	***0.04***	***.***	***.***	***6.81***	***.***	***.***	***.***	***0.01***	***.***	***5.21***	***12.41***
Growth regulators												
Maleic hydrazide	.	.	.	.	.	.	.	.	88.87	.	.	88.87
All growth regulators	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***88.87***	***.***	***.***	***88.87***

***Leaf and flowerhead brassicas**

Table 9 (cont.): **Estimated quantities (kilograms) of pesticide formulations used on vegetable crops in Northern Ireland, 2011.**

Pesticide type & formulation	Brassica*	Carrot	Celery	Leek	Lettuce	Bulb onion & scallion	Other vegetables	Parsley	Parsnip	Pea & bean	Turnip & swede	Total Quantity(kg)
Seed treatments												
Cymoxanil/fludioxonil/ metalaxyl-M	>0.001	0.18	.	.	.	.	>0.001	.	0.03	.	.	0.22
Hymexazol	.	.	.	.	.	.	0.27	.	.	.	.	0.27
Iprodione	0.45	.	0.01	.	.	.	0.01	0.01	.	.	0.04	0.53
Metalaxyl-M	0.01	.	.	.	.	.	.	.	.	.	.	0.01
Thiram	0.56	.	0.04	0.07	0.01	0.12	0.17	0.04	.	0.01	0.15	1.17
Fipronil	0.00	.	.	.	.	.	.	.	.	.	1.79	1.79
Imidacloprid	.	.	.	.	7.09	.	.	.	.	.	.	7.09
Tefluthrin	.	12.11	.	0.99	.	0.67	.	0.06	0.33	.	.	14.16
All seed treatments	***1.02***	***12.29***	***0.05***	***1.06***	***7.10***	***0.80***	***0.45***	***0.11***	***0.37***	***0.01***	***1.98***	***25.23***
Disinfectants												
Acetic acid/hydrogen peroxide/peracetic acid	40.31	.	.	.	.	.	.	.	.	.	.	40.31
All disinfectants	***40.31***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***40.31***
Adjuvants												
Polyalkylene oxide modified heptamethyl siloxane	.	.	.	.	.	.	.	.	2.89	.	.	2.89
All adjuvants	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***2.89***	***.***	***.***	***2.89***
All pesticides	***2,144.02***	***1,904.67***	***167.34***	***342.96***	***320.55***	***250.43***	***30.76***	***150.14***	***1,068.33***	***53.83***	***856.33***	***7,289.36***

Table 10: The fifty active ingredients most extensively used on vegetable crops in Northern Ireland 2011, ranked by treated area (spray hectares).

	Active ingredient	Treated area (sp ha)
1.	Lambda-cyhalothrin	2,101.12
2.	Difenoconazole	1,123.75
3.	Azoxystrobin	1,042.72
4.	Linuron	966.22
5.	Glyphosate	796.76
6.	Pendimethalin	773.89
7.	Metazachlor	639.27
8.	Pirimicarb	561.30
9.	Prosulfocarb	558.94
10.	Metalaxyl-m	489.62
11.	Tebuconazole	441.39
12.	Clomazone	343.40
13.	Ioxynil	323.06
14.	Garlic extract	285.62
15.	Chlorothalonil	236.07
16.	Pymetrozine	215.12
17.	Pyraclostrobin	190.76
18.	Boscalid	190.76
19.	Mancozeb	189.91
20.	Prothioconazole	178.94
21.	Thiacloprid	166.26
22.	Fenpropimorph	160.16
23.	Cyprodinil	156.62
24.	Fludioxonil	156.62
25.	Oxamyl	145.32
26.	Propaquizafop	140.86
27.	Cypermethrin	124.68
28.	Deltamethrin	114.08
29.	Propachlor	112.97
30.	Tepraloxydim	105.17
31.	Diquat	98.64
32.	Chloridazon	86.66
33.	Trifloxystrobin	86.46
34.	Propyzamide	69.00
35.	Indoxacarb	59.47
36.	Metamitron	55.99
37.	Fluroxypyr	47.11
38.	Ferric phosphate	45.41

Table 10 (cont.): The fifty active ingredients most extensively used on vegetable crops in Northern Ireland 2011, ranked by treated area (spray hectares).

	Active ingredient	Treated area (sp ha)
39.	Methiocarb	44.53
40.	Dimethomorph	36.53
41.	Copper oxychloride	30.44
42.	Spirotetramat	27.89
43.	Clopyralid	26.05
44.	Pyridate	26.03
45.	Epoxiconazole	19.51
46.	Aminopyralid	19.47
47.	Chlorpyrifos	19.45
48.	Benthiavalicarb-isopropyl	17.39
49.	Dicamba	16.21
50.	MCPA	16.21

Table 11: The fifty active ingredients most extensively used on vegetable crops in Northern Ireland 2011, ranked by weight (kilograms).

	Active ingredient	Quantity applied (kg)
1.	Prosulfocarb	997.05
2.	Glyphosate	940.48
3.	Pendimethalin	875.84
4.	Garlic extract	500.80
5.	Propachlor	475.52
6.	Metazachlor	441.40
7.	Linuron	353.85
8.	Mancozeb	253.45
9.	Chlorothalonil	243.10
10.	Azoxystrobin	226.02
11.	Oxamyl	213.54
12.	Chlorpyrifos	170.59
13.	Metalaxyl-m	151.39
14.	Fenpropimorph	119.77
15.	Difenoconazole	111.09
16.	Tebuconazole	100.94
17.	Pirimicarb	99.62
18.	Maleic hydrazide	88.87
19.	Propyzamide	86.88
20.	Metamitron	83.83
21.	Fosetyl-aluminium	61.98
22.	Chloridazon	54.85
23.	Boscalid	50.66
24.	Cyprodinil	46.98
25.	Pymetrozine	40.22
26.	Diquat	39.39
27.	Prothioconazole	34.36
28.	Ioxynil	33.36
29.	Fludioxonil	31.32
30.	Clomazone	24.98
31.	Lambda-cyhalothrin	24.33
32.	Copper oxychloride	23.44
33.	MCPA	23.35
34.	Hydrogen peroxide	23.10
35.	Bentazone	21.58
36.	Tolclofos-methyl	19.75
37.	Propaquizafop	16.63

Table 11 (cont.): The fifty active ingredients most extensively used on vegetable crops in Northern Ireland 2011, ranked by weight (kilograms).

	Active ingredient	Quantity applied (kg)
38.	Thiacloprid	15.96
39.	Pyraclostrobin	12.71
40.	Propamocarb hydrochloride	11.62
41.	Acetic acid	11.55
42.	Lenacil	11.00
43.	Pyridate	10.41
44.	Fluroxypyr	7.92
45.	Tepraloxydim	7.74
46.	Trifloxystrobin	6.97
47.	Ferric phosphate	6.81
48.	Chlorpropham	6.54
49.	Peracetic acid	5.66
50.	Dimethomorph	5.48

Table 12: **Broccoli and Calabrese: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Alternaria & Ring spot	Blackspot	Disease prevention	General fungal control	Mildew	Propagation botrytis	Propagation damping off	White blister	Leaf spot	General weed control	Ground preparation	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides														
Azoxystrobin	.	.	.	8.656	.	.	.	.	.	.	.	8.656	2.164	1.948
Azoxystrobin/ difenoconazole	.	34.708	1.16	34.708	.	.	.	.	.	.	.	70.576	18.514	22.937
Boscalid/ pyraclostrobin	.	.	0.64	.	.	.	.	.	.	.	.	0.64	0.64	0.214
Chlorothalonil	.	.	1.28	0.015	.	.	.	.	.	.	.	1.295	0.643	1.615
Chlorothalonil/ metalaxyl-M	.	1.939	.	0.462	17.354	.	.	3.471		.	.	23.226	22.918	24.968
Difenoconazole	.	34.708	6.942	27.745	.	.	.	.	0.462	.	.	69.857	48.724	5.239
Fosetyl-aluminium	.	.	.	.	.	1.28	.	.	.	.	.	1.28	0.64	15.356
Propamocarb hydrochloride	.	.	0.64	.	.	.	0.011	.	.	.	.	0.651	0.651	3.078
Prothioconazole	3.471	.	.	.	.	.	.	.	.	.	.	3.471	3.471	0.666
Tebuconazole	.	.	.	19.518	.	.	.	.	.	.	.	19.518	19.518	4.772
Tolclofos-methyl	.	.	.	.	.	.	0.011	.	.	.	.	0.011	0.011	0.106
All fungicides	***3.471***	***71.355***	***10.662***	***91.104***	***17.354***	***1.28***	***0.021***	***3.471***	***0.462***	***.***	***.***	***199.179***	***.***	***80.898***
Herbicides & desiccants														
Clomazone	.	.	.	.	.	.	.	.	.	22.002	.	22.002	22.002	2.93
Clopyralid	.	.	.	.	.	.	.	.	.	26.031	.	26.031	13.016	2.603
Glyphosate	.	.	.	.	.	.	.	.	.	65.886	31.296	97.182	70.079	113.602

Table 12 (cont.): **Broccoli and Calabrese: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	General weed control	Ground preparation	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Metazachlor	48.36	.	26.474	74.834	70.507	50.927
Pendimethalin	3.324	.	.	3.324	3.324	3.784
Propachlor	1.16	.	17.354	18.514	18.514	101.63
Pyridate	26.031	.	.	26.031	13.016	10.413
All herbicides& desiccants	***192.795***	***31.296***	***43.833***	***267.918***	***.***	***285.888***

Pesticide type & formulation	Aphids	Cabbage root fly	Caterpillars & butterflies	Caterpillars	Caterpillars & aphids	General insect control	Insect deterrence	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides										
Chlorpyrifos	.	0.64	.	1.16	.	.	.	1.8	1.8	39.436
Cypermethrin	.	.	.	45.406	2.803	.	.	48.209	25.352	1.205
Deltamethrin	.	.	.	4.328	.	.	.	4.328	2.164	0.032
Garlic Extract	.	.	0.062	.	.	0.004	1.298	1.363	1.363	6.452
Indoxacarb	.	.	.	2.164	.	2.164	.	4.328	2.164	0.11
Lambda-cyhalothrin	88.935	.	.	3.471	.	0.462	.	92.868	23.143	1.334

Table 12 (cont.): **Broccoli and Calabrese: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type and formulation	Aphids	Cabbage root fly	Caterpillars & butterflies	Caterpillars	Caterpillars & aphids	General insect control	Insect deterrence	Mealy aphid	Peach potato aphid	Disease prevention	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Lambda-cyhalothrin/ pirimicarb	.	19.497	.	.	1.298	6.422	.	.	.	.	27.217	27.217	5.534
Pirimicarb	50.373	.	.	.	2.495	.	.	.	.	.	52.868	28.002	10.842
Pymetrozine	4.328	.	.	.	.	.	.	.	17.994	.	22.322	20.158	4.248
Thiacloprid	4.111	.	.	.	.	.	.	34.708	.	.	38.82	21.465	3.726
All insecticides	***147.746***	***20.137***	***0.062***	***56.528***	***6.596***	***9.051***	***1.298***	***34.708***	***17.994***		***294.122***	***.***	***72.921***
Biological controls													
Bacillus subtilis	.	.	.	.	.	.	.	.	.	0.64	0.64	0.64	.
All biological controls	**.**	**.**	**.**	**.**	**.**	**.**	**.**	**.**	**.**	***0.64***	***0.64***	**.**	**.**

Table 13: **Brussels sprout: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Alternaria & Ringspot	Blackspot	Disease prevention	General fungal control	Leaf spot	Mildew	Propagation botrytis	Propagation damping off	Ringspot	White blister	General weed control	Ground preparation	Glass house weed control	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides																
Azoxystrobin	.	.	64.19	.	.	.	.	.	.	.	.	.	.	64.19	16.05	16.05
Azoxystrobin/ difenoconazole	.	26.03	.	37.71	.	.	.	.	.	.	.	.	.	63.74	24.70	20.72
Boscalid/ pyraclostrobin	.	.	0.28	.	.	.	.	.	.	.	.	.	.	0.28	0.28	0.09
Chlorothalonil	.	.	0.56	11.68	.	.	.	.	.	.	.	.	.	12.24	11.96	15.30
Chlorothalonil/ metalaxyl-M	.	.	.	1.85	.	13.02	.	.	.	2.16	.	.	.	17.03	15.80	18.31
Difenoconazole	.	27.90	4.96	24.66	1.85	.	.	.	1.73	.	.	.	.	61.09	38.19	4.58
Fosetyl-aluminium	.	.	.	.	.	.	0.56	.	.	.	.	.	.	0.56	0.28	6.71
Propamocarb hydrochloride	.	.	0.28	.	.	.	.	.	.		.	.	.	0.28	0.28	1.01
Prothioconazole	2.16	.	.	11.68	.	.	.	.	.	.	.	.	.	13.84	13.84	2.66
Tebuconazole	.	.	0.63	13.02	.	.	.	.	.	.	.	.	.	13.65	13.65	3.41
Tolclofos-methyl	.	.	.	.	.	.	.	0.28	.	.	.	.	.	0.28	0.28	2.80
All fungicides	***2.16***	***53.93***	***70.90***	***100.59***	***1.85***	***13.02***	***0.56***	***0.28***	***1.73***	***2.16***	**.**	**.**	**.**	***247.18***	**.**	***91.62***
Herbicides & desiccants																
Aminopyralid/ fluroxypyr	.	.	.	.	.	.	.	.	.	.	6.489	.	.	6.489	6.489	1.687
Clopyralid/ triclopyr	.	.	.	.	.	.	.	.	.	.	.	.	0.015	0.015	0.015	0.018
Glyphosate	.	.	.	.	.	.	.	.	.	.	37.711	24.089	0.193	61.993	48.977	78.301

