orgacell sc

Feed supplement containing valuable protein and live yeast

orgacell sc® is a premium complementary feedstuff consisting of a probiotic and a prebiotic yeast component. A small amount of vegetable oil ensures low dust properties as well as excellent flowability.

Packaging: 20 kg bag

Application:
orgacell sc® is mixed into the daily feed ration along with other dry components.

Use 40 g per animal (dairy cows and fattening bulls) per day. If the milk yield is high it makes sense to increase the dosage to 50 or 60 g per day.

Yeast supports animal health
A yeast cell's outer layer possesses a network structure with a high binding capacity. Administering 500 g of yeast per tonne of feed will result in an absorbant surface equaling the size of several hectare. Heavy metals, pathogenic germs and toxins can be bound to the yeast's cell wall. This way, they will be excreted instead of getting into the bloodstream. In addition, cell wall substances stimulate the immune defence.

This does not only support the body's immune defence, but also results in a higher content of immunoglobulin in the dairy cow's milk. Thus, in a manner of speaking, the dam's improved health status is passed down to the calf.

Yeast has positive effects in the animals' digestive tract
The "prebiotic" effects of inactivated yeast refer to positive yet passive effects on the microbial population already residing inside the animal. The better the useful microbes in rumen and intestine are supported with nutrients, vitamins etc., the better the feed conversion and the healthier the animal.

"Probiotic" refers to products containing live, viable microorganisms which incorporate themselves into the animal's microflora and influence the residing microbial population in a positive way. In **orgacell sc®**, this part is adopted by a live yeast strain of *Saccharomyces cerevisiae*.

While antibiotics annihilate the effects of most bacterial probiotics, yeast stays unaffected by them. Therefore, yeast has a supporting and regenerating effect after the administration of antibiotics.

Numerous feeding trials confirm that live yeast is able to increase animal feed intake and performance.

Live yeast application – average effects of two trials

1. Field trial in France, 541 dairy cows on 22 farms
2. University of Utrecht, 67 dairy cows

production of milk fat & -protein				milk yield	
milk fat (g/day)		milk protein (g/day)			
untreated	**live yeast**	untreated	**live yeast**	untreated (kg/day)	**live yeast**
1. 1199	1254 (+ 55 g)	894	938 (+ 44 g)	27.1	28.6 (+ 1.5 kg/d.)
2. 1360	1380 (+ 20 g)	1170	1230 (+ 60 g)	33.8	35.7 (+ 1.9 kg/d.)

source: Lesaffre Feed Additives

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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 **orgacell sc®**, repeat the test.

Feeding of live yeast is clearly visible in a reduced amount of residue – especially the amount of maize kernels is significantly reduced.

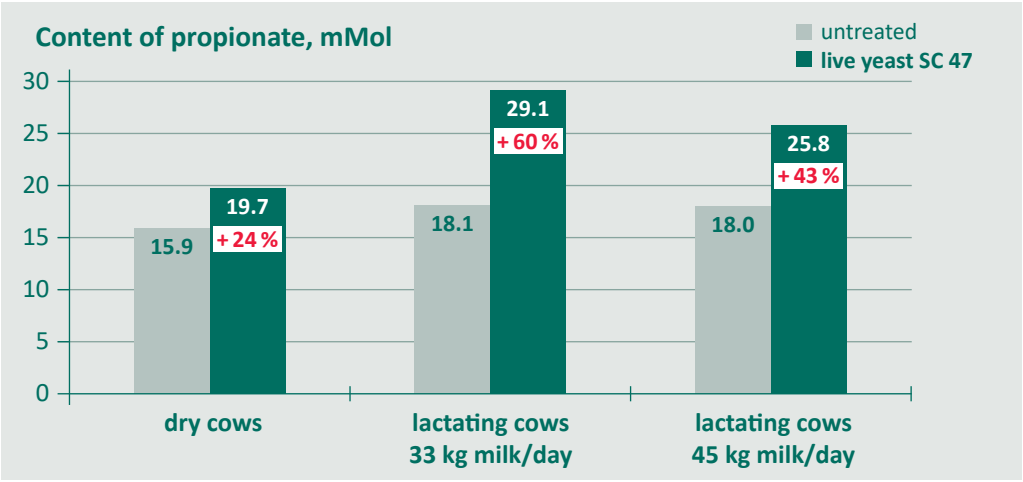
feed ration **without** live yeast

feed ration **with** live yeast

Effects of the live yeast used in orgacell sc®, *Saccharomyces cerevisiae*, on the rumen

