

Only the best for our loved ones!



Real
Brewers'
Yeast

Since 1954

Pet



Leiber
Excellence in Yeast

Brewers' yeast upcycling at a world-market level – since 1954

Leiber refines brewers' yeast (*Saccharomyces cerevisiae*) into innovative products for humans and animals. For our customers we conduct research in our own laboratories and develop tailor-made solutions for healthy nutrition, biotechnology and agricultural applications. We reliably supply excellent products – and have been upcycling at world market level since 1954.

Our actions are environment-friendly and climate-conscious

Our activities have an impact on humans, animals, and the environment. That's why we promote responsible behaviour and offer sustainable products. We take care to treat our stakeholders with fairness and appreciation. Our actions are environment-friendly and climate-conscious. We work to keep society healthy long-term – which of course includes taking responsibility for our employees. For us, sustainable behaviour is a vital component of our core business. After all, upcycling brewers' yeast is at the heart of what Leiber has always been about:

"Give Yeast a Second Life"

Animal Nutrition: keeping an eye on what's important

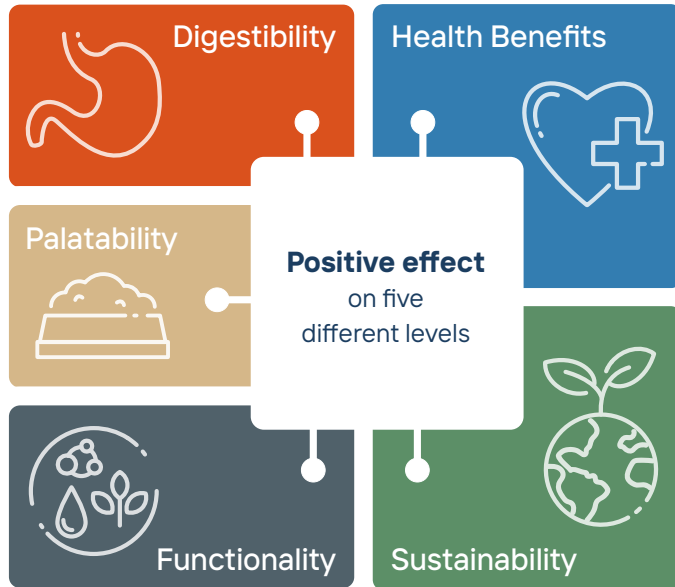
Leiber Animal Feed develops and produces sustainable brewers' yeast products. Our primary goals are to improve feed quality, feed acceptance, and the well-being of your animals, especially in terms of animal welfare. We rely on the latest scientific findings and collaborate with international research institutions and universities.

All Leiber Brewers' Yeast products represent uncompromising quality. The highest standards are applied during production in the breweries and during refinement in our modern production plants. Long before sustainability became a buzzword, Leiber's maxim was: "There are only valuable secondary streams." We are building our future on this solid foundation – with inquiring minds, passion for innovation and the latest technologies.



Naturally versatile!

Brewers' yeast (*Saccharomyces cerevisiae*) is a proven raw material with many positive effects. Despite often being seen as only a high-quality natural protein and vitamin B source, Leiber Brewers' Yeast products can do so much more:



With a high level of technology investment, uncompromising quality standards and an unceasing innovative spirit, Leiber turns a brewery by-product into healthy and sustainable products for pet food. Leiber Brewers' Yeast products are designed to:

- | stabilize the gastrointestinal tract
- | provide dietetic and prebiotic mechanisms
- | adsorb and inactivate harmful bacteria and mycotoxins
- | strengthen specific and non-specific immune response

Our product range:

Leiber Brewers' Yeast®

- | Pure brewers' yeast (unextracted)
- | Interyeast®, Interyeast® Vital

Leiber YeaFi®

- | Brewers' yeast bound to functional fibres

CeFi®pro

- | Brewers' yeast autolysate

Biolex® MB40

- | Yeast cell walls

Leiber® Beta-S

- | Highly purified beta-glucans

Leiber NuTaste®

- | Natural yeast extracts



Leiber **Brewers' Yeast**

Real brewers' yeast, really effective!

