

CONTROL OF BOTULISM IN CATTLE

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There has been an increase in the number of cases of botulism in cattle in Northern Ireland in recent years. Investigations by the Agri-Food and Biosciences Institute (AFBI) have provided strong circumstantial evidence that broiler litter is a risk factor for many of these outbreaks.

AFBI and the Department of Agriculture and Rural Development have been working closely with the livestock and poultry sectors in Northern Ireland to help ensure that producers are aware of the most effective control measures. Reports from private veterinary surgeons, and a reducing number of submissions of suspect botulism cases to VSD, indicate that the various control measures already implemented by the industry are having a positive impact on the incidence of this disease. However, as cases continue to occur, AFBI wishes to advise farmers on the steps that may be taken to prevent this disease.

Cause of botulism

Botulism is caused by toxins produced by *Clostridium botulinum* bacteria. These organisms are commonly found in the environment and will grow to high levels in decaying organic matter including animal and bird carcasses. It is believed that contamination of broiler

litter with the carcasses of chickens that have died from various causes during production can render the litter dangerous for cattle. It is speculated that even small fragments of carcasses transferred onto pasture by scavenger animals such as foxes, dogs or crows, can pose a risk to grazing cattle. Scavengers may gain access to this material after it has been stacked outside or spread on pasture.

It is important to note that there is no evidence that manure from laying hens has been associated with outbreaks of botulism in cattle.

Clinical signs of botulism

Cattle of all ages are susceptible to botulism, which is characterised by a progressive muscle weakness (paralysis). Affected animals may be weak, stagger about, or go down. In most cases the disease is fatal although some animals may recover. When a large amount of toxin has been ingested, the animal may be found dead without having shown any signs of disease.

Control of botulism in cattle

Careful disposal of all animal or bird carcasses and poultry litter is essential to minimise the risk of botulism to cattle. Poultry carcasses should be promptly removed from the chicken house and disposed of by incineration, or rendering as required by EU Regulation No. 1774/2002. Following removal of the broiler crop, all poultry house doors should be kept closed until the litter is removed. The litter should not be removed from the house until it can be loaded directly onto spreading equipment, covered vehicles or immediately stacked and covered. At no time should it be accessible to dogs, foxes, crows or other scavengers that may carry carcasses onto adjacent pasture or into cattle housing. Washings from poultry

houses and yards should be collected in tanks rather than be allowed to flow onto adjacent land.

Poultry litter should not be spread on agricultural land that is to be grazed, or from which silage or hay is to be harvested, in the same year. This is because fragments of carcasses that could contain botulinum toxins can persist on pasture for a considerable time. If litter must be spread, it should be deep-ploughed into arable ground. If this is not an option and litter must be disposed of by spreading on pasture, cattle should not have access to the treated fields for at least several months. However, there is no guarantee that the treated fields would then be safe for cattle and it is important to remember that fragments of carcasses on pasture may be transported by scavenger animals and birds to neighbouring fields. Spreading litter on a windy day may also pose a risk of contaminating adjacent fields.

Any animal or bird carcasses, or portions of carcasses, visible on pasture or in cattle houses should be promptly removed. Even small fragments of such material may be dangerous to cattle and should be disposed of by incineration or rendering, as required by current legislation.

Manure from laying hens may be spread on pasture, as there is no evidence that it presents a risk of botulism to cattle.

Vaccination

No vaccine is available under general licence in the UK for the protection of cattle against botulism. However, veterinary surgeons may obtain a vaccine under a 'special treatment certificate' for the protection of cattle at risk of botulism. Vaccination should not be used as a substitute for the biosecurity measures described above.

Public Health

The Food Standards Agency has recently amended its advice on the management of outbreaks of suspected botulism in cattle. This follows recommendations in a report by the Advisory Committee on the Microbiological Safety of Food (ACMSF).

Milk and meat from clinically affected cattle should not enter the food chain. There are now, however, no restrictions on milk or meat from healthy cattle from affected farms.

Advice

Further information and advice may be obtained from the AFBI Veterinary Sciences Division laboratories at Stormont (Tel: 028 90525701) or Omagh (Tel: 028 82243337).

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