Table 13 (cont.): **Brussels sprout: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	General weed control	Ground preparation	Glass house weed control	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Metazachlor	25.316	.	.	13.412	38.728	38.728	21.79
Pendimethalin	0.631	.	.	.	0.631	0.631	0.833
Propachlor	.	.	.	13.02	13.02	13.02	74.97
All herbicides & desiccants	***70.148***	***24.089***	***0.208***	***26.428***	***120.872***	***.***	***177.6***

Table 13 (cont.): **Brussels sprout: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Caterpillars	Caterpillars & aphids	General insect control	Mealy aphid	Peach potato aphid	Propagation insect control	Slugs	Total area treated (sp ha)	Total area treated (ha)	Basic quantity applied (kg)
Insecticides												
Chlorpyrifos	.	0.28	.	.	.	.	.	0.002	.	0.281	0.281	16.944
Cypermethrin	.	.	0.631	.	.	.	.	.	.	0.631	0.631	0.016
Lambda-cyhalothrin	65.078	.	2.164	.	1.848	.	.	.	.	69.09	15.796	1.005
Lambda-cyhalothrin/ pirimicarb	11.68	.	.	6.489	1.732	.	.	.	.	19.901	19.901	4.179
Pirimicarb	0.403	.	.	.	16.047	.	.	.	.	16.45	16.45	3.454
Pymetrozine	6.489	.	.	.	11.68	.	13.296	.	.	31.464	31.464	6.293
Spirotetramat	.	.	.	.	11.68	.	.	.	.	11.68	11.68	0.876
Thiacloprid	4.307	.	.	.	.	26.031	.	.	.	30.338	17.322	2.912
All Insecticides	***87.957***	***0.28***	***2.795***	***6.489***	***42.987***	***26.031***	***13.296***	***0.002***	.	***179.836***	.	***35.68***
Molluscicides												
Metaldehyde	.	.	.	.	.	.	.	.	1.863	1.863	1.863	0.233
Methiocarb	.	.	.	.	.	.	.	.	0.739	0.739	0.739	0.111
All molluscicides	.	.	.	.	.	.	.	.	***2.603***	***2.603***	.	***0.344***

Table 13 (cont.): **Brussels sprout: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Disease prevention	Glasshouse general hygiene	area treated (sp ha)	Total area treated (ha)	Basic quantity applied (kg)
Biological controls					
Bacillus subtilis	0.28	.	0.28	0.28	.
All biological controls	***0.28***	.	***0.28***	***.***	***.***
Disinfectants					
Acetic acid/ hydrogen peroxide/ peracetic acid	.	0.185	0.185	0.185	40.31
All disinfectants	.	***0.185***	***0.185***	***.***	***40.31***

Table 14: **Autumn cabbage: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Blackspot	Disease prevention	General fungal control	General weed control	Ground preparation	Leaf spot	Propagation botrytis	Propagation damping off	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides											
Boscalid/ pyraclostrobin	.	0.011	.	.	.	.	.	.	0.011	0.011	0.004
Chlorothalonil	.	0.022	0.009	.	.	.	.	.	0.031	0.013	0.037
Chlorothalonil/ metalaxyl-M	1.939	.	0.462	.	.	.	.	.	2.401	2.093	2.581
Difenoconazole	.	.	1.939	.	.	0.462	.	.	2.401	2.093	0.18
Fosetyl-aluminium	.	.	.	.	.	.	0.022	.	0.022	0.011	0.268
Propamocarb hydrochloride	.	0.011	.	.	.	.	.	.	0.011	0.011	0.04
Tolclofos-methyl	.	.	.	.	.	.	.	0.011	0.011	0.011	0.112
All fungicides	***1.939***	***0.045***	***2.41***	***.***	***.***	***0.462***	***0.022***	***0.011***	***4.888***	***.***	***3.221***
Herbicides & desiccants											
Glyphosate	.	.	.	0.481	0.154	.	.	.	0.635	0.635	0.675
Metazachlor	.	.	.	2.093	.	.	.	.	2.093	2.093	1.569
All herbicides & desiccants	***.***	***.***	***.***	***2.573***	***0.154***	***.***	***.***	***.***	***2.727***	***.***	***2.244***

Table 14 (cont.): **Autumn cabbage: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Disease prevention	General insect control	Peach potato aphid	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides								
Chlorpyrifos	.	0.011	.	.	.	0.011	0.011	0.67
Garlic Extract	.	.	.	0.002	.	0.002	0.002	0.007
Lambda-cyhalothrin	0.011	.	.	0.462	.	0.473	0.165	0.005
Lambda-cyhalothrin/ pirimicarb	.	.	.	1.939	.	1.939	1.939	0.407
Pirimicarb	0.011	.	.	.	.	0.011	0.011	0.002
Pymetrozine	.	.	.	.	0.011	0.011	0.011	0.002
All insecticides	***0.022***	***0.011***	***.***	***2.403***	***0.011***	***2.448***	***.***	***1.094***
Biological controls								
Bacillus subtilis	.	.	0.011	.	.	0.011	0.011	.
All biological controls	***.***	***.***	***0.011***	***.***	***.***	***0.011***	***.***	***.***

Table 15: **Spring cabbage: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Blackspot	Disease prevention	General fungal control	Leaf spot	Propagation botrytis	Propagation damping off	Ringspot	General weed control	Ground preparation	Pre-emergence weed control	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides														
Azoxystrobin	.	.	2.596	0.308	.	.	.	.	.	.	.	2.904	2.904	0.401
Boscalid/ pyraclostrobin	.	0.078	.	.	.	.	.	.	.	.	.	0.078	0.078	0.026
Chlorothalonil	.	0.156	0.006	2.248	.	.	.	.	.	.	.	2.411	1.358	2.45
Chlorothalonil/ metalaxyl-M	1.298	.	.	.	.	.	.	.	.	.	.	1.298	1.298	1.395
Difenoconazole	.	.	25.939	.	.	.	2.319	.	.	.	.	28.258	17.235	2.054
Fosetyl-aluminium	.	.	.	.	0.156	.	.	.	.	.	.	0.156	0.078	1.878
Propamocarb hydrochloride	.	0.078	.	.	.	.	.	.	.	.	.	0.078	0.078	0.282
Tolclofos-methyl	.	.	.	.	.	0.078	.	.	.	.	.	0.078	0.078	0.782
All fungicides	***1.298***	***0.313***	***28.541***	***2.556***	***0.156***	***0.078***	***2.319***	**.**	**.**	**.**	**.**	***35.262***	**.**	***9.269***
Herbicides & desiccants														
Diquat	.	.	.	.	.	.	.	.	.	11.023	.	11.023	11.023	2.205
Glyphosate	.	.	.	.	.	.	.	1.753	13.929	.	.	15.682	15.682	17.253
Metazachlor	.	.	.	.	.	.	.	2.855	.	11.023	4.915	18.793	18.793	13.446
Pendimethalin	.	.	.	.	.	.	.	.	.	.	0.308	0.308	0.308	0.407
Propachlor	.	.	.	.	.	.	.	.	.	.	2.904	2.904	2.904	6.673
All herbicides & desiccants	**.**	**.**	**.**	**.**	**.**	**.**	**.**	***4.608***	***13.929***	***22.046***	***8.126***	***48.709***	**.**	***39.983***

Table 15 (cont.): Spring cabbage: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms), and reasons for use.

Pesticide type & formulation	Aphids	Cabbage root fly	Caterpillars	General insect control	Peach potato aphid	Disease prevention	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides									
Chlorpyrifos	.	0.078	1.94	.	.	.	2.019	1.048	6.557
Garlic Extract	.	.	.	0.002	.	.	0.002	0.002	0.005
Lambda-cyhalothrin	0.078	.	0.308	2.596	.	.	2.982	2.982	0.01
Lambda-cyhalothrin/pirimicarb	.	.	.	14.64	.	.	14.64	14.64	2.38
Pirimicarb	11.101	.	.	.	.	.	11.101	11.101	1.56
Pymetrozine	.	.	.	.	0.078	.	0.078	0.078	0.016
All insecticides	***11.18***	***0.078***	***2.248***	***17.237***	***0.078***	***.***	***30.821***	***.***	***10.527***
Biological controls									
Bacillus subtilis	.	.	.	.	.	0.078	0.078	0.078	.
All biological controls	***.***	***.***	***.***	***.***	***.***	***0.078***	***0.078***	***0.078***	***.***

Table 16: **Winter cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Disease prevention	General fungal control	General weed control	Ground preparation	Propagation botrytis	Propagation damping off	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides										
Azoxystrobin	.	9.725	.	.	.	.	.	9.725	9.725	1.216
Boscalid/ pyraclostrobin	0.112	.	.	.	.	.	.	0.112	0.112	0.037
Chlorothalonil	0.223	0.038	.	.	.	.	.	0.262	0.121	0.318
Difenoconazole	.	22.703	.	.	.	.	.	22.703	16.214	1.46
Fosetyl-aluminium	.	.	.	.	0.223	.	.	0.223	0.112	2.68
Propamocarb hydrochloride	0.112	.	.	.	.	.	.	0.112	0.112	0.403
Tolclofos-methyl	.	.	.	.	.	0.112	.	0.112	0.112	1.117
All fungicides	***0.447***	***32.467***	***.***	***.***	***0.223***	***0.112***	***.***	***33.248***	***.***	***7.229***
Herbicides & desiccants										
Aminopyralid/ fluroxypyr	.	.	6.489	.	.	.	.	6.489	6.489	1.687
Glyphosate	.	.	.	9.381	.	.	.	9.381	9.381	7.795
Metazachlor	.	.	6.489	.	.	.	12.617	19.106	19.106	11.574
Propachlor	.	.	.	.	.	.	9.725	9.725	9.725	23.341
Propyzamide	.	.	9.725	.	.	.	.	9.725	9.725	3.89
All herbicides & desiccants	***.***	***.***	***22.703***	***9.381***	***.***	***.***	***22.342***	***54.426***	***.***	***48.286***

Table 16: **Winter cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Caterpillars & aphids	Disease prevention	General insect control	Peach potato aphid	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides									
Chlorpyrifos		0.112	.	.	.	.	0.112	0.112	6.699
Garlic Extract	.	.	.	.	0.01	.	0.01	0.01	0.031
Lambda-cyhalothrin	0.112	.	.	.	15.509	.	15.62	12.729	0.083
Lambda-cyhalothrin/pirimicarb	.	.	6.489	.	.	.	6.489	6.489	1.363
Pirimicarb	0.112	.	.	.	.	.	0.112	0.112	0.023
Pymetrozine	6.489	.	.	.	.	0.112	6.601	6.601	1.32
All insecticides	***6.712***	***0.112***	***6.489***	***.***	***15.518***	***0.112***	***28.943***	***.***	***9.519***
Biological controls									
Bacillus subtilis	.	.	.	0.112	.	.	0.112	0.112	.
All biological controls	***.***	***.***	***.***	***0.112***	***.***	***.***	***0.112***	***.***	***.***

Table 17: **Summer cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Alternaria & Ringspot	Disease prevention	General fungal control	Propagation botrytis	Propagation damping off	Ring spot	White blister	General weed control	Ground preparation	Pre-emergence weed control	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides													
Azoxystrobin	.	.	6.942	.	.	.	.	.	.	.	6.942	3.471	1.562
Boscalid/ pyraclostrobin	.	0.084	.	.	.	.	.	.	.	.	0.084	0.084	0.028
Carbendazim	.	.	.	.	0.003	.	.	.	.	.	0.003	0.003	0.004
Chlorothalonil	.	0.168	.	.	.	.	.	.	.	.	0.168	0.084	0.209
Chlorothalonil/ metalaxyl-M	.	.	.	.	.	.	4.339	.	.	.	4.339	4.339	4.664
Difenoconazole	.	8.677	3.471	.	.	4.64	.	.	.	.	16.786	12.447	1.259
Fosetyl-aluminium	.	.	.	0.168	.	.	.	.	.	.	0.168	0.084	2.011
Propamocarb hydrochloride	.	0.084	.	.	.	.	.	.	.	.	0.084	0.084	0.302
Prothioconazole	4.339	.	.	.	.	.	.	.	.	.	4.339	4.339	0.833
Tolclofos-methyl	.	.	.	.	0.084	.	.	.	.	.	0.084	0.084	0.838
All fungicides	***4.339***	***9.012***	***10.413***	***0.168***	***0.087***	***4.64***	***4.339***	**.**	**.**	**.**	***32.994***	**.**	***11.71***
Herbicides & desiccants													
Clomazone	.	.	.	.	.	.	.	10.413	.	.	10.413	3.471	0.725
Diquat	.	.	.	.	.	.	.	.	.	1.298	1.298	1.298	0.26
Glyphosate	.	.	.	.	.	.	.	0.308	10.274	.	10.582	10.582	14.047

