What exactly are prebiotics?

Prebiotics are indigestible carbohydrates. “Indigestible" because they cannot be digested by the body's own enzymes in the stomach. Prebiotics therefore enter the large intestine undigested for the most part and can be utilized there by the intestinal bacteria as food and for energy production. Prebiotics include, for example, inulin or various oligosaccharides (mannan, fructo-, galacto- or xylo-oligosaccharides). Prebiotics cannot multiply as they are inactive and therefore not living organisms. They must be clearly distinguished from probiotics (see Fig. 1)!

A well-known prebiotic is the brewers’ yeast cell wall. This is rich in mannanoligosaccharides (MOS). Brewers’ yeasts are by-products of beer production. They are inactivated by heat and refined into high-quality animal feed in further processing steps.

Not all brewers’ yeast is the same

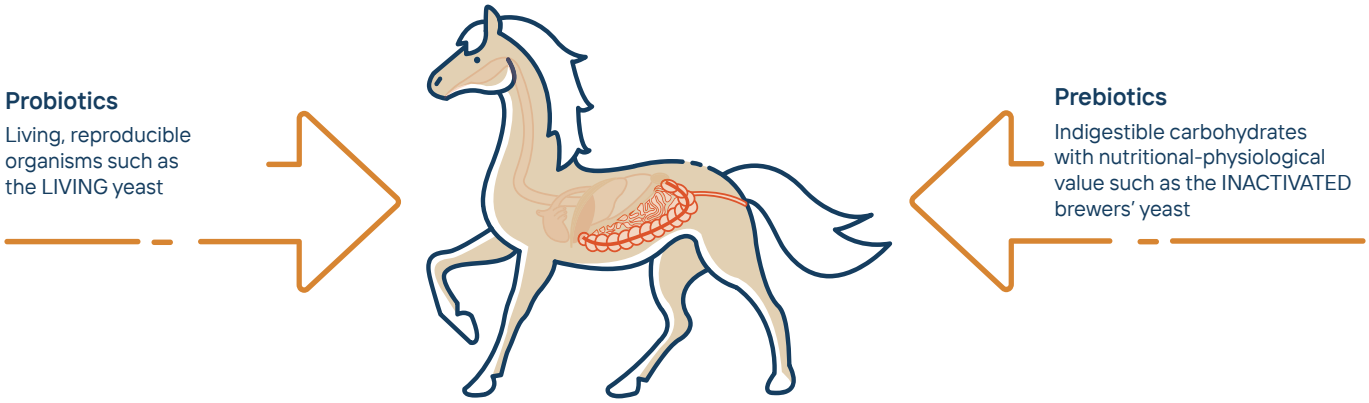
All yeasts are labelled as yeasts, Saccharomyces cervisiae (SC), or brewers’ yeasts. The horse owner cannot recognize whether he is feeding genuine brewers’ yeast or sugar, bakers’, urea or fermentation yeasts. The latter, so-called “double-fermented yeasts", cannot be compared with pure yeasts. They are “fermented" on nutrient substrates, such as grain stillages, and dried. The grain content is very high, the yeast content correspondingly low (< 10%).
While the American AAFCO (Association of American Feed Control Officials) clearly declares these products as “yeast culture", they are often incorrectly labelled here as yeast only, without referring to the grain stillage.

Prebiotics displace pathogenic germs in the intestine

The indigestible components of the food cannot be digested by the body’s own enzymes and therefore reach the large intestine, where they can then be fermented by the intestinal bacteria. On the one hand, the prebiotics serve as food for the intestinal bacteria. The intestinal bacteria eat the indigestible food components and can thus grow and multiply.
The beneficial intestinal bacteria therefore spread and displace bad bacteria such as pathogenic germs. This creates a healthy balance of bacteria in the intestinal flora, the microbiome. This balance is also known as “eubiosis".

Read also: What exactly are postbiotics?

Fig. 1: Comparison of probiotics and prebiotics



Prebiotics promote intestinal health and energy production

While the intestinal bacteria ferment the indigestible feed components, metabolic products are formed. These metabolic products, also known as metabolites, include short-chain fatty acids (SCFA), among others. These short-chain fatty acids are used to generate energy and are one of the horse's most important sources of energy. The horse can use them to generate up to 70% of its energy in maintenance metabolism.
Brewers' yeast can improve the activity of the horse's large intestine through the prebiotic effect, as just described. Brewers' yeast is also regarded as a valuable dietary feed in horse nutrition due to its high levels of nutrients and active ingredients. The feed is suitable for all horses, ponies and donkeys – for broodmares and foals as well as for leisure horses, racing and sport horses.

Fig. 2: Effect of prebiotics or prebiotic modes of action

Nutrition

Prebiotics are food for health-promoting bacteria

Health-promoting bacteria **multiply**

Pathogenic germs **are displaced**

Eubiosis is promoted (microbial balance)

Energy

Intestinal microbes digest prebiotics, producing **metabolites**

These metabolites are, for example, **short-chain fatty acids (SCFA)**

SCFA are used to **generate energy** and promote **intestinal health**

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