jbs rinderhefe 5/10 ph

Feed supplement containing live yeast and phenol to maintain a solid animal health

The live yeast in **jbs rinderhefe 5/10 ph** is covered with a layer of inactive yeast during production and formed into stable beads. This ensures that the live yeast will stay inactive until it enters the rumen all while remaining protected from air, moisture and fermentation acids.

Phenols promote health

Phenols scavenge free radicals that would otherwise have a negative effect on animal health. These free radicals are caused by stress: high performance, calving, heat, etc. Vitamin E and selenium can also act as free radical scavengers, but then it is no longer available for the cow's growth and fertility. Thus phenols additionally prevent a deficiency of vitamin E and selenium and ensure the cow's performance.

jbs rinderhefe 5/10 ph contains: live yeast 2,000 x 10^9 CFU/kg, calcium carbonate, magnesium oxide, phenol.

Feeding

Dairy cattle: 20 g per animal per day
Feeding of **jbs rinderhefe 5/10 ph** should start 4 weeks before calving and continue throughout lactation up to the dry period.

Beef cattle: 35 g per animal per day

Calves for rearing: 10 g per animal per day

Packaging

20 kg bag

In practice

A practical test from the Czech Republic showed the following results

	Untreated	Live yeast
pH value	6.4	6.6
lactate	16.4	9.3
fatty acids	104.7	112.0
Ø kg of milk ECM	37.0	39.4
glucose	3.2	3.3
BHBA	0.6	0.5

source: Mohamed Mammeri von Phileo

All measured values have improved significantly:
Less lactate and more fatty acids indicate a reduction in the risk of acidosis and an optimization of rumen processes. At the same time, the increase in fatty acids ensures a higher energy yield from the feed. Together with the increased glucose content, this leads to more milk in the tank. The beta-Hydroxybutyric acid value (BHBA in the blood) provides information about the energy balance. The higher it is, the greater the ketosis risk. The low value shows that the live yeast has relieved the cow's metabolism.

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At a glance

- increases contents of fat and protein
- phenols promote animal health
- stabilizes the rumen, especially if animals are stressed
- reduces the risk of acidosis
- reduces the amount of feed residue in the manure
- relieves the liver

Feed Safety Assurance GMP+

QS. Ihr Prüfsystem für Lebensmittel.

VLOG verified

Sieve test

Using the simplest of means, the sieve test provides the easiest way to see the effects of feeding live yeast. Put a sample of manure in a common kitchen sieve and rinse until the water runs clear.
The undigested feed components will remain in the sieve. The amount and type of the residue shows the digestion's intensity. After 3 - 4 weeks of feeding live yeast, repeat the test. Through the feeding of live yeast the amount of residues is significantly reduced – especially the amount of undigested maize kernels is significantly reduced.

feed ration **without** live yeast

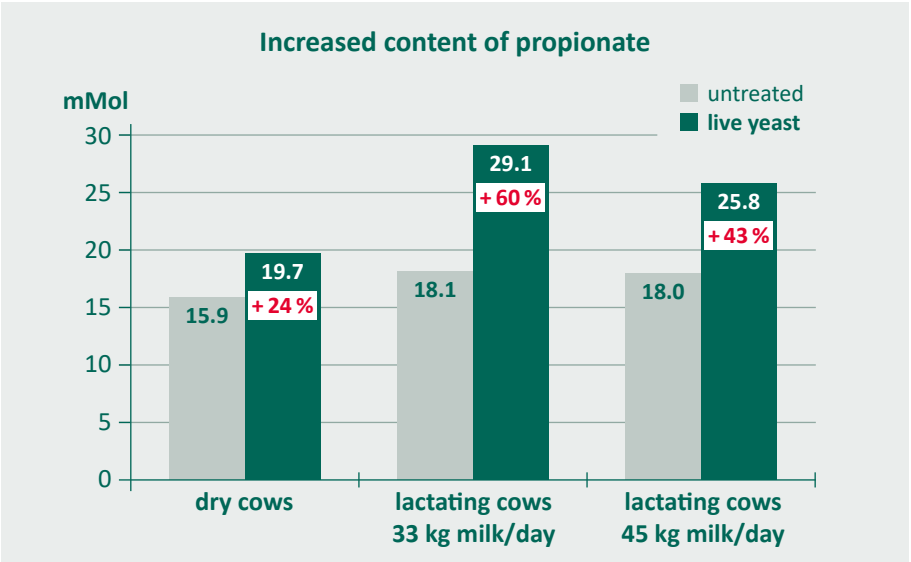
feed ration **with** live yeast

Effects of the live yeast used in jbs rinderhefe 5/10 ph, *Saccharomyces cerevisiae*, on the rumen