Table 17 (cont.): **Summer cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	General weed control	Ground preparation	Pre-emergence weed control	Sealer	Aphids	Cabbage root fly	Cabbage white butterfly	Caterpillars	General insect control	Peach potato aphid	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Metazachlor	14.751	.	2.9	4.638	.	.	.	.	.	.	22.289	15.347	16.717
Pendimethalin	3.471	.	.	.	.	.	.	.	.	.	3.471	3.471	4.582
All herbicides & desiccants	***28.942***	***10.274***	***4.198***	***4.638***	**.**	**.**	**.**	**.**	**.**	**.**	***48.053***	**.**	***36.33***
Insecticides													
Chlorpyrifos	.	.	.	.	.	0.392	.	.	.	.	0.392	0.392	5.322
Deltamethrin	.	.	.	.	1.602	.	.	3.779	.	.	5.381	5.381	0.04
Garlic Extract	.	.	.	.	.	.	0.308	.	.	.	0.308	0.308	10.672
Indoxacarb	.	.	.	.	.	.	.	3.471	3.471	.	6.942	3.471	0.177
Lambda-cyhalothrin	.	.	.	.	1.686	.	.	4.339	.	.	6.025	6.025	0.031
Lambda-cyhalothrin/ pirimicarb	.	.	.	.	.	.	.	.	9.407	.	9.407	9.407	1.894
Pirimicarb	.	.	.	.	7.893	.	.	.	.	.	7.893	7.893	0.972
Pymetrozine	.	.	.	.	3.471	.	.	.	.	0.084	3.555	3.555	0.537
Thiacloprid	.	.	.	.	4.339	.	.	.	.	.	4.339	4.339	0.417
All insecticides	**.**	**.**	**.**	**.**	***18.99***	***0.392***	***0.308***	***11.588***	***12.878***	***0.084***	***44.24***	**.**	***20.062***

Table 17 (cont.): **Summer cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Alternaria & Ringspot	Disease prevention	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Biological controls					
Bacillus subtilis	.	0.084	0.084	0.084	.
All biological controls	**.**	***0.084***	***0.084***	***0.084***	**.**

Table 18: **Savoy: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Alternaria & Ring spot	Blackspot	Disease prevention	General fungal control	Leaf spot	Propagation botrytis	Propagation damping off	White blister	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides											
Azoxystrobin	.	.	.	32.52	.	.	.	.	32.52	15.166	6.885
Azoxystrobin / difenoconazole	.	.	12.211	11.684	.	.	.	.	23.895	23.895	7.766
Boscalid / pyraclostrobin	.	.	0.57	.	.	.	.	.	0.57	0.57	0.19
Carbendazim	.	.	.	.	.	.	<1	.	<1	<1	<1
Chlorothalonil	.	.	1.14	6.505	1.232	.	.	.	8.877	7.679	10.784
Chlorothalonil / metalaxyl-M	.	3.236	.	1.221	.	.	.	10.841	15.298	14.99	16.446
Difenoconazole	.	.	25.161	105.502	1.622	.	.	.	132.284	75.881	9.759
Fosetyl-aluminium	.	.	.	.	.	1.14	.	.	1.14	1.14	13.675
Propamocarb hydrochloride	.	.	0.57	.	.	.	.	.	0.57	0.57	2.057
Prothioconazole	10.841	.	.	6.489	.	.	.	.	17.33	17.33	3.327
Tebuconazole	.	.	.	0.759	.	.	.	.	0.759	0.759	0.19
Tebuconazole / trifloxystrobin	.	.	.	.	12.978	.	.	.	12.978	12.978	3.893
Tolclofos-methyl	.	.	.	.	.	.	0.57	.	0.57	0.57	5.698
All fungicides	***10.841***	***3.236***	***39.651***	***164.68***	***15.831***	***1.14***	***0.57***	***10.841***	***246.79***	***.***	***80.671***

Table 18 (cont.): **Savoy: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	General weed control	Ground preparation	Pre-emergence weed control	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Herbicides & desiccants							
Aminopyralid/ fluroxypyr	6.489	.	.	.	6.489	6.489	1.687
Clomazone	26.031	.	.	.	26.031	8.677	1.812
Diquat	4.534	.	.	.	4.534	4.534	0.907
Glyphosate	10.774	48.445	.	.	59.219	58.576	72.172
Metazachlor	61.788	.	6.798	40.437	109.023	91.361	75.321
Pendimethalin	18.168	.	.	.	18.168	18.168	19.35
Propachlor	8.732	.	.	6.489	15.221	15.221	28.148
All herbicides & desiccants	***136.517***	***48.445***	***6.798***	***46.926***	***238.685***	***.***	***199.396***

Table 18 (cont.): **Savoy: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Caterpillars	Caterpillars & aphids	Diamondback moth	General insect control	Insect deterrence	Peach potato aphid	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides											
Chlorpyrifos	.	0.878	9.964	.	.	.	.	.	10.842	10.226	43.525
Cypermethrin	.	.	38.933	4.99	.	.	.	.	43.923	15.473	1.098
Deltamethrin	1.602	.	8.985	.	9.24	.	.	.	19.827	16.747	0.149
Garlic Extract	.	.	.	.	.	0.004	3.204	.	3.208	3.208	10.267
Indoxacarb	.	.	8.677	.	.	8.677	.	.	17.354	8.677	0.443
Lambda-cyhalothrin	11.157	.	10.841	.	.	20.42	.	.	42.418	35.755	0.246
Lambda-cyhalothrin/pirimicarb	6.489	1.285	.	9.693	.	20.499	.	.	37.966	37.966	6.958
Oxamyl	.	0.308	.	.	.	.	.	.	0.308	0.308	0.609
Pirimicarb	48.219	.	.	.	.	.	.	.	48.219	22.263	9.171
Pymetrozine	15.166	.	8.677	.	.	6.489	.	0.57	30.902	22.225	5.313
Spirotetramat	.	.	.	.	.	6.489	.	.	6.489	6.489	0.487
Thiacloprid	10.841	.	.	.	.	.	.	.	10.841	10.841	1.041
All insecticides	***93.474***	***2.471***	***86.078***	***14.683***	***9.24***	***62.578***	***3.204***	***0.57***	***272.297***	***.***	***79.306***

Table 18 (cont.): **Savoy: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Slugs	Disease prevention	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Molluscicides					
Methiocarb	0.039	.	0.039	0.039	0.005
All molluscicides	***0.039***	***.***	***0.039***	***.***	***0.005***
Biological controls					
Bacillus subtilis	.	0.57	0.57	0.57	.
All biological controls	***.***	***0.57***	***0.57***	.	.

Table 19: **Hard/white cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Alternaria & Ring spot	Blackspot	Disease prevention	General fungal control	Leaf spot	Mildew	Propagation botrytis	Propagation damping off	White blister	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides												
Azoxystrobin	.	.	.	14.912	.	.	.	.	.	14.912	3.728	3.355
Azoxystrobin/ difenoconazole	.	9.534	.	19.259	.	.	.	.	.	28.793	14.492	9.358
Boscalid/ pyraclostrobin	.	.	0.201	.	.	.	.	.	.	0.201	0.201	0.067
Chlorothalonil	.	.	0.402	9.725	.	.	.	.	.	10.128	9.926	12.659
Chlorothalonil/ metalaxyl-M	.	9.725	.	.	.	4.767	.	.	13.016	27.508	27.508	29.571
Difenoconazole	.	9.534	26.031	42.645	.	.	.	.	.	78.211	47.45	5.866
Fosetyl-aluminium	.	.	.	.	.	.	0.402	.	.	0.402	0.201	4.827
Propamocarb hydrochloride	.	.	0.201	.	.	.	.	.	.	0.201	0.201	0.726
Prothioconazole	13.016	.	.	9.725	.	.	.	.	.	22.741	22.741	4.366
Tebuconazole	.	.	.	8.495	.	.	.	.	.	8.495	8.495	1.937
Tebuconazole/ trifloxystrobin	.	.	.	.	6.489	.	.	.	.	6.489	6.489	1.947
Tolclofos-methyl	.	.	.	.	.	.	.	0.201	.	0.201	0.201	2.011
All fungicides	***13.016***	***28.793***	***26.836***	***104.762***	***6.489***	***4.767***	***0.402***	***0.201***	***13.016***	***198.282***	***.***	***76.691***

Table 19 (cont.): **Hard/white cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	General weed control	Ground preparation	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Herbicides & desiccants						
Clomazone	11.184	.	.	11.184	3.728	0.778
Glyphosate	21.695	19.505	.	41.199	36.432	55.378
Metazachlor	33.925	.	7.648	41.573	34.117	31.18
Pendimethalin	3.728	.	.	3.728	3.728	4.921
Propachlor	.	.	4.767	4.767	4.767	27.458
All herbicides & desiccants	***70.531***	***19.505***	***12.415***	***102.451***	***.***	***119.715***

Table 19 (cont.): **Hard/white cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Caterpillars	General insect control	Mealy aphid	Peach potato aphid	Disease prevention	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides										
Chlorpyrifos	.	0.201	.	.	.	.	.	0.201	0.201	12.067
Cypermethrin	.	.	19.467	.	.	.	.	19.467	6.489	0.487
Deltamethrin	.	.	7.456	.	.	.	.	7.456	3.728	0.056
Indoxacarb	.	.	3.728	3.728	.	.	.	7.456	3.728	0.19
Lambda-cyhalothrin	27.764	.	13.016	.	.	.	.	40.78	21.712	0.443
Lambda-cyhalothrin/pirimicarb	9.725	.	.	14.613	.	.	.	24.338	24.338	4.798
Pirimicarb	39.938	.	.	.	.	.	.	39.938	23.232	7.029
Pymetrozine	3.728	.	3.728	.	.	4.968	.	12.424	8.696	2.112
Spirotetramat	.	.	.	9.725	.	.	.	9.725	9.725	0.729
Thiacloprid	13.217	.	.	.	9.534	.	.	22.751	17.984	2.184
All insecticides	***94.372***	***0.201***	***47.394***	***28.066***	***9.534***	***4.968***	***.***	***184.536***	***.***	***30.095***
Biological controls										
Bacillus subtilis	.	.	.	.	.	.	0.201	0.201	0.201	.
All biological controls	***.***	***.***	***.***	***.***	***.***	***.***	***0.201***	***0.201***	***.***	***.***

Table 20: **Red cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Blackspot	Disease prevention	General fungal control	General weed control	Ground preparation	Propagation botrytis	Propagation damping off	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides										
Boscalid/pyraclostrobin	.	0.061	.	.	.	.	.	0.061	0.061	0.021
Chlorothalonil	.	0.123	0.003	.	.	.	.	0.126	0.062	0.156
Chlorothalonil/metalaxyl-M	0.641	.	0.816	.	.	.	.	1.457	1.457	1.566
Difenoconazole	.	.	0.641	.	.	.	.	0.641	0.641	0.048
Fosetyl-aluminium	.	.	.	.	.	0.123	.	0.123	0.061	1.475
Propamocarb hydrochloride	.	0.061	.	.	.	.	.	0.061	0.061	0.222
Tebuconazole	.	.	0.816	.	.	.	.	0.816	0.816	0.204
Tolclofos-methyl	.	.	.	.	.		0.061	0.061	0.061	0.614
All fungicides	***0.641***	***0.246***	***2.275***	***.***	***.***	***0.123***	***0.061***	***3.346***	***.***	***4.306***
Herbicides & desiccants										
Glyphosate	.	.	.	3.397	0.816	.	.	4.213	4.213	4.55
Metazachlor	.	.	.	6.663	.	.	.	6.663	6.663	4.997
Pendimethalin	.	.	.	0.816	.	.	.	0.816	0.816	0.979
All herbicides & desiccants	***.***	***.***	***.***	***10.876***	***0.816***	***.***	***.***	***11.692***	***.***	***10.526***

Table 20 (cont.): **Red cabbage: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Disease prevention	General insect control	Peach potato aphid	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides								
Chlorpyrifos	.	0.061	.	.	.	0.061	0.061	3.687
Garlic Extract		.	.	0.001	.	0.001	0.001	0.002
Lambda-cyhalothrin	0.061	.	.	0.816	.	0.877	0.877	0.013
Lambda-cyhalothrin/pirimicarb	.	.	.	0.641	.	0.641	0.641	0.135
Pymetrozine	.	.	.	.	0.061	0.061	0.061	0.012
Thiacloprid	0.061	.	.	.	.	0.061	0.061	0.006
All insecticides	***0.123***	***0.061***	***.***	***1.457***	***0.061***	***1.703***	***.***	***3.854***
Biological controls								
Bacillus subtilis	.	.	0.061	.	.	0.061	0.061	.
All biological controls	***.***	***.***	***0.061***	***.***	***.***	***0.061***	***.***	***.***