The raw materials for Leiber Brewers' Yeast® products are produced in breweries in compliance with strict food guidelines and refined at Leiber using state-of-the-art, partly self-developed processes into valuable products. They are rich in many bioavailable active ingredients and nutrients like proteins, amino acids, B vitamins, minerals and trace elements.

Leiber Brewers' Yeast® is so-called real brewers' yeast, because it contains the polyphenols (alpha and beta acids) of the hops that are added during the brewing process. The ingredients of hops have additional antioxidant and bacteriostatic effects and are thus the ideal complement to the beneficial nutritional properties of brewers' yeast that have been known for a long time.

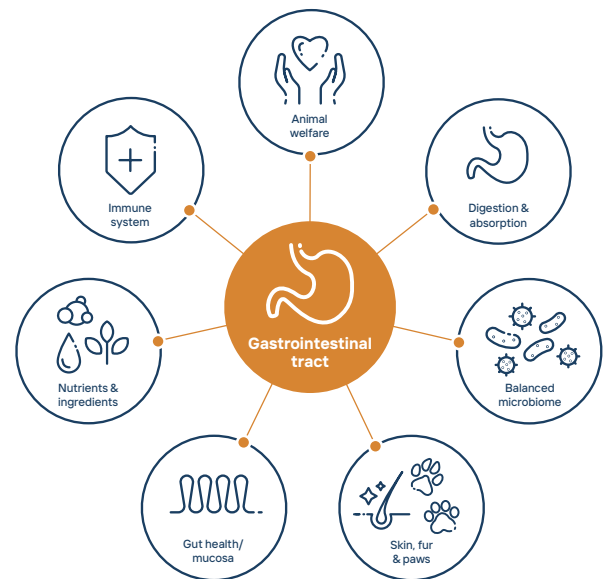
Leiber Brewers' Yeast® product benefits:

	high bioavailability of nutrients and active ingredients
	supports digestion
	promotes skin and coat quality
	improves acceptance

Leiber Brewers' Yeast® composition:

Analytical constituents and contents	
Crude protein:	46.0%
Crude fat:	2.7%
Crude fibre:	1.0%
Crude ash:	8.0%
Lysine:	3.2%
Methionine:	0.6%
Physical properties	
Structure:	dust-fine product*
Colour:	light brown
Odour:	typical of brewers' yeast
Minimum shelf life:	3 years
Dosage recommendation	
Dosage:	10-30kg/to
Dogs < 30kg:	2-4g/day
Cats:	0.5-1g/day

* available in various qualities (e.g. spray-dried, drum-dried, tablet grade, debittered, food grade)



