

Ketosis (acetoaemia, slow fever)

Ketosis is a common disease of adult dairy cattle. It typically occurs in early lactation and is most consistently characterized by a poor appetite and depression. In severe cases, signs of nervous dysfunction can occur. These can include abnormal licking, and abnormal gait, bellowing, and aggression. Sub-clinical ketosis is a big problem in our high yielding dairy cows. Symptoms are not obvious but decreased feed intake leads to lower performance. Cows with sub-clinical ketosis will have lower yields and poor fertility. They are also more likely to develop diseases like displaced abomasum and mastitis



Abnormal licking

Incidence and costs

Incidence rates vary between herds but up to 10% of dairy cows can suffer from clinical ketosis and up to 40% can suffer from sub-clinical ketosis.

Direct costs for treatment and indirect for loss of yield and impacts on fertility and other disease are claimed to be up to £230 per cow.

Disease mechanism

In the period immediately after calving dairy cows are unable to take in the energy that their milk yield requires. This is what we call the period of negative energy balance (NEB). To meet the energy demand the cow will have to use its own reserves which are body fat and muscle protein. If the demand for energy is higher than the body can cope with the liver will try to find shortcuts in the metabolism and, rather than producing glucose, it will start producing ketone bodies (beta-hydroxy-butyrate, acetone.) Initially the animal will be able to use these as an energy source for the brain and for the muscles but if these are produced in excess the cow will start feeling sick from them. Ketosis is mostly seen in cows that calf down with a high body condition score. The risk gets even higher if cows have been overfed in the second half of the dry period.



BCS 1



BCS 2



BCS 3



BCS 4



BCS 5

Treatment

Treatment of animals with ketosis is focused on stimulating glucose production and reducing ketone levels in the blood. In milder cases oral drenching with propylene glycol or glycerol is usually enough to achieve this. Adding an injection of steroids will increase the appetite and stimulate the glucose production in the liver.

In more severe cases an IV administration of glucose can be indicated.

To aid the liver multivitamins or dairy boost can also be given.



Stress free cows

Prevention

First focus on preventing of ketosis and sub-clinical ketosis is to prevent cows from calving with a BCS over 3-3.5. Strategies to do this start in late lactation where it is still safe to correct BCS. Once dried off cows should be fed to maintenance and changes in BCS can have a detrimental effect, especially cows getting fatter should be avoided at any time.

In the transition period (3 weeks before calving to 3 weeks after calving) dry matter intake should be maximal. Avoiding stress and disease around this time is essential to achieve this.