Table 21: **Autumn cauliflower: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Alternaria & Ring spot	Blackspot	Disease prevention	General fungal control	Leaf spot	Mildew	Propagation botrytis	Propagation damping off	White blister	General weed control	Ground preparation	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity used (kg)
Fungicides															
Azoxystrobin	.	.	.	11.698	.	.	.	.	.	.	.	.	11.698	3.899	2.73
Azoxystrobin/ difenoconazole	.	17.354	1.16	17.354	.	.	.	.	.	.	.	.	35.868	9.837	11.657
Boscalid/ pyraclostrobin	.	.	0.027	.	.	.	.	.	.	.	.	.	0.027	0.027	0.009
Chlorothalonil	.	.	0.055	0.009	0.924	.	.	.	.	.	.	.	0.987	0.492	1.001
Chlorothalonil/ metalaxyl-M	.	1.939	.	.	.	8.677	.	.	3.246	.	.	.	13.862	13.862	14.901
Difenoconazole	.	17.354	7.651	5.838	.	.	.	.	.	.	.	.	30.843	18.92	2.313
Fosetyl-aluminium	.	.	.	.	.	.	0.055	.	.	.	.	.	0.055	0.027	0.658
Propamocarb hydrochloride	.	.	0.027	.	.	.	.	.	.	.	.	.	0.27	0.027	0.099
Prothioconazole	3.246	.	.	.	.	.	.	.	.	.	.	.	3.246	3.246	0.623
Tebuconazole	.	.	.	8.677	.	.	.	.	.	.	.	.	8.677	8.677	2.169
Tolclofos-methyl	.	.	.	.	.	.	.	0.027	.	.	.	.	0.027	0.027	0.274
All fungicides	***3.246***	***36.647***	***8.92***	***43.576***	***0.924***	***8.677***	***0.055***	***0.027***	***3.246***	***.***	***.***	***.***	***105.318***	***.***	***36.435***
Herbicides & desiccants															
Clomazone	.	.	.	.	.	.	.	.	.	11.698	.	.	11.698	3.899	0.814
Glyphosate	.	.	.	.	.	.	.	.	.	18.297	4.606	.	22.902	14.225	33.119
Metazachlor	.	.	.	.	.	.	.	.	.	20.443	.	1.073	21.516	13.717	16.137
Pendimethalin	.	.	.	.	.	.	.	.	.	3.899	.	.	3.899	3.899	5.147
Propachlor	.	.	.	.	.	.	.	.	.	.	.	8.677	8.677	8.677	49.98
All herbicides & desiccants	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***54.337***	***4.606***	***9.751***	***68.693***	***.***	***105.198***

Table 21 (cont.) **Autumn cauliflower: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Caterpillars	Caterpillars & aphids	General insect control	Insect deterrence	Mealy aphid	Peach potato aphid	Disease prevention	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides												
Chlorpyrifos	.	0.027	0.924	.	.	.	.	.	.	0.951	0.489	2.532
Cypermethrin	.	.	.	0.4	.	.	.	.	.	0.4	0.2	0.01
Deltamethrin	.	.	3.899	.	.	.	.	.	.	3.899	3.899	0.029
Garlic Extract	.	.	.	.	0.002	1.939	.	.	.	1.941	1.941	6.21
Indoxacarb	.	.	3.899	.	3.899	.	.	.	.	7.799	3.899	0.199
Lambda-cyhalothrin	47.285	.	3.246	.	.	.	.	.	.	50.531	15.822	0.687
Lambda-cyhalothrin/ pirimicarb	.	.	.	1.939	6.711	.	.	.	.	8.65	8.65	1.489
Pirimicarb	3.927	.	.	.	.	.	.	.	.	3.927	3.927	0.396
Pymetrozine	3.899	.	3.899	.	.	.	.	8.704	.	16.503	12.604	2.911
Thiacloprid	3.273	.	.	.	.	.	17.354	.	.	20.627	11.95	1.98
All insecticides	***58.384***	***0.027***	***15.868***	***2.339***	***10.613***	***1.939***	***17.354***	***8.704***	***.***	***115.229***	***.***	***16.442***
Biological controls												
Bacillus subtilis	.	.	.	.	.	.	.	.	0.027	0.027	0.027	.
All biological controls	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***0.027***	***0.027***	***0.027***	***.***

Table 22: **Summer cauliflower: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Alternaria & Ring spot	Blackspot	Disease prevention	General fungal control	Leaf spot	Mildew	Propagation botrytis	Propagation damping off	White blister	General weed control	Ground preparation	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides															
Azoxystrobin	.	.	.	21.423	.	.	.	.	.	.	.	.	21.423	13.625	3.945
Azoxystrobin/ difenoconazole	.	17.354	1.446	17.354	.	.	.	.	.	.	.	.	36.154	10.123	11.75
Boscalid/ pyraclostrobin	.	.	0.328	.	.	.	.	.	.	.	.	.	0.328	0.328	0.109
Carbendazim	.	.	.	.	.	.	.	<0.1	.	.	.	.	<0.1	<0.1	<0.1
Chlorothalonil	.	.	0.655	0.014	0.924	.	.	.	.	.	.	.	1.594	0.793	1.757
Chlorothalonil/ metalaxyl-M	.	3.236	.	.	.	8.677	.	.	3.257	.	.	.	15.17	15.17	16.308
Difenoconazole	.	17.354	7.959	19.048	.	.	.	.	.	.	.	.	44.361	32.427	3.084
Fosetyl-aluminium	.	.	.	.	.	.	0.655	.	.	.	.	.	0.655	0.328	7.861
Propamocarb hydrochloride	.	.	0.328	.	.	.	.	0.021	.	.	.	.	0.349	0.349	2.717
Prothioconazole	3.257	.	.	.	.	.	.	.	.	.	.	.	3.257	3.257	0.625
Tebuconazole	.	.	.	8.677	.	.	.	.	.	.	.	.	8.677	8.677	2.169
Tolclofos-methyl	.	.	.	.	.	.	.	0.349	.	.	.	.	0.349	0.349	3.488
All fungicides	***3.257***	***37.945***	***10.715***	***66.517***	***0.924***	***8.677***	***0.655***	***0.37***	***3.257***	***.***	***.***	***.***	***132.317***	***.***	***53.815***
Herbicides															
Clomazone	.	.	.	.	.	.	.	.	.	9.046	.	.	9.046	5.147	0.601
Glyphosate	.	.	.	.	.	.	.	.	.	18.787	9.908	.	28.695	20.018	36.699
Metazachlor	.	.	.	.	.	.	.	.	.	21.189	.	10.814	32.003	28.104	21.571
Pendimethalin	.	.	.	.	.	.	.	.	.	4.772	.	.	4.773	4.773	5.846
Propachlor	.	.	.	.	.	.	.	.	.	0.873	.	18.402	19.276	19.276	74.578
All herbicides	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***54.668***	***9.908***	***29.217***	***93.792***	***.***	***139.295***

Table 22 (cont.): **Summer cauliflower: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Caterpillars	Caterpillars & aphids	General insect control	Mealy aphid	Peach potato aphid	Disease prevention	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides											
Chlorpyrifos	.	0.636	1.797	.	.	.	.	.	2.433	1.971	21.622
Cypermethrin	.	.	.	5.421	.	.	.	.	5.421	5.205	0.136
Deltamethrin	.	.	4.207	.	.	.	.	.	4.207	4.207	0.032
Garlic Extract	.	.	.	.	0.004	.	.	.	0.004	0.004	0.012
Indoxacarb	.	.	3.899	.	3.899	.	.	.	7.799	3.899	0.199
Lambda-cyhalothrin	47.285	.	3.257	.	9.725	.	.	.	60.267	25.558	0.711
Lambda-cyhalothrin/ pirimicarb	.	.	.	.	8.009	.	.	.	8.009	8.009	1.354
Pirimicarb	7.483	.	.	4.99	.	.	.	.	12.473	12.473	1.962
Pymetrozine	3.899	.	3.899	.	.	.	9.005	.	16.803	12.904	2.971
Thiacloprid	3.584	.	.	.	.	17.354	.	.	20.938	12.261	2.01
All insecticides	***62.252***	***0.636***	***17.06***	***10.41***	***21.637***	***17.354***	***9.005***	***.***	***138.354***	***.***	***31.008***
Biological controls											
Bacillus subtilis	.	.	.	.	.	.	.	0.328	0.328	0.328	.
All biological controls	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***0.328***	***0.328***	***.***	***.***

Table 23: **Winter cauliflower: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Blackspot	Disease prevention	General fungal control	Mildew	Propagation botrytis	Propagation damping off	Seed treatment	General weed control	Ground preparation	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides													
Azoxystrobin	.	.	11.698	.	.	.	.	.	.	.	11.698	3.899	2.73
Azoxystrobin/ difenoconazole	17.354	2.892	17.354	.	.	.	.	.	.	.	37.6	11.569	12.22
Boscalid/ pyraclostrobin	.	0.191	.	.	.	.	.	.	.	.	0.191	0.191	0.064
Chlorothalonil	.	0.382	.	.	.	.	.	.	.	.	0.382	0.191	0.478
Chlorothalonil/ metalaxyl-M	.	.	.	8.677	.	.	.	.	.	.	8.677	8.677	9.328
Difenoconazole	17.354	2.892	15.579	.	.	.	.	.	.	.	35.825	24.552	2.687
Fosetyl-aluminium	.	.	.	.	0.382	.	.	.	.	.	0.382	0.191	4.587
Iprodione	.	.	.	.	.	.	0.191	.	.	.	0.191	0.191	0.018
Propamocarb hydrochloride	.	0.191	.	.	.	.	.	.	.	.	0.191	0.191	0.69
Tebuconazole	.	.	8.677	.	.	.	.	.	.	.	8.677	8.677	2.169
Thiram	.	.	.	.	.	.	0.218	.	.	.	0.218	0.218	0.024
Tolclofos-methyl	.	.	.	.	.	0.191	.	.	.	.	0.191	0.191	1.911
All fungicides	***34.708***	***6.548***	***53.309***	***8.677***	***0.382***	***0.191***	***0.409***	***.***	***.***	***.***	***104.225***	***.***	***36.905***
Herbicides													
Clomazone	.	.	.	.	.	.	.	11.698	.	.	11.698	3.899	0.814
Glyphosate	.	.	.	.	.	.	.	23.843	5.687	.	29.53	20.853	40.043
Metazachlor	.	.	.	.	.	.	.	14.59	.	2.796	17.385	9.587	13.039
Pendimethalin	.	.	.	.	.	.	.	3.899	.	.	3.899	3.899	5.147
Propachlor	.	.	.	.	.	.	.	.	.	8.677	8.677	8.677	49.98
All herbicides	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***54.03***	***5.687***	***11.473***	***71.19***	***.***	***109.024***

Table 23 (cont.): **Winter cauliflower: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Caterpillars	Caterpillars & aphids	General insect control	Mealy aphid	Peach potato aphid	Disease prevention	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides											
Chlorpyrifos	.	0.191	.	.	.	.	.	.	0.191	0.191	11.467
Cypermethrin	.	.	5.191	0.4	.	.	.	.	5.591	2.796	0.14
Deltamethrin	.	.	3.899	.	.	.	.	.	3.899	3.899	0.029
Indoxacarb	.	.	3.899	.	3.899	.	.	.	7.799	3.899	0.199
Lambda-cyhalothrin	47.285	.	.	.	.	.	.	.	47.285	12.576	0.67
Lambda-cyhalothrin/ pirimicarb	6.489	.	.	.	3.899	.	.	.	10.388	10.388	1.854
Pirimicarb	9.282	.	.	.	.	.	.	.	9.282	6.686	1.52
Pymetrozine	3.899	.	3.899	.	6.489	.	8.868	.	23.156	19.256	4.241
Thiacloprid	0.191	.	.	.	.	17.354	.	.	17.545	8.868	1.684
All insecticides	***67.146***	***0.191***	***16.889***	***0.4***	***14.288***	***17.354***	***8.868***	***.***	***125.136***	***.***	***21.805***
Biological controls											
Bacillus subtilis	.	.	.	.	.	.	.	0.191	0.191	0.191	.
All biological controls	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***0.191***	***0.191***	***.***	***.***

Table 24: Kale: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type & formulation	General fungal control	General insect control	General weed control	Ground preparation	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides							
Chlorothalonil/metalaxyl-M	0.873	.	.	.	0.873	0.873	0.939
All fungicides	***0.873***	***.***	***.***	***.***	***0.873***	***.***	***0.939***
Herbicides & desiccants							
Glyphosate	.	.	.	0.873	0.873	0.873	0.943
Metazachlor	.	.	0.873	.	0.873	0.873	0.655
Pendimethalin	.	.	0.873	.	0.873	0.873	1.048
All herbicides & desiccants	***.***	***.***	***1.746***	***0.873***	***2.62***	***.***	***2.646***
Insecticides							
Bifenazate	0.873	.	.	.	0.873	0.873	0.21
Lambda-cyhalothrin	.	0.873	.	.	0.873	0.873	0.013
All insecticides	***0.873***	***0.873***	***.***	***.***	***1.746***	***.***	***0.223***

