



## Nutrition and animal health: feed contamination Technical Note N16

Potential feed-related health problems in dairy cows include metabolic conditions (acidosis, ketosis, milk fever); disorders related to forage and grazing management (grass tetany, bloat, nitrate, prussic acid, plant poisoning); and ill-health/death from feed contamination (botulism, aflatoxins and ergot).

### Feed contamination

#### **Botulism**

Refer to DAFF's 'Botulism: a potential disease problem in intensively fed beef and dairy cattle' Visit [www.daff.qld.gov.au](http://www.daff.qld.gov.au)

Small amounts of botulinum toxin in stored feed from dead rodents, birds, reptiles or rotting material can kill animals; the incidence and risk is increased in dairy herds on total mixed rations or silage-based feeding systems.

Symptoms are sudden death; weakness, paralysis (which begins at the hind legs and moves forward along the body); paralysed tongue, excessive drooling.

Little can be done to treat affected cattle; mild cases may be treated with early physical removal of the toxin.

Prevent with an effective vaccination program; full protection may not occur until four-six weeks after the first vaccination.

#### **Ergot poisoning**

Refer to DAFF's 'Ergot in sorghum-biology, management and toxicity to livestock'. Visit [www.daff.qld.gov.au](http://www.daff.qld.gov.au)

Sorghum grain contaminated with ergot can be toxic to dairy cattle, with a regulated limit of 0.3% ergot in grain intended for stock feed.

Ergot can affect milk production. After five weeks, a cow consuming 5 kg sorghum grain/day containing just 1% ergot will reduce milk production by up to 30%.



*Sorghum grain that is ergot affected and mouldy.*

Symptoms of overheating occur including dribbling, standing in the shade and seeking water. Ergot poisoning reduces the cow's ability to shed heat, and is therefore less tolerated in summer.

Prevent by asking for an ergot limit of less than 0.3% in grain purchase contracts; check for ergot sclerotes (look like small, dark, elongated immature sorghum grains) by spreading a small amount of sorghum on a sheet of white paper; use caution if forage sorghum crop displays honeydew infection of seed heads (Photo 1); graze or cut forage sorghum for silage before flowering, particularly late summer/early autumn.

Quietly move affected stock to alternative feed in shaded, cool area.

#### **Moulds and mycotoxin poisoning**

Most moulds can produce mycotoxins in response to stress. For example, corn growing as a crop or in storage may grow mould. Only when the feed is subjected to freezing temperatures or drought stressed conditions will the mould produce mycotoxins.

Silages are the largest source of mycotoxin contamination (Photo 2). Other sources include corn, wheat, barley, sorghum, cottonseed and many by-product feeds.

Symptoms include low feed intake, rough hair coat, slightly arched back, digestive upsets (such as diarrhoea and/or rumen stasis), mucous in the manure, tissue oedema (swelling of the brisket and hock areas), and a high rate of abortion or foetal resorption.

If mycotoxin poisoning is suspected, then a toxin binder such as bentonite should be added to the diet. Keep in mind that this may bind other vitamins and minerals. Prevention is best and if there is a slight suspicion of mycotoxins, then the feed should be tested. If the feed smells mouldy, do not buy or feed it. Silage needs to be managed well during the ensiling and feedout process.

### **Aflatoxin poisoning**

Refer to DAFF's 'Avoid aflatoxin poisoning of livestock and the potential for residues in milk and meat', which can be accessed via [www.daff.qld.gov.au](http://www.daff.qld.gov.au)

Aflatoxin is the mycotoxin most highly recognised. Aflatoxin-contaminated grain and nuts can poison livestock and can also produce residues in milk and meat. Poisoning is increased in drought conditions and in high temperatures and high humidity. Feeds that are affected include peanuts, peanut byproducts, maize, sorghum, bakery waste, particularly in moist storage conditions; peanut hay from failed crops can contain sufficient aflatoxin to produce residues in milk.

Symptoms include a reduction in feed intake, weight loss, dramatic reduction in milk yield, an increased susceptibility to stress, drying and peeling of the muzzle, mucous in the manure, loss of liver function, potential prolapse of the rectum and ultimately death.

Prevention is best controlled by contract assurance where feeds meet Queensland stockfeed standards for aflatoxin levels. Restrict peanut hay with pods to less than 10% of total diet; store feedstuffs in dry conditions; regularly clean feed bins and feed out machinery.



*Mouldy silage can contain high levels of mycotoxins.*

### **Further information**

Contact the DAFF Customer Service Centre by Phone 13 25 23, or Email [callweb@daff.qld.gov.au](mailto:callweb@daff.qld.gov.au)

More technical notes can be found at: [www.dairyinfo.biz](http://www.dairyinfo.biz)

Protein Plu\$ checkbook (Published 2006 by DPI&F Qld)

Feed Plu\$ CD v4.0 (Published 2008 by DPI&F Qld)

Condition magician booklet (Published 2003 by DPI Vic)

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