Live yeast consumes ruminal oxygen

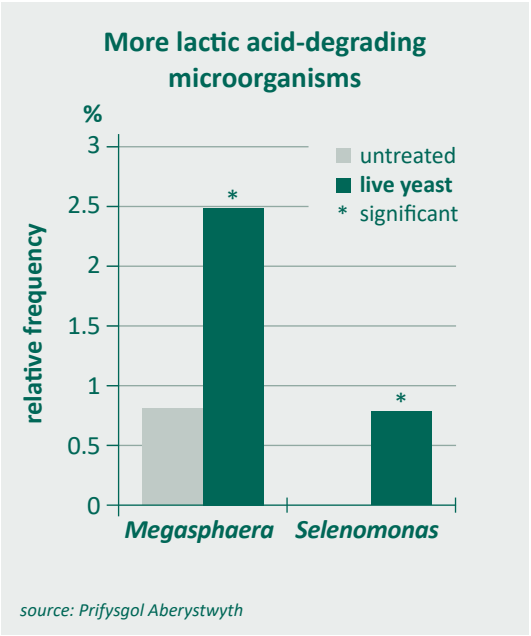
Oxygen is toxic for most ruminal microorganisms. Live yeast reduces oxygen, so the number of cellulose-degrading microorganisms increases. This may be observed in the animals' manure after just a short period of time (see pictures on the left): fibre and kernel residue is reduced. As live yeast binds the oxygen, a higher amount of free hydrogen will be available for the formation of propionic acid. In the liver, this acid is subsequently transformed into the energy source glucose.

In the dry period as well as during lactation, feeding low-energy rations results in an increased production of propionic acid in the rumen.



source: Lesaffre Feed Additives

Live yeast keeps rumen pH at optimal level



source: Prifysgol Aberystwyth

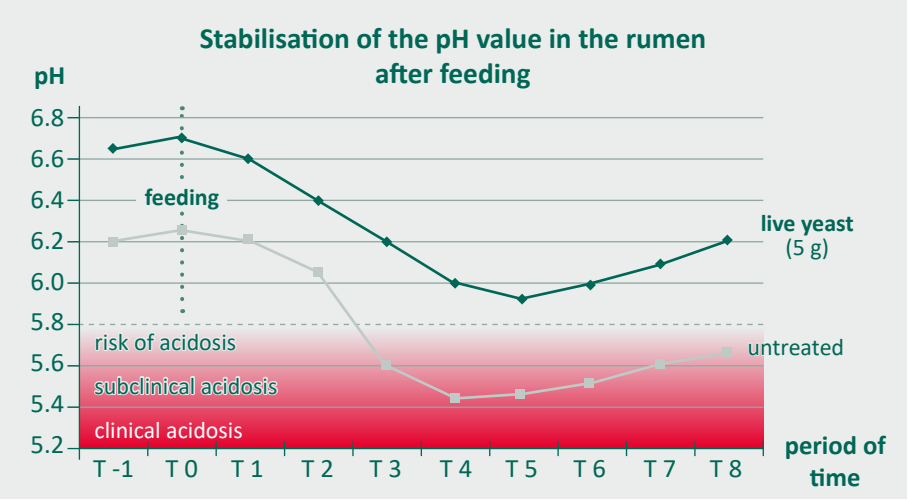
Lactic acid-consuming bacteria are particularly stimulated and their ruminal population increases significantly.

An increased transformation from lactic acid into propionic acid further diminishes the risk of acidosis when feeding high-energy rations.

Stabilizing the pH

Stabilizing the rumen pH is of special significance (see chart).

A pH-level below 5.8 bears the risk of irreversible damage to the ruminal mucosa caused by the acid as well as the risk of killing a great number of ruminal bacteria. When degrading, bacteria release endotoxins which cause symptoms of poisoning like laminitis. This development may be avoided by feeding live yeast, keeping the pH at a safe level above 6 (see upper graph). This protects both ruminal bacteria and ruminal mucosa.



source: Lesaffre Feed additives

Ruminal cross-section

A high-capacity rumen features a dense “lawn” of villi.