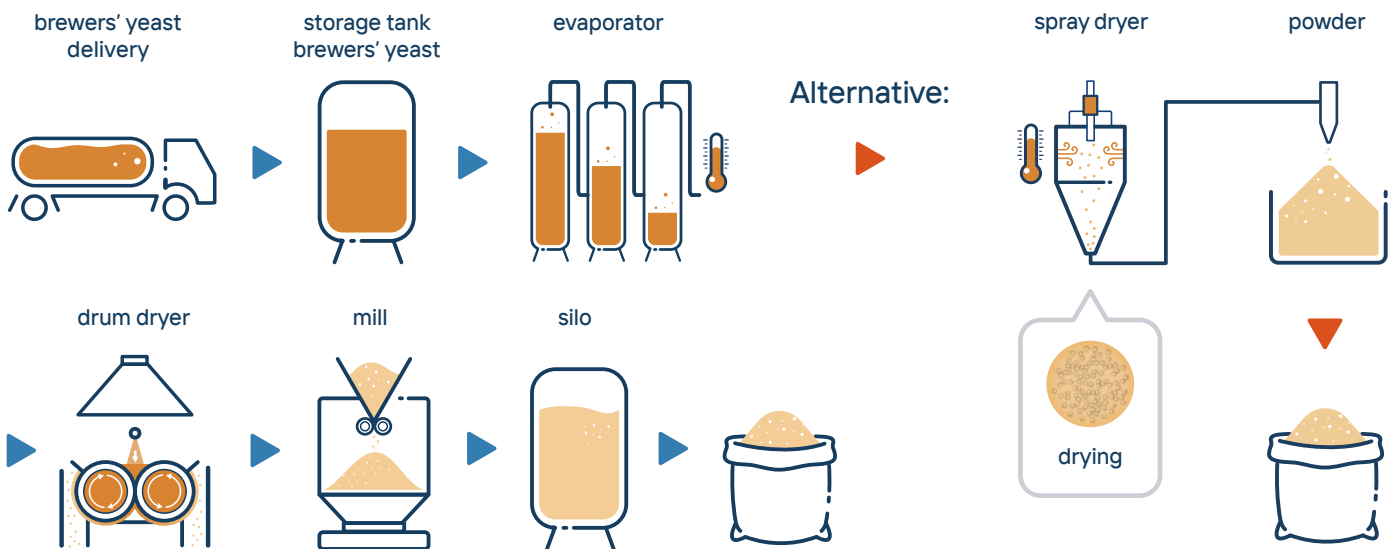


Where does the brewers' yeast come from?



- In the beer-brewing process, brewers' yeast ferments malt sugar to form carbon dioxide and alcohol.
- The brewers' yeast multiplies during this fermentation.
- Leiber takes over the brewers' yeast directly from the breweries.
- Leiber refines brewers' yeast into natural and healthy products for humans and animals.

Production process: Leiber Brewers' Yeast®

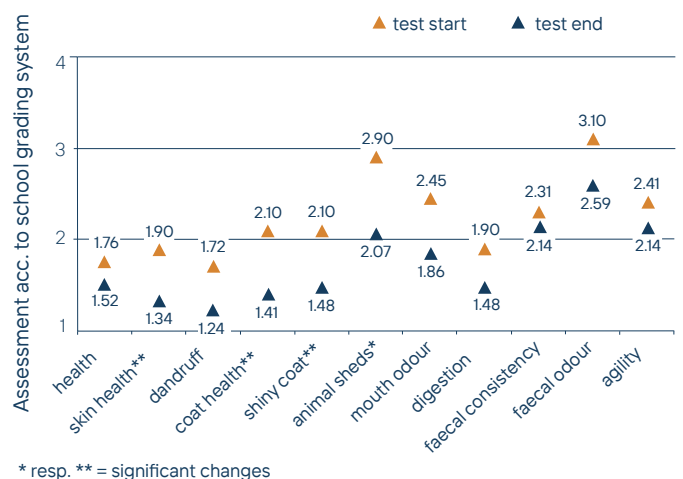


Research

Influence of brewers' yeast on skin, coat, digestion and faeces in 28 dogs and 29 cats. SAW Marktforschung Ratingen (G), Leiber GmbH

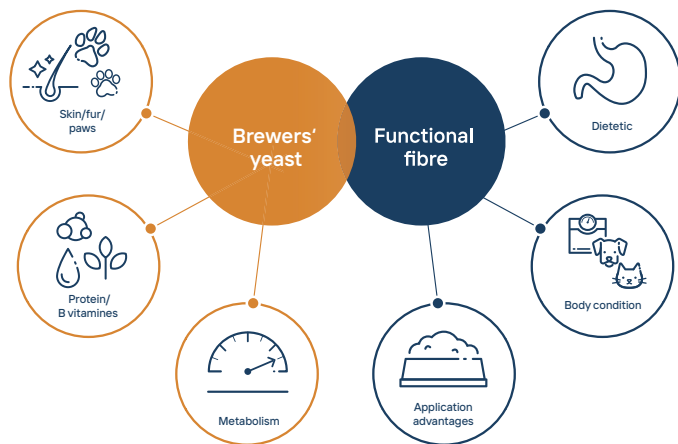
After feeding Leiber Brewers' Yeast® the pet parents rated the overall health and well-being of their animals as improved (Fig. 1). Brewers' yeast showed many positive effects on digestion, coat and skin, but also on the reduction of faecal or mouth odour. It could be disproved that feeding brewers' yeast could possibly lead to increased dandruff or flatulence.