Table 25: Pea: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type & formulation	Black bean aphid	Desiccation	Disease prevention	General weed control	Ground preparation	Pre-emergence weed control	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides									
Chlorothalonil/ metalaxyl-M	.	.	1.296	.	.	.	1.296	1.296	1.393
All fungicides	***.***	***.***	***1.296***	***.***	***.***	***.***	***1.296***	***.***	***1.393***
Herbicides & desiccants									
Bentazone	.	.	.	14.458	.	.	14.458	14.458	20.755
Glyphosate	.	14.458	.	.	1.296	.	15.754	15.754	22.686
Imazamox/ pendimethalin	.	.	.	.	.	1.296	1.296	1.296	1.556
All herbicides & desiccants	***.***	***14.458***	***.***	***14.458***	***1.296***	***1.296***	***31.509***	***.***	***44.997***
Insecticides									
Pirimicarb	1.296	.	.	.	.	.	1.296	1.296	0.272
All insecticides	***1.296***	***.***	***.***	***.***	***.***	***.***	***1.296***	***.***	***0.272***

Table 26: Bean: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type & formulation	Aphids	Black bean aphid	Desiccation	Disease prevention	General fungal control	General weed control	Ground preparation	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides											
Chlorothalonil	.	.	.	.	0.154	.	.	.	0.154	0.154	0.154
Chlorothalonil/ metalaxyl-M	.	.	.	1.296	.	.	.	.	1.296	1.296	1.393
All fungicides	***.***	***.***	***.***	***1.296***	***0.154***	***.***	***.***	***.***	***1.45***	***.***	***1.547***
Herbicides & desiccants											
Bentazone	.	.	.	.	.	0.573	.	.	0.573	0.573	0.822
Glyphosate	.	.	0.573	.	.	.	1.296	.	1.869	1.869	2.691
Imazamox/ pendimethalin	.	.	.	.	.	.	.	1.296	1.296	1.296	1.556
Pendimethalin	.	.	.	.	.	.	.	0.154	0.154	0.154	0.203
Linuron								0.154	0.154	0.154	0.055
All herbicides & desiccants	***.***	***.***	***0.573***	***.***	***.***	***0.573***	***1.296***	***1.604***	***4.046***	***.***	***5.327***
Insecticides											
Cypermethrin	0.573	.	.	.	.	.	.	.	0.573	0.573	0.011
Pirimicarb	.	1.296	.	.	.	.	.	.	1.296	1.296	0.272
All insecticides	***0.573***	***1.296***	***.***	***.***	***.***	***.***	***.***	***.***	***1.869***	***.***	***0.283***

Table 27: **Carrot: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Alternaria	Cavity spot	Crown rot	Disease prevention	General fungal control	Leaf disease	Mildew	Sclerotinia	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides											
Azoxystrobin	0.308	.	.	.	18.402	.	.	42.057	60.768	60.768	15.192
Azoxystrobin/difenoconazole	.	.	36.851	3.032	128.55	14.487	6.943	.	189.862	104.162	61.705
Boscalid/pyraclostrobin	.	.	.	.	115.974	.	.	.	115.974	63.055	38.397
Cyprodinil/fludioxonil	.	.	.	.	105.839	.	.	.	105.839	52.92	52.92
Fenpropimorph	.	.	57.337	.	24.297	.	.	.	81.634	72.957	61.225
Metalaxyl-M	.	110.964	.	3.032	38.973	.	.	.	152.969	152.969	88.725
Tebuconazole	.	11.595	1.296	.	104.813	.	.	.	117.704	74.854	27.977
Tebuconazole/trifloxystrobin	.	.	.	.	6.943	.	.	.	6.943	6.943	1.562
All fungicides	***0.308***	***122.56***	***95.484***	***6.063***	***543.791***	***14.487***	***6.943***	***42.057***	***831.693***	***.***	***347.703***

Table 27 (cont.): **Carrot: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	General weed control	Grass	Ground preparation	Pre-emergence weed control	Sealer	Soft weeds	Volunteer potatoes	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Herbicides & desiccants										
Clomazone	63.914	.	.	39.036	54.445	.	.	157.395	157.395	11.087
Dicamba/MCPA/mecoprop-P	.	.	.	.	10.382	.	.	10.382	10.382	19.02
Diquat	36.851	.	.	0.308	7.566	.	.	44.725	44.725	18.735
Glyphosate	53.483	.	74.347	.	.	.	.	127.831	127.831	132.806
Linuron	468.774	.	.	1.167	126.809	14.487	3.579	614.816	342.677	203.785
Metribuzin	6.943	.	.	.	.	.	.	6.943	6.943	4.86
Pendimethalin	122.275	.	.	39.895	139.561	.	.	301.73	301.73	342.344
Propaquizafop	89.931	.	.	.	.	.	.	89.931	89.931	8.993
Prosulfocarb	320.798	.	.	0.308	7.029	14.487	3.579	346.201	257.712	609.885
Tepraloxydim	35.058	6.943	.	.	.	.	.	42	42	3.049
All herbicides & desiccants	***1,198.03***	***6.943***	***74.347***	***80.714***	***345.792***	***28.974***	***7.158***	***1,741.95***	***.***	***1,354.56***

Table 27 (cont.): **Carrot: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Carrot root fly	General insect control	Nematodes	Unknown	Slugs	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides										
Deltamethrin	.	.	42.85	.	.	.	.	42.85	42.85	0.321
Lambda-cyhalothrin	7.484	31.147	490.279	301.474	.	.	.	830.384	298.652	9.779
Oxamyl	.	.	0.924	42.057	47.713	10.135	.	100.83	100.83	167.925
Pirimicarb	49.793	.	4.99	31.307	.	.	.	86.089	65.218	12.05
All insecticides	***57.277***	***31.147***	***539.042***	***374.838***	***47.713***	***10.135***	.	***1,060.15***	***.***	***190.078***
Molluscicides										
Methiocarb	.	.	.	.	.	.	0.308	0.308	0.308	0.037
All molluscicides	.	.	.	.	.	.	***0.308***	***0.308***	**.**	***0.037***

Table 28: **Parsnip: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Cavity spot	Crown rot	General fungal control	Leaf disease	Mildew /alternaria	Rust	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides									
Azoxystrobin	.	.	43.332	.	.	.	43.332	43.332	10.833
Azoxystrobin/difenoconazole	.	19.497	4.312	2.892	5.798	.	32.498	30.342	10.562
Boscalid/pyraclostrobin	.	.	50.777	.	.	.	50.777	50.777	16.96
Cyprodinil/fludioxonil	.	.	50.777	.	.	.	50.777	50.777	25.389
Fenpropimorph	.	2.892	70.822	.	.	.	73.714	52.021	55.285
Mancozeb	.	.	50.777	.	.	.	50.777	50.777	76.166
Metalaxyl-M	50.777	.	45.488	.	.	.	96.265	96.265	44.814
Tebuconazole	.	.	48.803	.	.	6.957	55.761	48.966	13.94
Tebuconazole/trifloxystrobin	.	.	56.575	.	.	.	56.575	56.575	12.729
All fungicides	***50.777***	***22.388***	***421.664***	***2.892***	***5.798***	***6.957***	***510.475***	***.***	***266.677***

Table 28 (cont.): **Parsnip: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	General weed control	Grass	Ground preparation	Pre-emergence weed control	Sealer	Soft weeds	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Herbicides & desiccants									
Dicamba/MCPA/mecoprop-P	.	.	.	.	5.832	.	5.832	5.832	10.684
Diquat	19.497	.	.	0.062	6.489	.	26.047	26.047	11.704
Glyphosate	35.579	.	15.636	.	.	.	51.215	51.215	51.465
Linuron	202.167	.	.	9.787	29.307	2.892	244.153	165.116	97.361
Metamitron	50.777	.	.	.	2.156	.	52.933	52.933	74.106
Pendimethalin	123.234	.	.	9.725	16.771	.	149.731	149.731	193.543
Propaquizafop	50.777	.	.	.	.	.	50.777	50.777	7.617
Prosulfocarb	114.434	.	.	0.062	6.643	2.892	124.03	117.541	210.038
Tepraloxydim	3.316	18.415	.	.	.	.	21.73	21.73	1.586
All herbicides & desiccants	***599.78***	***18.415***	***15.636***	***19.635***	***67.198***	***5.783***	***726.448***	***.***	***658.104***

Table 28 (cont.): **Parsnip: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Carrot root fly	General insect control	Nematodes	Slugs	Growth regulation	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides										
Deltamethrin	.	.	9.725	.	.	.	.	9.725	9.725	0.061
Lambda-cyhalothrin	0.462	17.496	81.757	464.795	.	.	.	564.511	163.869	6.418
Oxamyl	.	.	0.154	.	43.332	.	.	43.486	43.486	43.636
Pirimicarb	5.798	.	.	3.479	.	.	.	9.276	6.957	1.299
All insecticides	***6.26***	***17.496***	***91.637***	***468.274***	***43.332***	***.***	***.***	***626.998***	***.***	***51.414***
Molluscicides										
Methiocarb	.	.	.	.	.	0.062	.	0.062	0.062	0.007
All molluscicides	***.***	***.***	***.***	***.***	***.***	***0.062***	***.***	***0.062***	***.***	***0.007***
Growth regulators										
Maleic hydrazide	.	.	.	.	.	.	15.172	15.172	15.172	88.87
All growth regulators	***.***	***.***	***.***	***.***	***.***	***.***	***15.172***	***15.172***	***.***	***88.87***

Table 29: **Turnip and Swede: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Cabbage root fly	Carrot root fly	Downy mildew	Flea beetle	General insect control	General weed control	Ground preparation	Pre-emergence weed control	Sealer	Turnip fly	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides														
Chlorothalonil/metalaxyl-M	.	.	.	0.154	.	.	.	.	.	.	.	0.154	0.154	0.166
All fungicides	***.***	***.***	***.***	***0.154***	***.***	***.***	***.***	***.***	***.***	***.***	***.***	***0.154***	***.***	***0.166***
Herbicides & desiccants														
Clomazone	.	.	.	.	.	.	.	.	78.105	5.832	.	83.937	83.937	5.418
Diquat	.	.	.	.	.	.	.	.	.	7.787	.	7.787	7.787	4.672
Glyphosate	.	.	.	.	.	.	55.195	95.001	.	.	.	150.196	150.196	179.015
Linuron	.	.	.	.	.	.	7.787	.	.	.	.	18.465	10.678	8.743
Metazachlor	.	.	.	.	.	.	43.847	.	78.105	95.22	.	217.173	216.865	149.555
Prosulfocarb	.	.	.	.	.	.	7.787	.	.	7.787	.	15.573	7.787	34.261
All herbicides & desiccants	***.***	***.***	***.***	***.***	***.***	***.***	***114.615***	***95.001***	***156.209***	***127.3***	***.***	***493.13***	***.***	***381.663***
Insecticides														
Deltamethrin	.	.	.	.	5.832	.	.	.	.	.		5.832	5.832	0.044
Garlic Extract	.	190.939	.	.	.	0.154	.	.	.	.	81.795	272.888	106.429	455.521
Lambda-cyhalothrin	0.308	.	.	.	1.863	23.36	.	.	.	.	.	25.531	9.958	0.205
Oxamyl	.	.	0.308	.	.	.	.	.	.	.	.	0.308	0.308	0.609
Pirimicarb	52.063	.	.	.	.	.	.	.	.	.	.	52.063	52.063	10.933
All insecticides	***52.371***	***190.939***	***0.308***	***.***	***7.695***	***23.514***	***.***	***.***	***.***	***.***	***81.795***	***356.623***	***.***	***467.311***

Table 29 (cont.): **Turnip and Swede: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Slugs	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Molluscicides				
Methiocarb	43.385	43.385	43.385	5.206
All molluscicides	***43.385***	***43.385***	***.***	***5.206***

Table 30: Beetroot: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type & formulation	Blackspot	Downy mildew	General fungal control	General weed control	Ground preparation	Pre-emergence weed control	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides										
Chlorothalonil/ metalaxyl-M	.	0.616	.	.	.	.	.	0.616	0.616	0.662
Difenoconazole	0.759	.	.	.	.	.	.	0.759	0.759	0.057
Fenpropimorph	.	.	2.319	.	.	.	.	2.319	2.319	1.739
All fungicides	***0.759***	***0.616***	***2.319***	***.***	***.***	***.***	***.***	***3.694***	***.***	***2.458***
Herbicides & desiccants										
Diquat	.	.	.	.	.	1.939	.	1.939	1.939	0.388
Ethofumesate	.	.	.	3.089	.	.	0.759	3.848	3.54	3.45
Glyphosate	.	.	.	0.616	1.384	.	.	2	2	1.888
Lenacil	.	.	.	4.221	.	1.939	.	6.159	6.159	11
Metamitron	.	.	.	2.906	.	.	0.154	3.06	3.06	9.726
Phenmedipham	.	.	.	2.935	.	.	0.913	3.848	3.54	1.354
Triflusulfuron-methyl	.	.	.	2.319	.	.	.	2.319	2.319	0.035
All herbicides & desiccants	***.***	***.***	***.***	***16.086***	***1.384***	***3.877***	***1.825***	***23.172***	***.***	***27.859***

