

Real brewers' yeast! Really good effect!

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For generations, horse owners have used brewers' yeast as a valuable nutritional supplement. Feeding it has many advantages. Classically, brewers' yeast is obtained and refined as a by-product of brewing. Much more frequently, however, yeasts are now produced industrially. Whether live yeast, brewers' yeast, or ethanol yeast – the market is now very confusing.



Yeast is not necessarily BEER yeast!

What formerly used to be standard, the use of brewers' yeast from breweries, is now a major exception! Yeasts differ in terms of production process, form, strain, and thus nutrient content and mode of action (see Table 1). European feed legislation does not provide for any differences in declaration.

All yeasts are declared as yeasts, *Saccharomyces cerevisiae* (SC), or brewers' yeasts. The horse owner cannot tell whether he is feeding real brewers' yeast or sugar, baker's, urea or fermentation yeasts.

The latter, so-called "double-fermented yeasts", cannot be compared to pure yeasts at all. They are "fermented" and dried on nutrient substrates such as DDGS (Dried Distillers Grains with Solubles). The cereal content is very high, the yeast content accordingly low (< 10%). While the American AAFCO clearly declares these products as so-called "yeast culture", here they are often incorrectly labelled as yeast only, without mentioning the DDGS.

Live yeasts (so-called probiotics) can be identified directly on the label. They must be identified as zootechnological additives, including EU registration number, strain, and indication of CFU (colony-forming units).

| Type (production process) | Form |
|---|--|
| <ul style="list-style-type: none"> • baker's yeast • ethanol yeast or molasses yeast • bioethanol or sugar yeast | <ul style="list-style-type: none"> • live yeast (probiotics) • inactive yeasts (prebiotics) • inactive yeasts enriched with minerals (e.g. selenium yeasts) |
| <ul style="list-style-type: none"> • fermentation yeasts or "yeast cultures" • urea yeasts | <ul style="list-style-type: none"> • cereal nutrient substrates with inactive yeast contents • yeasts enriched with urea to increase the protein content |
| <ul style="list-style-type: none"> • brewers' yeast or "real brewers' yeast" | <ul style="list-style-type: none"> • inactive brewers' yeast (prebiotics) • inactive brewers' yeast fibre products (brewers' yeast and functional fibres) |

* no claim to completeness

Brewers' yeast or live yeast – what is the difference?

The main difference lies in the activity of the yeast cells in the gastrointestinal tract. Live yeasts consist of active yeast cells. They are supposed to survive the stomach/small intestine undigested and remain capable of reproduction, i.e. active, in the large intestine (so-called probiotics). They are produced industrially. Sugar-rich nutrient substrate such as molasses is "inoculated" with yeasts and the yeast is later "harvested". Live yeasts are mainly used for livestock, for example cows. Only very few are also approved for horses. The effect of probiotics is scientifically discussed very controversially (Vervuert 2019*):

- Do probiotics actually arrive in the large intestine capable of reproduction?
- Is a proliferation of yeasts in the large intestine wanted at all?

* Influencing the equine microbiota through feeding and probiotics: current state of research and legal bases, Tierärztliche Praxis 2019; 47: 35-48; ISSN1434-1220

Live yeast (*Saccharomyces cerevisiae*) do not necessarily belong to the "normal" microflora of a healthy horse. A multiplying would therefore not be desirable either. On the other hand, there are so-called inactive yeasts or "dead yeasts". Leiber Brewers' Yeast products are based on brewery by-products, which are produced in compliance with strict food guidelines. The brewers' yeast is refined, dried, and thus inactivated. Leiber Brewers' Yeasts are no longer capable of reproducing in the horse's intestine. They serve as a nutrient substrate for the microbiome (so-called prebiotics). Real brewers' yeast has a beer-typical, slightly bitter taste. This is due to the bitter substances of the hops, which the real brewers' yeast takes on during the brewing process.

Nutritional building blocks for fitness and vitality?

Real brewers' yeasts provide many bioavailable nutrients such as protein, essential amino acids, vitamins (for example B vitamins), and trace elements. But also natural active ingredients such as nucleotides, glucans, and mannanoligosaccharides (MOS).



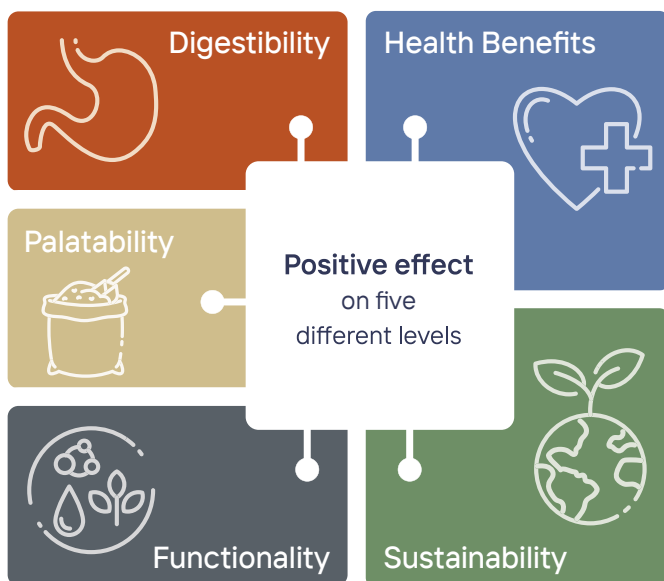
Key to a healthy gut

Leiber Brewers' Yeast products have dietary and prebiotic modes of action. They are high-quality nutrient substrates for the intestinal microbiome! With the help of the microbes in the large intestine, the horse can produce short-chain fatty acids (SCFA) itself through conversion processes and thus cover up to 70% of the daily energy requirement. Through the production of butyrate, the microbiome has a direct influence on the intestinal mucosa and thus on the gut health and the immune system.

The gut microbiome is very prone to failure

Negative changes in the gastrointestinal tract always have an impact on the composition and activity of the microbiome. The consequences include a reduced energy supply (SCFA) and the body's own nutrient production, such as biotin. Also visible externally with a time delay, for example in a poor coat change, shaggy coat, or brittle hoof horn.

The gut is connected to a variety of organs via the so-called gut-brain axis, gut-skin axis, and gut-lung axis.



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A permanently disturbed microbiome can therefore be the cause of many different diseases, such as laminitis. But they can also have a long-term negative impact on liver metabolism, hormone balance, and the immune system.

Feed the microbiome!

Digestion and especially microbial activity in the large intestine can be actively promoted with Leiber Brewers' Yeast products! The fibre-rich and prebiotic ingredients serve as a substrate for the intestinal microbiome and thus effectively influence energy and nutrient absorption. This contributes to the relief of the metabolism, a better immune defence, and thus a higher resistance to stress.



In addition, pectin-containing feeds such as sugar beet pulp or apple pomace (as in Leiber YeaFi® AB) or dietary ingredients (such as the spent grains in Leiber YeaFi® BT) (so-called spent grains yeast) provide high levels of fermentable fibres. They are ideal partners to further enhance the positive prebiotic effects of the brewers' yeast!