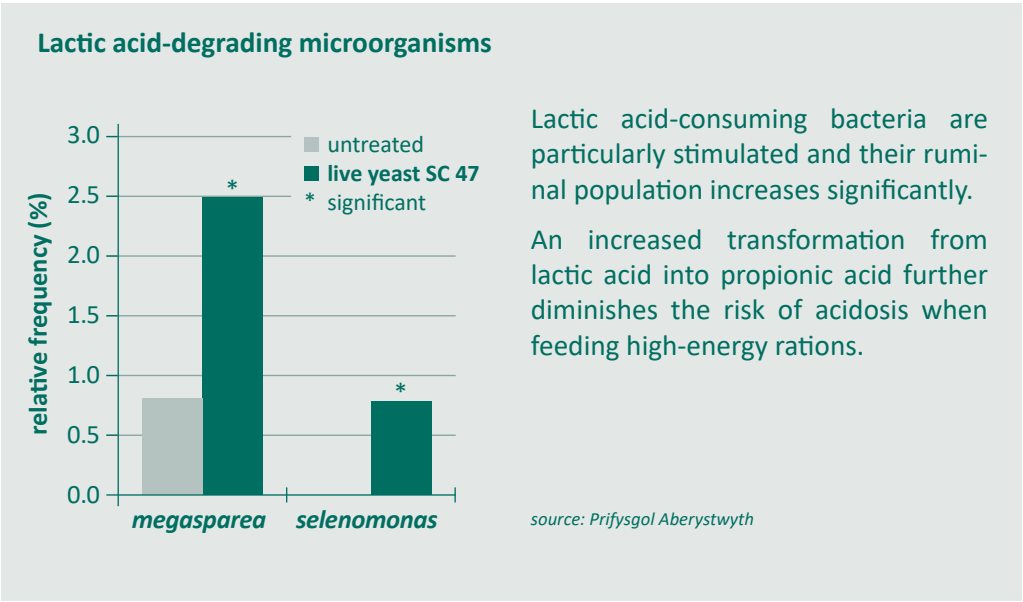
Live yeast consumes ruminal oxygen

Oxygen is toxic for the most significant 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 dry period as well as during lactation, feeding low-energy rations results in an increased production of propionic acid in the rumen. In the liver, this acid is subsequently transformed into the energy source glucose.



source: Lesaffre Feed Additives

Live yeast keeps rumen pH at optimal level



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.

source: Prifysgol Aberystwyth

Stabilizing the pH

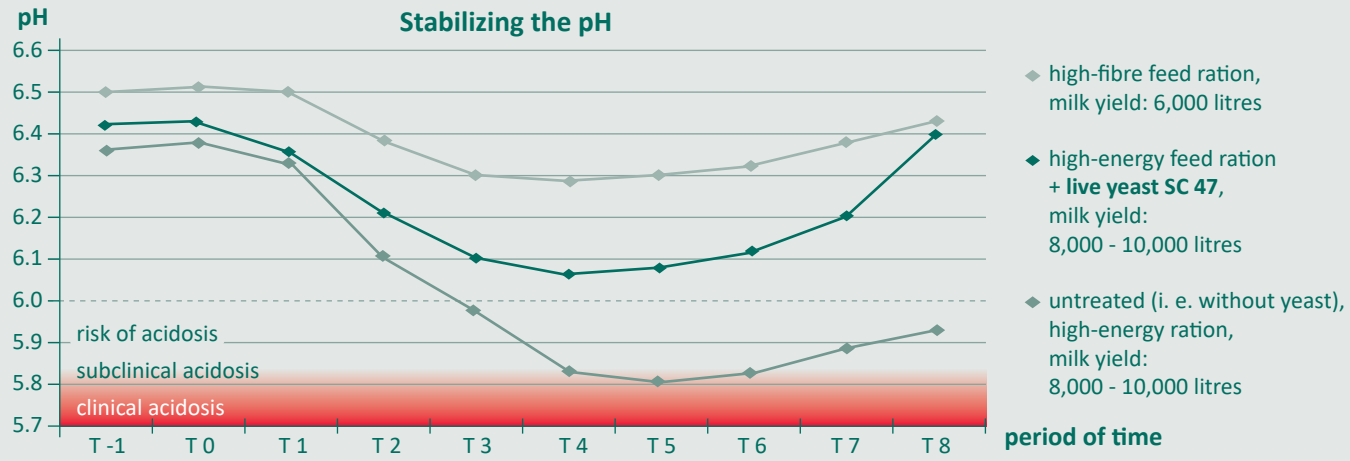
In high-energy rations, stabilizing the rumen pH is of special significance (see chart). If the milk yield is low, a high-fibre feed ration will satisfy the cow's energy requirements (see upper curve).