Table 31: Bulb onion: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type & formulation	General fungal control	General weed control	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides						
Azoxystrobin	17.393	.	.	17.393	17.393	3.479
Benthiavalicarb-isopropyl/mancozeb	17.393	.	.	17.393	17.393	18.719
Chlorothalonil	17.393	.	.	17.393	17.393	17.393
Copper oxychloride	17.393	.	.	17.393	17.393	17.393
Dimethomorph/mancozeb	17.393	.	.	17.393	17.393	25.811
Mancozeb	17.393	.	.	17.393	17.393	27.828
All fungicides	***104.357***	***.***	***.***	***104.357***	***.***	***110.623***
Herbicides & desiccants						
Chloridazon	.	.	17.393	17.393	17.393	5.653
Ioxynil	.	17.393	17.393	34.786	17.393	2.152
Pendimethalin	.	17.393	17.393	34.786	17.393	20.871
Prosulfocarb	.	17.393	.	17.393	17.393	27.828
Tepraloxydim	.	17.393	.	17.393	17.393	1.304
All herbicides & desiccants	***.***	***69.571***	***52.178***	***121.75***	***.***	***57.809***

Table 32a: Summer scallion: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	Downy mildew	General disease control	General fungal control	General weed control	Ground preparation	Pre-emergence weed control	Sealer	Total area treated (sp ha)	Basic area treated (sp ha)	Total quantity applied (kg)
Fungicides											
Azoxystrobin	0.077	0.873	.	3.52	.	.	.	.	4.47	4.008	1.117
Chlorothalonil	.	.	.	1.848	.	.	.	.	1.848	0.462	1.848
Chlorothalonil/ metalaxyl-M	.	1.848	.	2.448	.	.	.	.	4.296	1.278	4.618
Prothioconazole	.	.	.	32.137	.	.	.	.	32.137	16.069	6.17
Tebuconazole	.	1.602	.	0.816	.	.	.	.	2.418	2.418	0.605
All fungicides	***0.077***	***4.323***	***.***	***40.769***	***.***	***.***	***.***	***.***	***45.169***	***.***	***14.358***
Herbicides & dessicants											
Chloridazon	.	.	.	.	.	.	16.069	2.596	18.664	18.664	15.466
Diquat	.	.	.	.	1.285	.	.	.	1.285	1.285	0.514
Glyphosate	.	.	.	.	0.462	1.689	.	.	2.151	2.151	2
Ioxynil	.	.	.	.	63.597	.	.	.	63.597	21.759	3.695
Linuron	.	.	.	.	.	.	3.204	.	3.204	3.204	2.884
Pendimethalin	.	.	.	.	3.199	.	16.885	6.981	27.065	27.065	22.438
Propachlor	.	.	.	.	0.462	.	0.816	1.181	2.459	2.459	7.72
Propaquizafop	.	.	.	.	0.154	.	.	.	0.154	0.154	0.023
Tepraloxydim	.	.	.	.	0.873	.	.	.	0.873	0.873	0.065
All herbicides & desiccants		***.***	***.***	***.***	***70.033***	***1.689***	***36.974***	***10.758***	***119.454***	***.***	***54.806***

Table 32b: Winter scallion: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type & formulation	Downy mildew	General fungal control	General weed control	Sealer	Total area treated (sp ha)	Basic area treated (sp ha)	Total quantity applied (kg)
Fungicides							
Azoxystrobin	.	0.308	.	.	0.308	0.154	0.077
Chlorothalonil	.	0.616	.	.	0.616	0.154	0.616
Chlorothalonil/metalaxyl-M	0.616	.	.	.	0.616	0.154	0.662
All fungicides	***0.616***	***0.924***	***.***	***.***	***1.54***	***.***	***1.355***
Herbicides & desiccants							
Glyphosate	.	.	1.296	.	1.296	1.296	2.916
Ioxynil	.	.	0.154	.	0.154	0.154	0.062
Pendimethalin	.	.	0.154	1.296	1.45	1.45	1.914
Propachlor	.	.	0.154	1.296	1.45	1.45	5.791
All herbicides & desiccants	***.***	***.***	***1.758***	***2.592***	***4.351***	***.***	***10.684***

Table 33: **Soup Leek: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Caterillars & butterflies	Cladosporium	Disease prevention	General fungal control	General weed control	Ground preparation	Leaf blotch/white tip	Pre-emergence weed control	Rust	Sciarid flies	Scutch	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides															
Azoxystrobin	.	.	.	39.208	.	.	.	.	.	.	.	.	39.208	13.069	9.802
Azoxystrobin/difenoconazole	.	.	5.83	.	.	.	.	.	.	.	.	.	5.83	2.134	1.895
Chlorothalonil/metalaxyl-M	.	.	.	12.025	.	.	1.848	.	.	.	.	.	13.873	5.856	13.92
Fenpropimorph	.	.	.	.	.	.	.	.	1.247	.	.	.	1.247	1.247	0.585
Prothioconazole	.	0.538	.	.	.	.	.	.	.	.	.	.	0.538	0.538	0.103
Tebuconazole	.	.	4.924	43.216	.	.	.	.	.	.	.	.	48.14	22.002	12.035
All fungicides	***.***	***0.538***	***10.755***	***94.448***	***.***	***.***	***1.848***	***.***	***1.247***	***.***	***.***	***.***	***108.836***	***.***	***38.34***
Herbicides & desiccants															
Chloridazon	.	.	.	.	13.069	.	.	.	.	.	.	4.051	17.12	17.12	7.085
Cycloxydim	.	.	.	.	.	.	.	.	.	.	0.573	.	0.573	0.573	0.258
Glyphosate	.	.	.	.	6.535	9.527	.	1.247	.	.	.	.	17.309	17.001	17.459
Ioxynil	.	.	.	.	71.809	.	.	.	.	.	.	.	71.809	20.803	10.746
Linuron	.	.	.	.	0.286	.	.	.	.	.	.	.	0.286	0.286	0.172
Pendimethalin	.	.	.	.	13.356	.	.	5.256	.	.	.	6.772	25.384	25.384	30.471
Propachlor	.	.	.	.	.	.	.	4.008	.	.	.	2.721	6.729	6.729	18.224
Tepraloxydim	.	.	.	.	0.587	.	.	.	.	.	.	.	0.587	0.587	0.044
All herbicides & desiccants	***.***	***.***	***.***	***.***	***105.641***	***9.527***	***.***	***10.511***	***.***	***.***	***0.573***	***13.545***	***139.797***	***.***	***84.458***

Table 33 (cont.): **Soup Leek: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Caterillars & butterflies	Sciarid flies	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides					
Deltamethrin	.	0.538	0.538	0.538	0.004
Garlic Extract	0.062	.	0.062	0.062	2.287
All insecticides	***0.062***	***0.538***	***0.6***	***.***	***2.291***

Table 34: **Table Leek: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Cladosporium	Disease prevention	Downy mildew	General fungal control	Mildew	Rust	White blister	White tip	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides											
Azoxystrobin	.	.	.	11.172	.	.	.	.	11.172	9.924	2.793
Azoxystrobin/ difenoconazole	.	.	.	3.479	.	.	.	6.299	9.777	9.777	3.178
Chlorothalonil	.	.	.	4.99	.	.	.	.	4.99	1.247	4.99
Chlorothalonil/ metalaxyl-M	.	.	2.495	.	2.495	.	3.471	5.417	13.878	7.816	14.918
Dimethomorph/ mancozeb	.	.	.	5.95	.	3.471	.	.	9.421	9.421	13.981
Fenpropimorph	.	.	.	1.247	.	.	.	.	1.247	1.247	0.936
Prothioconazole	0.269	.	.	67.592	.	.	.	10.176	78.037	45.996	14.983
Tebuconazole	.	1.732	.	3.411	.	.	.	6.299	61.629	28.944	15.407
Tebuconazole/ trifloxystrobin	.	.	.	3.479	.	.	.	.	3.479	3.479	0.783
All fungicides	***0.269***	***1.732***	***2.495***	***101.3***	***2.495***	***53.7***	***3.471***	***28.19***	***193.63***	***.***	***71.968***

Table 34 (cont.): **Table Leek: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	General weed control	Grass	Ground preparation	Pre-emergence weed control	Sciarid flies	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Herbicides & desiccants									
Chloridazon	10.013	.	.	21.425	.	2.04	33.478	33.478	26.642
Chlorpropham	.	.	.	.	.	8.171	8.171	8.171	6.537
Fluroxypyr	27.64	.	.	.	.	.	27.64	23.73	4.024
Glyphosate	10.232	.	5.665	.	.	.	15.897	15.897	18.327
Ioxynil	152.7	.	.	.	.	.	152.703	71.235	16.71
Metazachlor	3.909	.	.	12.148	.	1.16	17.217	17.217	12.913
Pendimethalin	13.199	.	.	21.425	.	10.519	45.143	45.143	43.743
Propachlor	1.247	.	.	.	.	0.308	1.555	1.555	7.03
Prosulfocarb	3.471	.	.	8.677	.	.	12.148	12.148	7.219
Tepraloxydim	1.16	21.43	.	.	.	.	22.584	22.584	1.694
All herbicides & desiccants	***223.6***	***21.4***	***5.665***	***63.675***	***.***	***22.2***	***336.54***	***.***	***144.84***
Insecticides									
Deltamethrin	.	.	.	.	0.269	.	0.269	0.269	0.002
All insecticides	***.***	***.***	***.***	***.***	***0.269***	***.***	***0.269***	***.***	***0.002***

Table 35: Lettuce: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Aphids	General fungal control	General insect control	General weed control	Mildew	Sealer	Slugs	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides										
Azoxystrobin	.	45.406	.	.	13.873	.	.	59.279	59.279	14.82
Mancozeb/metalaxyl-M	.	45.406	.	.	13.873	.	.	59.279	59.279	76.453
All fungicides	***.***	***90.812***	***.***	***.***	***27.745***	***.***	***.***	***118.557***	***.***	***91.273***
Herbicides & desiccants										
Pendimethalin	.	.	.	90.812	.	.	.	90.812	45.406	119.827
Propyzamide	.	.	.	45.406	.	13.873	.	59.279	59.279	82.99
All herbicides & desiccants	***.***	***.***	***.***	***136.218***	***.***	***13.873***	***.***	***150.091***	***.***	***202.817***
Insecticides										
Pirimicarb	13.873	.	.	.	.	.	.	13.873	13.873	3.468
Pymetrozine	.	.	45.406	.	.	.	.	45.406	45.406	9.081
All insecticides	***13.873***	***.***	***45.406***	***.***	***.***	***.***	***.***	***59.279***	***.***	***12.549***
Molluscicides										
Ferric phosphate	.	.	.	.	.	.	45.406	45.406	45.406	6.811
All molluscicides	***.***	***.***	***.***	***.***	***.***	***.***	***45.406***	***45.406***	***.***	***6.811***

Table 36: Table celery: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type & formulation	Aphids & carrot fly	Blight	General fungal control	General insect control	General weed control	Sciarid flies	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides									
Azoxystrobin	.	41.65	19.451	.	.	.	61.101	22.311	14.313
Copper oxychloride	.	.	11.664	.	.	.	11.664	5.832	0.013
Difenoconazole	.	.	1.174	.	.	.	1.174	0.587	0.088
All fungicides	***.***	***41.65***	***32.288***	***.***	***.***	***.***	***73.938***	***.***	***14.414***
Herbicides& desiccants									
Linuron	.	.	.	.	17.066	.	17.066	17.066	4.543
Prosulfocarb	.	.	.	.	13.883	.	13.883	13.883	44.427
All herbicides & desiccants	***.***	***.***	***.***	***.***	***30.949***	***.***	***30.949***	***.***	***48.97***
Insecticides									
Deltamethrin	.	.	.	5.832	.	0.011	5.843	5.843	0.044
Garlic Extract	.	.	.	5.832	.	.	5.832	5.832	9.331
Pirimicarb	13.883	.	.	11.664	.	.	25.547	19.715	3.577
Pymetrozine	.	.	.	5.832	.	.	5.832	5.832	1.166
All insecticides	***13.883***	***.***	***.***	***29.16***	***.***	***0.011***	***43.054***	***.***	***14.118***

