



Research for Competitive Beef Production Francis Lively



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Competitive Beef Production

- Maximising output from suckler herd
 - Reducing calving age
 - Improving herd fertility
 - AFBI research suckler herd
- Maximising performance
 - Animal health
 - Net feed efficiency







Successful Calving at 24 Months

AFBI established a team of 6 on-farm co-researchers in 2010 Reduce the average age of first calving within Northern Ireland suckler herds

<u>Key Objectives</u>

- Establish mature cow live weight
- Provide live weight targets for replacement heifers
- Provide nutrition advice to achieve these targets
- Monitor performance
- Develop an online growth monitoring tool linked to BovIS







Putting Research Into Practice













Putting Research Into Practice

140 heifers involved

• Animals monitored at 4 monthly intervals from 6 months to calving



Farm	Age at first calving (months)		
	2009/10	2011/12	
А	23	23	
В	32	24	
С	30	27	
D	-	26	
Е	30	24	
F	26	25	
All	28	24	



 AFBI co-researchers successfully reduced age at first calving by 4 months



Successful Calving at 24 Months

Selection criteria > 60%+ mature weight at 14 months Health status Vaccinations complete prior to breeding Nutrition (weaning – calving) Grass silage + 2 kg concentrate Good grassland management Grass silage + min/vit **Breeding decisions** Easy calving sire Synchronized + AI

600 500 0.6 kg/day _ive weight (kg) 400 0.7 kg/day 300 200 -Target growth 1.0 kg/day 100 AFBI 0 10 20 0

BovIS online growth monitoring tool



Research To Improve Suckler Herd Fertility

Cow management

- Body condition score
- Calving performance
- Fertility diseases
- Fertility trace elements

Breeding method

- Artificial insemination
- Synchronisation
- Sexed semen













Could Synchronisation and Artificial Insemination Improve Herd Performance?

Why consider synchronisation within the suckler herd?

- Average herd size <20 cows</p>
- Increase the genetic potential of the herd
- Select for specific traits
 - Calving ease
 - Growth rate
 - Maternal characteristics
- Reduce calving spread
- Heat detection can be problematic on many farms
- Many part-time producers





Synchronisation and Artificial Insemination with Heifers - Research Results

Evaluated 2 protocols

Programme 1 – including heat detection

Programme 2 – fixed time AI

Guidelines to success

- Following AFBI online growth monitoring tool
- Heifer nutrition common diet
- High health status
- Follow protocol in a timely manner
 & plan ahead
 - Consult with vet & AI technician



58% conception

57% conception



New Innovations to Increase Herd Output?

Potential considerations

- Heat detectors
- Calving camera
- Calving detectors





Potential outcomes

- Improved fertility
- Reduced labour
- Reduced mortality





Have We Got The Right Genetics?

AFBI Research Herd Stabiliser Composite versus Limousin x Holstein Friesian





AFBI Research Stabiliser Composite versus Limousin x Holstein Friesian



	Dam breed	
	Stabiliser	Limousin x Holstein
Number	39	50
Calving Interval (days)	390	384
Calving difficulty (%)	18	15
Calves weaned per 100 cows mated	88	95

No significant effect of dam genotype on fertility or calving traits

Additional research is ongoing for longevity



AFBI Research Stabiliser Composite versus Limousin x Holstein Friesian



	Dam breed	
	Stabiliser	Limousin x Holstein
Liveweight (kg) - at birth - at weaning - at turnout	38 247 370	42 280 384
DLWG Birth to weaning (kg/d) Weaning to turnout (kg/d)	1.01 0.79	1.14 0.70

- Limousin x Holstein cows wean heavier calves than Stabiliser cows
- Lifetime progeny performance similar
- Stabiliser cows are heavier and carry more BCS than Limousin x Holstein cows
- Additional research ongoing on feed requirement



AFBI Research The Impact of Cow Size on Calf Output



Larger cows do not wean heavier calves regardless of genotype but cost more to maintain



AFBI Research Dairy-Origin Beef Production - Calf Health

Parameter	Immune status category (ZST units)		
	0 - 20	>20	
Live weight gain (kg/d)			
Start to 3 mths	0.64	0.77	
Slaughter age (mths)	20.1	19.5	

Calves with low immune status:

- required higher veterinary treatments
- required additional 17 days to reach target slaughter weight



AFBI Research Sourcing Dairy-Origin Beef Calves



- Significant farm to farm variation
- 14% of calves per farm had inadequate immune status
- Consider future integrated approaches



Making More From Your Inputs: Net Feed Efficiency



- Relative to the high NFE bulls the low NFE bulls:
 - consumed 13% less feed/day

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> 14% more efficient at converting feed into LWG

Selecting the most efficient converters of feed into saleable product

Local research to measure individual feed efficiency is critical



Use Research Findings to Competitively Produce Beef

- Don't waste valuable feedstuffs
 - Use BovIS on-line growth monitoring tool
 - Calve replacements at 24 months
 - Target 95 calves weaned per 100 cows mated
- Make the most of the best genetics to maximise output
 - Suckler cow genotype smaller cows
 - High EBV terminal sires
- The future is feed efficiency
 - Higher growth rate with lower feed intake



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