A rise in the level of performance requires high-energy rations containing starchy feedstuff / concentrate. These result in an increased production of lactic acid in the rumen and a subsequent lowering of the pH when starch/carbohydrates are degraded (see lower curve).

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 middle curve). This protects both ruminal bacteria and ruminal mucosa.

Ruminal cross-section

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



source: Lesaffre LFA

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 the high risk that toxins are not degraded; and further on in the intestinal tract, will get into all organs via the bloodstream.

Double protection against toxins

By both securing the rumen pH through providing live yeast, as well as the binding capacity of the inactive yeast's cell walls; **orgacell sc®** ensures that the animals are protected from the pathogenic influence of endo- and mycotoxins. Pathogens like *E. coli* and salmonella attach themselves to the yeast cell wall substances. This prevents them from getting into the bloodstream and preserves animal health.

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High-quality nutrition for ruminal microbes

Ruminal microbes use the yeast's easily digestible protein as a food source. Even though they are able to build amino acids using nitrogen, they have special requirements regarding their protein supply. The better the food source the higher the growth of their population and the better the ratio of feed conversion.

Inactivated yeast is more than just a protein source

Inactivated yeast does not require nutrients from the animal but provides the microflora with many positive substances. Feed digestion is improved, especially the fibrous contents.

Yeast cells store micronutrients in such a way that they are organically bound to amino acids. This facilitates the animal's absorption of micronutrients into the bloodstream.

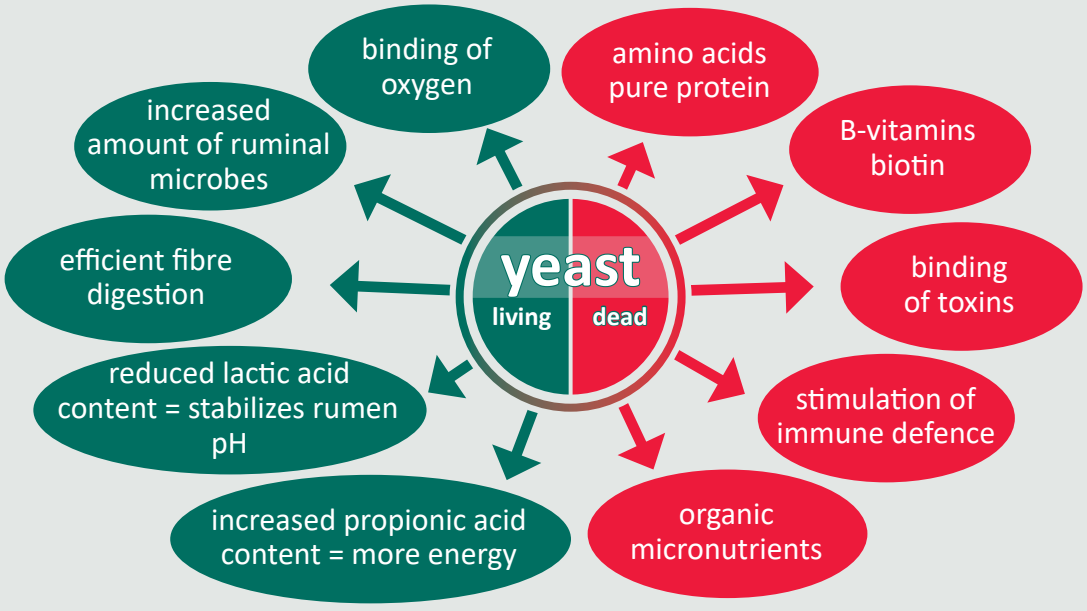
A winning team

In **orgacell sc®**, live yeast combined with inactivated yeast display the whole range of positive effects of yeast cells on animal health and performance.

Live yeast alone is added in small amounts – therefore it might occur that there is not enough material for a sufficient binding capacity to yeast cell walls. Live yeast also contains only a low amount of high-quality protein.

The higher amount of inactivated yeast provides the animal with high-quality amino acids and cell wall substances as well as organically bound micronutrients.

Sum of effects



- **increased feed intake**
- **improved animal health**
- **better performance**

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