Table 37: **Soup celery: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Blight	Celery spot	Disease prevention	General fungal control	General weed control	Ground preparation	Leaf spot	Pre-emergence weed control	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides												
Azoxystrobin	.	.	.	4.328	.	.	.	.	.	4.328	2.164	1.082
Azoxystrobin/ difenoconazole	.	.	9.437	.	.	.	.	.	.	9.437	3.146	3.067
Chlorothalonil/ metalaxyl-M	.	.	.	4.328	.	.	.	.	.	4.328	2.164	4.652
Copper oxychloride	.	1.386	.	.	.	.	.	.	.	1.386	0.462	6.029
Difenoconazole	1.124	2.31	0.286	28.11	.	.	1.761	.	.	33.591	16.36	2.552
Dimethomorph/ mancozeb	.	.	0.286	.	.	.	.	.	.	0.286	0.286	0.425
All fungicides	***1.124***	***3.696***	***10.01***	***36.765***	***.***	***.***	***1.761***	***.***	***.***	***53.356***	***.***	***17.808***
Herbicides& desiccants												
Glyphosate	.	.	.	.	9.127	1.977	.	0.154	.	11.259	9.411	11.309
Linuron	.	.	.	.	8.798	.	.	6.326	13.124	28.249	20.896	15.207
Pendimethalin	.	.	.	.	1.16	.	.	6.172	12.893	20.225	20.225	17.381
Prosulfocarb	.	.	.	.	11.891	.	.	.	.	11.891	11.891	27.338
All herbicides & desiccants	***.***	***.***	***.***	***.***	***30.976***	***1.977***	***.***	***12.652***	***26.017***	***71.623***	***.***	***71.236***

Table 37 (cont.): **Soup celery: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Cabbage root fly	Carrot root fly	General insect control	Sciarid flies	Whitefly	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides								
Deltamethrin	.	.	.	0.022	.	0.022	0.022	>0.001
Lambda-cyhalothrin	0.286	15.609	2.448	.	1.761	20.104	4.084	0.282
Oxamyl	.	0.231	.	.	.	0.231	0.231	0.456
All insecticides	***0.286***	***15.84***	***2.448***	***0.022***	***1.761***	***20.358***	***.***	***0.738***

Table 38: **Parsley: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Disease prevention	Downy mildew	General fungal control	General weed control	Ground preparation	Leaf spot	Pre-emergence weed control	Sealer	Septoria	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Fungicides												
Azoxystrobin	.	.	7.107	.	.	.	.	.	.	7.107	7.107	1.777
Azoxystrobin/difenoconazole	5.544	.	.	.	.	.	.	.	.	5.544	1.848	1.802
Boscalid/pyraclostrobin	.	.	21.425	.	.	.	.	.	.	21.425	10.712	7.156
Chlorothalonil/metalaxyl-M	.	0.616	0.462	.	.	.	.	.	.	1.078	1.078	0.829
Difenoconazole	.	0.616	13.005	.	.	1.761	.	.	.	15.382	7.705	1.154
Dimethomorph/mancozeb	.	2.319	7.107	.	.	.	.	.	.	9.426	8.267	13.989
Epoxiconazole	.	.	.	.	.	.	.	.	19.507	19.507	6.502	2.438
Mancozeb/metalaxyl-M	.	0.616	7.923	.	.	.		.	.	8.539	8.539	11.013
All fungicides	***5.544***	***4.167***	***57.029***	***.***	***.***	***1.761***	***.***	***.***	***19.507***	***88.009***	***.***	***40.157***
Herbicides & desiccants												
Glyphosate	.	.	.	14.082	3.346	.	0.462	.	.	17.89	16.042	23.342
Linuron	.	.	.	9.91	.	.	13.15	16.924	.	39.984	32.708	21.155
Pendimethalin	.	.	.	2.634	.	.	11.528	16.77	.	30.933	30.933	28.141
Prosulfocarb	.	.	.	17.82	.	.	.	.	.	17.82	17.82	36.056
All herbicides & desiccants	***.***	***.***	***.***	***44.446***	***3.346***	***.***	***25.14***	***33.694***	***.***	***106.626***	***.***	***108.694***

Table 38 (cont.): **Parsley: Pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.**

Pesticide type & formulation	Aphids	Carrot root fly	General insect control	Whitefly	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kg)
Insecticides							
Cypermethrin	0.462	.	.	.	0.462	0.462	0.015
Lambda-cyhalothrin	.	54.647	4.51	1.761	60.917	11.281	0.865
Oxamyl	.	0.154	.	.	0.154	0.154	0.304
All insecticides	***0.462***	***54.801***	***4.51***	***1.761***	***61.533***	***.***	***1.184***

Table 39: Comparison of the area of vegetable crops grown (hectares) in Northern Ireland and the proportional differences (%) between 1991 - 2011.

	Survey year						
Crop type	1991 (ha)	1995 (ha)	1999 (ha)	2004 (ha)	2007 (ha)	2011 (ha)	% change in area 2011 / 2007
Brassica							
Brussels sprouts	121.6	85.7	114.5	29.8	43.6	54.9	26%
Cabbage (summer/autumn)	118.6	61.0	120.7	76.6	110.8	69.5	-37%
Cabbage (other)*	168.6	202.8	175.3	156.0	241.8	173.0	-28%
Calabrese/broccoli	50.6	55.8	60.6	147.5	159.5	96.3	-40%
Cauliflower	166.8	228.8	181.4	171.4	188.1	86.2	-54%
All brassicas	***626.2***	***634.1***	***652.5***	***581.3***	***743.8***	***479.8***	***-35%***
Turnip & swede	127.6	121.9	121.5	280.8	223.5	253.3	13%
Pea & bean							
Bean	11.8	11.7	9.4	6.6	5.0	2.0	-60%
Pea	13.2	6.9	5.5	2.4	2.7	15.8	483%
All peas & beans	***25.0***	***18.6***	***14.9***	***9.0***	***7.7***	***17.8***	***131%***
Leek & onion							
Leek	39.3	63.5	68.1	89.9	109.3	104.2	-5%
Bulb onion	6.4	.	14.5	13.3	10.7	17.4	63%
Scallion	51.9	42.0	58.9	61.8	39.4	28.8	-27%
All leeks & onions	***97.6***	***105.51***	***141.5***	***164.9***	***159.4***	***150.4***	***-6%***
Carrot & parsnip							
Carrot	269.9	261.0	360.8	347.8	436.3	353.1	-19%
Parsnip	80.9	73.8	109.8	99.6	185.9	166.4	-10%
All carrots and parsnips	***350.8***	***334.8***	***470.6***	***447.4***	***622.2***	***519.5***	***-17%***

Table 39 (cont.): Comparison of the area of vegetable crops grown (hectares) in Northern Ireland and the proportional differences (%) between 1991 - 2011.

	Survey year						
Crop type	1991 (ha)	1995 (ha)	1999 (ha)	2004 (ha)	2007 (ha)	2011 (ha)	% change in area 2007 / 2011
Celery	24.5	27.1	45.5	32.2	57.8	44.1	-24%
Lettuce	26.6	38.4	27.0	42.8	24.3	59.4	144%
Parsley*	20.1	31.4	40.0	41.9	47.8	33.3	-30%
Other vegetables							
Cucurbit	0.1	1.5	1.8	.	1.8	0.0025	-100%
Beetroot	3.6	3.1	6.9	3.8	6.7	8.2	22%
Rhubarb	13.7	6.8	6.1	10.8	4.9	.	.
Kale	.	.	.	.	.	0.9	.
Celariac	.	.	.	.	.	0.0139	.
All other vegetables	***17.5***	***11.3***	***14.8***	***14.6***	***13.4***	***9.0***	***-32%***
Total vegetable crops	***1,316.0***	***1,323.2***	***1,528.0***	***1,614.9***	***1,900.0***	***1,566.7***	***-18%***

* Cabbage other includes Spring & Winter cabbage and Savoy for 1999 &2004.

* Parsley was included in the 'Other vegetables' category in 1991.

Table 40: Comparison of pesticide usage on *vegetable crops* in Northern Ireland 1991-2011, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

	Survey year												% Differences	
	1991		1995		1999		2004		2007		2011		2011-2007	
Pesticide type	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	720	814	924	1,304	2,078	1,243	2,506	997	3,765	2,060	*3,480*	*1,514*	-8	-27
Herbicides & desiccants	2,159	3,558	2,560	3,723	3,735	4,707	4,579	5,449	4,933	5,728	*5,233*	*4,533*	6	-21
Insecticides														
Azomethine	.	.	.	.	.	.	.	.	.	.	*215*	*40.22*	.	.
Carbazates	.	.	.	.	.	.	.	.	.	.	*1*	*0.21*	.	.
Carbamates	*104*	*108*	*269*	*188*	*949*	*649*	*722*	*178*	*723*	*263*	*537*	*282.35*	-26	7
Chloronicotinyl	.	.	.	.	.	.	.	.	.	.	*166*	*15.96*	.	.
Ketoenole	.	.	.	.	.	.	.	.	.	.	*28*	*2.09*	.	.
Organochlorines	*66*	*16*	*17*	*3*	.	.	.	.	.	.	.	.	.	.
Organophosphates	*1,698*	*1,211*	*2,300*	*1,756*	*738*	*424*	*153*	*338*	*75*	*199*	*19*	*170.58*	-74	-14
Oxadiazine	.	.	.	.	.	.	.	.	.	.	*59*	*1.52*	.	.
Pyrethroids	*274*	*7*	*579*	*13*	*2,091*	*23*	*2,282*	*29*	*2,807*	*31*	*2,170*	*26.76*	-23	-14
Carbamate/Pyrethroid	.	.	.	.	.	.	.	.	*288*	*53*	*170*	*32.34*	-41	-39
Unknown insecticides	*34*	.	*23*	.	*16*	.	*135*	.	.	.	.	.	.	.
Other	.	.	.	.	*4*	*16*	*4*	*16*	*172*	*22*	*286*	*501*	66	2176
All insecticides	2,176	1,342	3,189	1,961	3,794	1,096	3,296	561	4,065	569	*3,652*	*1073*	-10	89

Table 40 (cont.): **Comparison of pesticide usage on *vegetable crops* in Northern Ireland 1991-2011, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).**

	Survey year												% Differences	
	1991		1995		1999		2004		2007		2011		2011-2007	
Pesticide type	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Molluscicides	29	16	33	27	188	56	75	12	106	12	*92*	*12.41*	-13	3
Rodenticides	.	.	.	.	50	159	.	.	.	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	.	.	.	.	*15*	*88.87*	.	.
Seed treatments	874	11	799	8	617	1	843	53	1,039	110	*1,121*	*25.23*	8	-77
Soil fumigants	4	1,238	.	.	.	.		.	.	.	.	.	.	.
Disinfectants	.	.	.	.	.	.	.	.	.	.	*<1*	*40.31*	.	.
Adjuvants	.	.	.	.	.	.	.	.	.	.	*21*	*2.89*	.	.
All pesticides	***5,962***	***6,979***	***7,505***	***7,024***	***10,460***	***7,262***	***11,299***	***7,142***	***13,909***	***8,473***	***13,617***	***7,289***	***-2***	***-14***
Area grown (ha)	1316		1323		1528		1615		1900		1567		-18	

Table 41: Comparison of pesticide usage on leaf and flowerhead *brassica crops* in Northern Ireland 1991-2011, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

	Survey year												% Differences	
	1991		1995		1999		2004		2007		2011		2011-2007	
Pesticide type	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	399	391	449	479	1,102	420	976	296	1,577	586	*1343*	*494*	-15	-16
Herbicides & desiccants	541	1,021	827	1,044	976	1,272	1,156	1,232	1,447	1,623	*1132*	*1,276*	-22	-21
Insecticides														
Azomethine	.	.	.	.	.	.	.	.	.	.	*164*	*30*	.	.
Carbazates	.	.	.	.	.	.	.	.	.	.	*1*	*0.21*	.	.
Carbamates	*13*	*13*	*149*	*53*	*335*	*69*	*518*	*97*	*510*	*113*	*203*	*38*	-60	-67
Chloronicotinyl	.	.	.	.	.	.	.	.	.	.	*166*	*16*	.	.
Ketoenole	.	.	.	.	.	.	.	.	.	.	*28*	*2*	.	.
Organochlorines	*41*	*13*	*16*	*2*	.	.	.	.	.	.	.	.	.	.
Organophosphates	*908*	*452*	*1,394*	*438*	*565*	*200*	*113*	*294*	*64*	*193*	*19*	*171*	-70	-12
Oxadiazine	.	.	.	.	.	.	.	.	.	.	*59*	*1.52*	.	.
Pyrethroids	*260*	*6*	*504*	*11*	*754*	*10*	*629*	*8*	*826*	*8*	*603*	*8.71*	-27	9
Carbamate/Pyrethroid	.	.	.	.	.	.	.	.	*210*	*38*	*170*	*32*	-19	-15
Unknown insecticides	*25*	.	*18*	.	*15*	.	*3*	.	.	.	.	.		
Other							*96*	*14*	*172*	*22*	*7*	*33.66*	-96	53
All insecticides	*1,247*	*485*	*2,082*	*505*	*1,668*	*278*	*1,359*	*413*	*1,782*	*375*	*1,419*	*333*	-20	-11

Table 41 (cont.): Comparison of pesticide usage on leaf and flowerhead *brassica crops* in Northern Ireland 1991-2011, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

	Survey year												% Differences	
	1991		1995		1999		2004		2007		2011		2011-2007	
Pesticide type	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Molluscicides	22	12	3	2	143	47	67	11	88	10	*3*	*0.35*	-97	-97
Rodenticides	.	.	.	.	50	159	.	.	.	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Seed treatments	80	1	57	<0.5	7	<0.5	138	29	439	96	*17*	*1.02*	-96	-99
Soil fumigants	4	1,238	.	.	.	.	.	.	.	.	.	.	.	.
Disinfectants	.	.	.	.	.	.	.	.	.	.	*<1*	*40.31*	.	.
Adjuvants	.	.	.	.	.	.	.	.	.	.	.	.	.	.
All pesticides	***2,293***	***3,147***	***3,419***	***2,030***	***3,946***	***2,177***	***3,695***	***1,981***	***5,333***	***2,691***	***3,917***	***2,144***	***-27***	***-20***
Area grown (ha)	628		635		652		581		744		480		-36	

Table 42: Comparison of pesticide usage on *turnip & swede crops* in Northern Ireland 1991-2011, area treated (spray hectares), quantity applied (kilograms), the proportional differences (%) and the area grown (hectares).

