



SARA and the Endotoxin-Challenge

Endotoxins and their effects in dairy cows

Subacute rumen acidosis (SARA) is a ubiquitous problem on dairy farms. The genetically determined milk yield of high producing cows requires that enormous amounts of energy have to be absorbed through the feed. Therefore, concentrated feed components rich in carbohydrates complement the roughage. This leads to the formation of lactic acid and the pH value in the rumen drops. The longer the phases with pH values below 6 last, the more bacteria of the (desired) gram-negative bacterial flora react sensitively to the acid and die. The cell wall of gram-negative bacteria consists of lipopolysaccharides (LPS), the so-called endotoxins. These are released when the bacteria decay and these toxic substances flood in the rumen.

Dysfunctional barrier

Normally the rumen mucous membrane with its villi represents a physical barrier against toxic substances. However, changing the pH value changes the osmotic conditions and damage can also occur to the rumen villi. Now the barrier function of the rumen is disturbed and the endotoxins can pass unhindered into the blood.

Endotoxins in the blood

- Must be detoxified by the liver -> liver strain
- Cause inflammatory reactions and an activation of the immune system -> costs energy that is lost from milk production
- Getting into the udder -> high cell counts (SCC) are the result
- Get into the corium of the claws -> Laminitis and a weak horn quality are the result. Often you only see this months later when trimming the claws. The connection with feeding and rumen acidosis is difficult to see.
- Are stored in adipose tissue and can reappear in the blood during the transit phase when the fat melts
- Are involved in various health problems
 - Displaced Abomasum
 - Fatty liver
 - Milk fever
 - Retained placenta
 - Downer cow

It is also not surprising why there are so many different problems around calving, because it is precisely the moment of massive changes in feed, body fat meltdown, hormonal changes as well as stress due to regrouping and enormous physical exertion.

Helpful tool WH67®

Standardized humic acids WH67® can significantly reduce the endotoxin burden of the cow. These bind chemically to the lipopolysaccharides and neutralize them. Due to the resulting molecular size of a WH67®-LPS complex, these can no longer pass into the blood and are excreted with the faeces, even if the barrier function of the rumen is impaired. Calving itself is an enormous challenge for the cow's metabolic systems, which she can master the better the less endotoxins she is exposed to. WH67® in the feed is an effective tool to reduce the additional endotoxin burden and to relieve the cow. The health parameters during SARA events and in the transition period are significantly improved.

Helpful tool EVO-AMARIS®

Milk thistle has long been known in human medicine for its liver-strengthening properties. The various natural active ingredients improve the regenerative abilities of the liver and support its detoxification function during heavy metabolic loads. With EVO-AMARIS® in the ration, you have another

tool available to support the cow's liver in times of increased stress. Higher milk yield, lower SCC and a better general constitution of the cows can be expected.