Fig. 1: Effectiveness evaluation Leiber Brewers' Yeast® by cat owners (n = 29); mean values in comparison




Unique brewers' yeast fibre products.

Leiber YeaFi® – almost a classic as a brand! This unique combination of real inactivated brewers' yeast with valuable dietary fibre carriers have been produced according to the original recipe since 1954. The fibre components reinforce the beneficial nutritional properties of brewers' yeast in an ideal way.



In addition, functional fibre from secondary food streams is not only fully in line with today's sustainability trend, but also has many advantages, including technological ones like:

Leiber YeaFi® product benefits:

-  easy handling, dosage and storage properties
-  production advantages, e.g. Maillard reaction, water retention, natural colouring

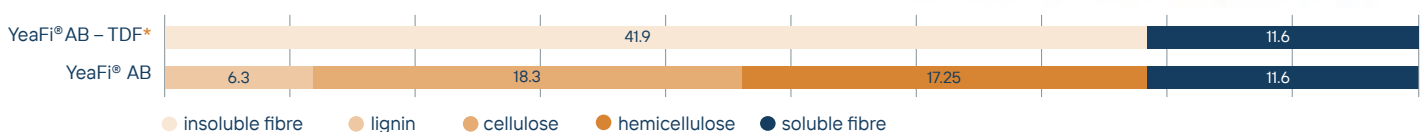
Leiber YeaFi® AB composition:

Analytical constituents and contents	
Crude protein:	21.0%
Crude fat:	3.0%
Crude fibre:	16.0%
Crude ash:	5.0%
Lysine:	0.8%
Methionine:	0.3%
Physical properties	
Structure:	non-hygroscopic
Colour:	brown
Odour:	yeast with fruity notes
Minimum shelf life:	3 years
Dosage recommendation	
Dosage:	20-50kg/to
Dogs < 30kg:	5-10g/day
Cats:	1-1.5g/day

Leiber YeaFi® AB

Brewers' yeast bound to apple pomace and beet pulp

Also available as fine milled type or with other fibre carriers like e.g. spent grain or DDGS (Dried Distillers Grains with Solubles).



*Total dietary fibre (TDF)

Leiber YeaFi® AB offers an ideal ratio of soluble and insoluble fibres.



Research

Effect of different brewers' yeast products on faecal characteristics in healthy adult dogs. University of Ghent (BEL), Faculty of Veterinary Medicine, Faculteit Diergeneeskunde, Prof. Dr. M. Hesta; unpublished

Leiber YeaFi® AB and Pure Brewers' Yeast (PB Y) were consumed similiary, even at higher dosages. The faecal consistency score ranged from 2 (firm but not hard) to 4 (very moist/soggy) (Fig. 1). Scores of 2 and 3 are considered as normal. Leiber YeaFi® AB even in higher dosages had no negative impact on the faecal consistency. The daily faecal production was not increased (Fig. 2).