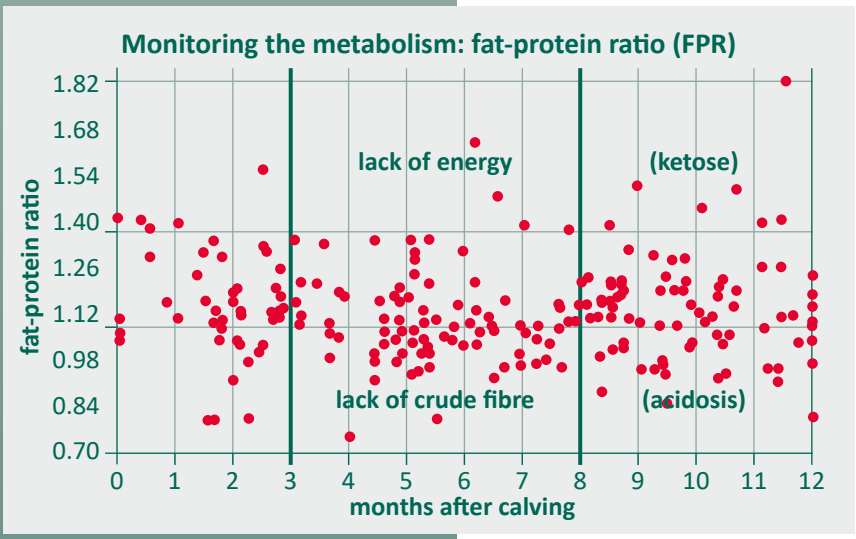
Please note: detoxification function ceases!

If the pH drops below 6, a vital function of the rumen will falter: The degradation of toxins by single cell organisms like protozoa. Protozoa degrade complicated molecules such as mycotoxins but require a higher pH level for maintaining their vital functions. Thus, a rumen with frequently low pH levels bears a high risk that toxins are not degraded and will get into all organs via the bloodstream further on in the intestinal tract.

Improved protein supply

A well-functioning rumen is the basis for healthy, high-yielding dairy cows. The more microorganisms are active in the rumen, the better the feed conversion.

jbs rinderhefe 5/10 ph increases the ruminal microbial population and provides the cow with a better supply of high-quality, easily digestible bacterial protein in addition to improving feed conversion and increasing feed intake. This in turn has positive effects on milk yield. Phenols additionally increase animal health.



Evaluating the feeding's success by evaluating milk components

Intensive studies are necessary if specific problems in animal health need to be solved. However, the drawing of samples from the dairy tank as well as the individual results of the analyses required for dairy milk's quality control provide a good data set for a first evaluation of the feeding's success.

Milk fat content

The milk fat content depends upon the rumen's acetic-propionic acid ratio. The higher the content of acetic acid, the higher the content of fat in the milk. Even though the rumen and therefore the fat content is mainly influenced by the feeding, it is also affected by other criteria such as genetics, breed, season and lactation state as well as by milking equipment and cooling technology.

Low milk fat content (< 3.6 %) → check causes:

- shortage of textured crude fibre, reduced rumination (< 40 chewings per bite) → acidosis
- ration's particle size is altogether too small or particles are too big so that the cows are able to sort through the ration and reject certain parts
- too many readily digestible carbohydrates in the ration → acidosis
- too much crude fat (app. > 1 kg/day) results in the formation of conjugated linoleic acid and the inhibiting of the udder's milk fat synthesis
- lack of feed
- faulty cooling, temperature is too close to freezing point resulting in foaming in the tank

Increased milk fat content (> 5 %) → check causes:

- consider the risk of ketose if protein content is simultaneously low (fat-protein ratio ≥ 1,5)
- crude fibre content is too high

Milk protein content

The milk protein content is an indicator for the energy supply. It does not depend as much on the feeding as the milk fat content and is also influenced by genetics, race, season and lactation state. The difference between the protein content in the first and third third of lactation should not exceed 0.6 percentage points per single animal.

Low protein content (< 3.0 %) → check causes:

- insufficient feed intake
- ration's energy content is insufficient for an adequate performance
- lack of (high quality) protein in the ration

High milk protein content (> 3.8 %) → check causes:

- amount of concentrated feed / energy components is too high → risk of acidosis
- the protein content tends to be higher if there are problems with udder health

Milk urea content

The urea content in milk should always be considered together with the protein content (see above). It says something about the utilization of the crude protein and thus the rumen function. Elevated levels of protein in the ration increase the milk's urea concentration.

Based on the milk yield, the following applies:

- milk protein normal: 3.2 - 3.8 %
- upper limit 300 mg urea per kg milk, above → reduce protein intake to avoid liver load

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