	Survey year												% Differences	
	1991		1995		1999		2004		2007		2011		2007-2004	
Pesticide type	**Area (sp ha)**	**Quantity (kg)**	**Area (sp ha)**	**Quantity (kg)**	**Area (sp ha)**	**Quantity (kg)**	**Area (sp ha)**	**Quantity (kg)**	**Area (sp ha)**	**Quantity (kg)**	**Area (sp ha)**	**Quantity (kg)**	**Area (sp ha)**	**Quantity (kg)**
Fungicides	55	32	155	76	10	3	2	1	*116*	612	*<0.1*	*<0.1*	-100	-100
Herbicides & desiccants	170	445	159	239	209	353	575	698	393	546	*493*	*382*	25	-30
Insecticides														
Carbamates	*46*	*51*	*65*	*86*	87	*109*	3	*3*	<1	<1	*52*	*12*	17,357	5,670
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	*162*	*122*	*162*	*272*	130	*155*	26	*27*	-	-	.	.	.	.
Pyrethroids	*1*	*<0.1*	*23*	*1*	*6*	*<0.1*	*3*	*<0.1*	*6*	*<1*	*31*	*<0.1*	423	<100
Other	.	.	.	.	.	.	.	.	.	.	*273*	*456*	.	.
Unknown insecticides	*2*	.	*1*	-	*1*	.	.	.	.	.	.	.	.	.
All insecticides	210	173	252	358	225	264	32	40	*6*	*<1*	*357*	*467*	5,844	155,670
Molluscicides	.	.	23	21	<0.1	<0.1	.	.	.	.	*43*	*5*	.	.
Seed treatments	133	2	115	<0.5	87	<0.5	266	1	74	<1	*228*	*2*	208	100
All pesticides	***568***	***652***	***704***	***695***	***531***	***620***	***874***	***740***	***558***	***1,159***	***1,121***	***856***	***101***	***-26***
Area grown (ha)	128		122		121.5		255		224		253		13	

Table 43: Comparison of pesticide usage on *leek crops* in Northern Ireland 1991-2011, area treated (spray hectares), quantity applied (kilograms), the proportional differences (%) and the area grown (hectares).

	Survey year												% Differences	
	1991		1995		1999		2004		2007		2011		2011-2007	
Pesticide type	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	64	54	90	57	93	49	143	73	*374*	150	*302*	*110*	-19	-26
Herbicides & desiccants	95	222	155	299	239	443	343	494	463	591	*476*	*229*	3	-61
Insecticides														
Carbamates	.	.	.	.	*1*	*1*	.	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	*1*	*1*	.	.	.	.	.	.	.	.
Organophosphates	*7*	*4*	*3*	*3*	-	-	2	1	*4*	*3*	.	.	.	.
Pyrethroids	.	.	*3*	*<0.5*	*<0.1*	*< 0.1*	.	.	.	.	*1*	*<0.1*	.	.
Other	.	.	.	.	.	.	.	.	.		*<0.1*	*2*	.	.
Unknown insecticides	.	.	.	.	.	.	.	.	.	.	.	.	.	.
All insecticides	7	4	6	3	2	1	2	1	4	3	*1*	*2*	-78	-24
Molluscicides	.	.	1	1	.	.	.	.	.	.	.	.	.	.
Seed treatments	29	<0.5	28	<0.5	34	< 0.5	72	2	77	1	*74*	*1*	-4	6
All pesticides	***195***	***280***	***280***	***360***	***368***	***494***	***560***	***568***	***918***	***744***	***854***	***343***	***-7***	***-54***
Area grown (ha)	39		64		68		79		109		104		-4	

Table 44: Comparison of pesticide usage on *carrot crops* in Northern Ireland 1991-2011, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

	Survey year												% Differences	
	1991		1995		1999		2004		2007		2011		2011-2007	
Pesticide type	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	33	147	69.5	434	468	398	879	349	*900*	345	*832*	*348*	-8	1
Herbicides & desiccants	791	1,104	884	1,348	1,266	1,290	1,502	1,702	1,460	1,615	*1,742*	*1,355*	19	-16
Insecticides														
Carbamates	*39*	*38*	*50*	*45*	394	*353*	147	*61*	*181*	*144*	*186.92*	*179.9*	3	25
Organochlorines	*12*	*<0.5*	-	- .	-	-	-	-	.	.	.	.	.	.
Organophosphates	*465*	*492*	*506*	*778*	23.9	*54*	1	*<0.5*	*2*	*<1*	.	.	.	.
Pyrethroids	-	-	-	-	*943*	*8.7*	*1,198*	*16*	*1,303*	*15*	*873.23*	*10.1*	-33	-33
Unknown insecticides	*6*	-	*4*	-	-	-	*<0.5*	-	*<0.5*	.	.	.	.	.
All insecticides	523	532	560	823	1,361	415	1,346	78	1,485	160	*1060*	*190*	-29	19
Molluscicides	3	1	-	-	2.3	0.5	1	<0.5	*1*	<0.1	*0.31*	*0.04*	-69	<100
Seed treatments	494	2	503	3	359	< 0.5	286	11	327	14	*440*	*12*	35	-12
Adjuvants	.	.	.	.	.	.	.	.	.	.	*11.6*	.	.	.
All pesticides	***1,844***	***1,784***	***2,017***	***2,607***	***3,455***	***2,103***	***4,013***	***2,210***	***4,174***	***2,124***	***4,086***	***1,905***	***-2***	***-10***
Area grown (ha)	270		261		361		314		436		353		-19	

Table 45: Comparison of pesticide usage on *parsnip crops* in Northern Ireland 1991-2011, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

	Survey year												% Differences	
	1991		1995		1999		2004		2007		2011		2007-2004	
Pesticide type	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	8	30	17	115	120	89	197	75	*307*	113	*510.48*	*266.68*	66	136
Herbicides & desiccants	219	252	194	242	398	343	412	497	620	727	*726.45*	*658.1*	17	-9
Insecticides														
Carbamates	*5*	*5*	*4*	*4*	*115*	*103*	*10*	*12*	*3*	*<1*	*52.77*	*44.94*	1,659	.
Organochlorines	*9*	*<0.5*	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	*85*	*99*	*135*	*200*	*2.7*	*5.8*	.	.			.	.	.	.
Pyrethroids	-	-	-	-	*293*	*2.8*	*344*	*3*	*524*	*7*	*574*	*6.48*	10	-7
All insecticides	99	104	139	204	411	111	354	16	527	7	*627*	*51.41*	19	634
Molluscicides	.	.	.	.	32.7	<0.5	.	.	2	<1	*0.06*	*0.01*	-97	.
Growth regulators	.	.	.	.	.	.	.	.	.	.	*15.17*	*88.87*	.	.
Seed treatments	4	.	3	< 0.5	70.9	<0.5	3	<0.1	9	<0.1	*174*	*0.37*	1,830	<100
Adjuvants	.	.	.	.	.	.	.	.	.	.	*9.73*	*2.89*	.	.
All pesticides	***330***	***386***	***353***	***561***	***1,032***	***543***	***966***	***587***	***1,466***	***847***	***2,063***	***1,068***	***41***	***26***
Area grown (ha)	81		74		110		89		186		166		-11	

Table 46: Comparison of pesticide usage on *lettuce crops* in Northern Ireland 1991-2011, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

	Survey year												% Differences	
	1991		1995		1999		2004		2007		2011		2011-2007	
Pesticide type	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	57	48	36	41	41.5	49.3	86	54	*118*	50	*119*	*91.27*	0.5	83
Herbicides & desiccants	25	45	52	70	78.6	144	102	150	66	60	*150*	*203*	127	238
Insecticides														
Azomethine	.	.	.	.	.	.	.	.	.	.	*45.41*	*9.08*	.	.
Carbamates	.	.	.	.	*1.1*	*<0.3*	*44*	*4*	*2*	*1*	*3.47*	*13.87*	*74*	*1,287*
Organochlorines	*2*	*1*	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	*19*	*16*	*61*	*20*	*3.1*	*0.7*	*5*	*3*	.	.	.	.	.	.
Pyrethroids	*11*	*<0.5*	*45*	*1*	*28.4*	*<0.3*	*69*	*6*	.	.	.	.	.	.
Carbamates/pyrethroids									*39*	*6.4*	.	.	.	.
All insecticides	34	18	106	21	32.5	1.2	118	13	*41*	*7*	*59.28*	*12.55*	45	79
Molluscicides	3	3	6	2	2	1.4	5	1	*2*	*<1*	*45.41*	*6.81*	2,171	<100
Seed treatments	7	-	.	.	.	.	*33*	*10*	24	2	*90.89*	*7.1*	279	255
All pesticides	***126***	***114***	***200***	***133***	***155***	***195***	***343***	***226***	***251***	***119***	***464***	***321***	***85***	***169***
Area grown (ha)	27		38		27		39		24		59		147	

ACKNOWLEDGEMENTS

We, the authors, wish to thank all the growers who participated in this survey without whose co-operation completion of this report would not have been possible. We are particularly grateful to Mr David Williams for his invaluable assistance with data input and also Mrs Joanna Kirbas and Mr Paul Edgar for their help with the tables.

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Northern Ireland Pesticide Usage Survey Published Reports Appendix 1

Report No.	Report title	ISBN
99	Grassland & Fodder Crops 1989	1-855 27 079 X
105	Arable Crops 1990	1-855 27 130 3
106	Soft Fruit Crops 1990	1-855 27 149 4
109	Vegetable Crops 1991	1-855 27 137 0
110	Protected Crops 1991 (edible & ornamental)	1-855 27 283 0
111	Mushroom Crops 1991	1-855 27 150 8
117	Arable Crops 1992	1-855 27 193 1
118	Top Fruit Crops 1992	1-855 27 194 X
124	Grassland & Fodder crops 1993	1-855 27 221 0
131	Forestry 1993	1-855 27 282 2
132	Arable Crops 1994	1-855 27 314 4
139	Vegetable Crops 1995	1-855 27 346 2
140	Mushroom Crops 1995	1-855 27 347 0
146	Arable Crops 1996	1-855 27 469 8
147	Top fruit 1996	1-855 27 470 1
156	Grassland & Fodder Crops 1997	1-855 27 506 6
157	Sheep Treatments 1997	1-855 27 425 6
167	Soft Fruit 1998	1-855 27 540 6
168	Arable Crops 1998	1-855 27 536 8
169	Vegetable Crops 1999	1-855 27 561 9
170	Mushroom Crops 1999	1-855 27 549 X
177	Arable Crops 2000	1-855 27 670 4

Northern Ireland Pesticide Usage Survey Published Reports Appendix 1 (contd.)

Report No.	Report title	ISBN
178	Top Fruit Crops 2002	1-855 27 618 6
194	Arable Crops 2002	1-855 27 674 7
198	Grassland & Fodder Crops 2003	1-855 27 797 2
199	Hardy Nursery Stock Crops 2003	1-855 27 789 1
201	Protected Ornamental Crops 2003	1-855 27 739 5
206	Arable Crops 2004	1-855 27 833 2
207	Vegetable crops 2004	1-855 27 869 3
208	Grassland & Fodder Crops 2005	1-855 27 998 8
209	Sheep Treatments 2005	1-855 27 999 5
216	Arable Crops 2006	1-848 07 035 6
217	Top Fruit Crops 2006	1-848 07 019 6
218	Soft Fruit Crops 2006	1-848 07 036 3
222	Vegetable Crops 2007	1-848 07 062 2
223	Mushroom Crops 2007	1 848 07 061 5
230	Arable Crops 2008	1 848 07 135 3
231	Top Fruit Crops 2008	1-848 07 134 6
238	Grassland & Fodder Crops 2009	1-848 07 186 5
239	Hardy Nursery Stock Crops 2009	1-848 07 187 2
240	Soft Fruit Crops 2010	1-848 07 251 0
241	Top Fruit Crops 2010	1-848 07 250 3
242	Arable Crops 2010	1-848 07 252 7
245	Mushroom crops 2011	1-84807-308-1

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