Fig. 1: Positive effects on faecal score with Leiber YeaFi® AB

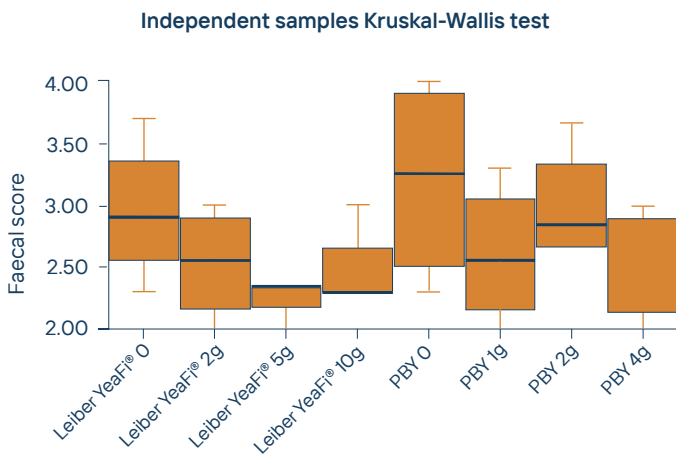
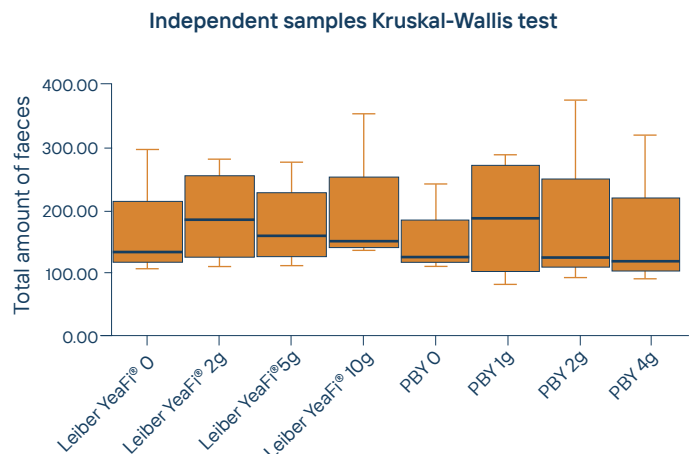


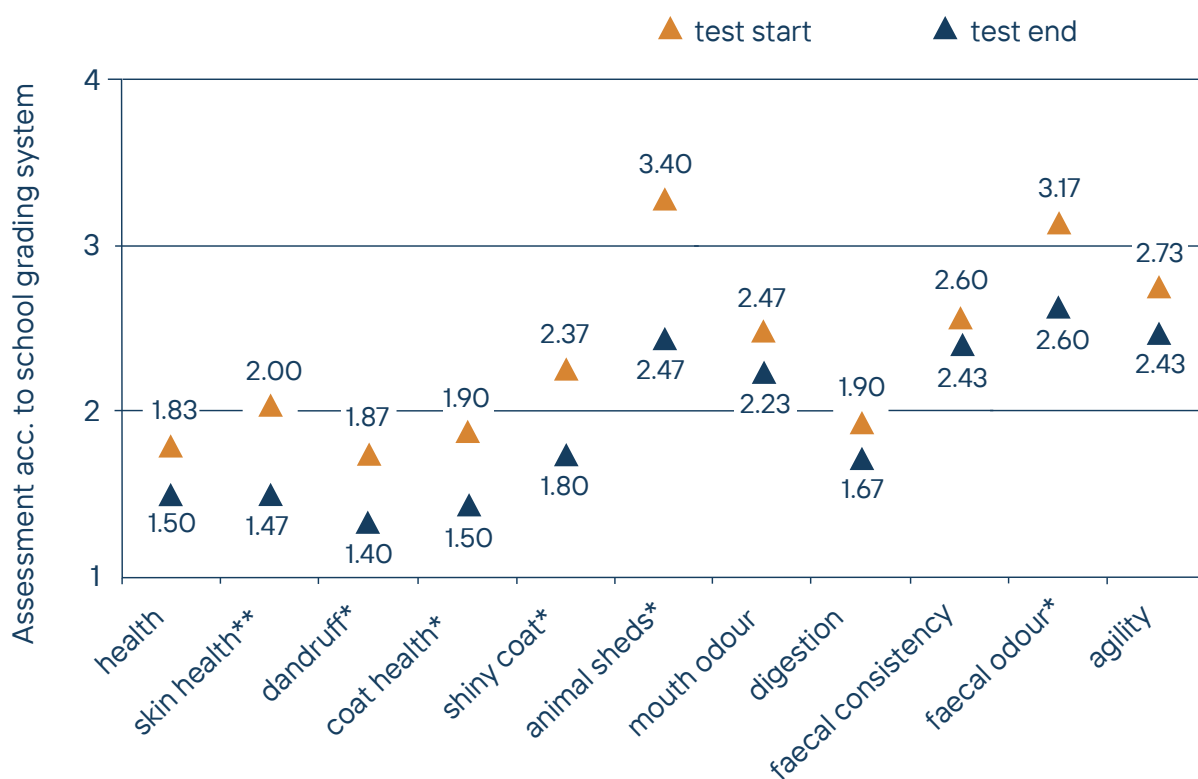
Fig. 2: Leiber YeaFi® AB showed no increase in faecal production



Influence of brewers' yeast on skin, coat, digestion and faeces in 30 dogs and 29 cats. SAW Marktforschung Ratingen (G), Leiber GmbH

Leiber YeaFi® AB was mixed by the pet parents directly into the wet food. The food was well accepted especially from dogs. 83% of dogs liked their wet food with Leiber YeaFi® AB as much or even more than before. The use of Leiber YeaFi® AB showed an improvement in digestion, skin and coat health, in dogs and cats (Fig. 3). 80% of dog owners concluded they will continue to feed Leiber YeaFi® AB.

Fig. 3: Effectiveness evaluation Leiber YeaFi® AB by cat owners (n = 30); mean values in comparison







* resp. ** = significant changes

Best values in bioavailability!

Leiber CeFi^{pro} is an all-rounder, but especially suitable for special product requirements for feeding young or senior animals. The reason for this is that the autolysed yeasts in Leiber CeFi^{pro} are partially pre-digested, therefore increasing the nutrients' bioavailability for the animal.

A particularly gentle autolysis process enables Leiber CeFi^{pro} to combine the positive effects of beta-glucans and mannan oligosaccharides (MOS) in the cell wall with the natural components of the cell interior like peptides, free amino acids and nucleotides in one product. As an example, dietary nucleotides are considered as essential nutrients in intestinal development. Nucleotides can promote cell growth and proliferation.

CeFi^{pro} product benefits:

-  high bioavailability of nutrients and active ingredients
-  supports health-promoting microbiome
-  supports the development and integrity of intestinal tissue
-  enhances palatability

Analytical constituents and contents

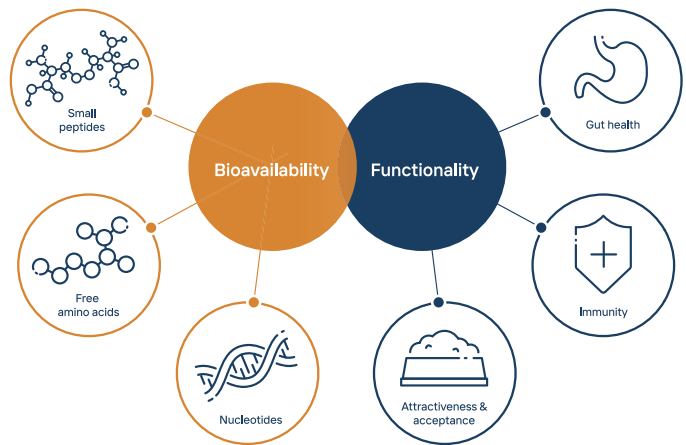
Crude protein:	50.0%
Crude fat:	3.0%
Crude fibre:	1.0%
Crude ash:	6.6%
Lysine:	3.6%
Methionine:	0.8%
Mannan oligosaccharides (MOS) + glucans:	20.0-25.0%

Physical properties

Structure:	dust-fine product
Colour:	light brown
Odour:	typical of brewers' yeast
Minimum shelf life:	3 years

Dosage recommendation

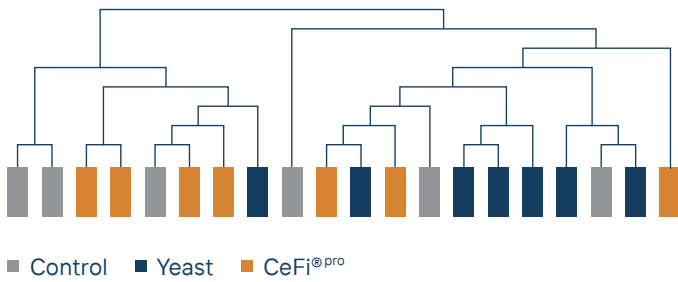
Dosage:	5-10kg/to
Dogs < 30kg:	1-2g/day
Cats:	0.25-0.5g/day





Research

Autolysed yeast with positive influence on the intestinal microbiome of dogs; Free University of Berlin, Dept. of Vet. Med., Institute for Animal Nutrition; Prof. Dr. J. Zentek, Germany; unpublished



With regard to diversity (similarity dendrogram), two groups emerged. CeFi^{pro} formed a separate main cluster (left group), instead of pure brewers' yeast (right group). CeFi^{pro} is digested in the upper digestive tract, while pure brewers' yeast is more likely to be digested in the lower digestive tract.

Tab 1: Increase in bacterial metabolites in the faeces of dogs [g/kg or μmol/g sample]

	Control		CeFi ^{pro}	
	before	after	before	after
L-lactate	0.3 (± 0.3)	1.9 (± 1.5)	0.7 (± 0.9)	3.6 (± 4.1)
D-lactate	0.1 (± 0.1)	1.2 (± 1.1)	0.5 (± 0.8)	3.4 (± 4.3)
Total lactate	0.4 (± 0.4)	3.2 (± 2.6)	2.3 (± 1.6)	7.0 (± 8.4)
Acetate	87.3 (± 2.9)	78.5 (± 15.7)	79.3 (± 13.7)	69.2 (± 16.5)
Propionate	28.5 (± 4.5)	20.2 (± 9.8)	29.2 (± 10.6)	24.1 (± 9.4)

(Significant differences within an experimental group are printed in bold; Mann-Whitney before/after; p ≤ 0.1)

Positive effects on health promoting microbiome (Tab. 1):

- significant increase in lactate production (e.g. Lactobacillus)
- significant decrease in peptidolytic bacteria (e.g. Peptostreptococcus)
- reduce proinflammatory markers, e.g. IL-6, IL-8 and IL-17A (Fig. 2 und Fig. 3)



Effect of Leiber yeast products on immune parameters (specific and non-specific) and antiinflammatory/proinflammatory interleukines (in vitro, canine cells). Faculty of Vet. Med., Dept. of Virology, Parasitology and Immunology; Ghent University, Belgium; unpublished

Fig. 2: Reduce IL-6 secretion after stimulation with 200μg/ml test material vs. medium

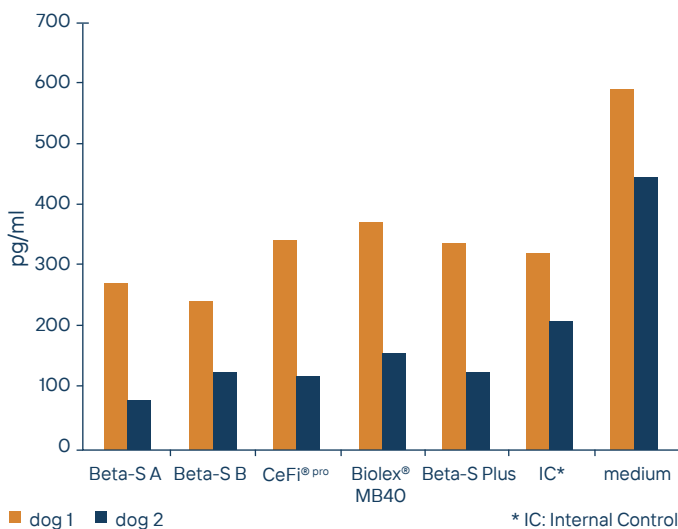
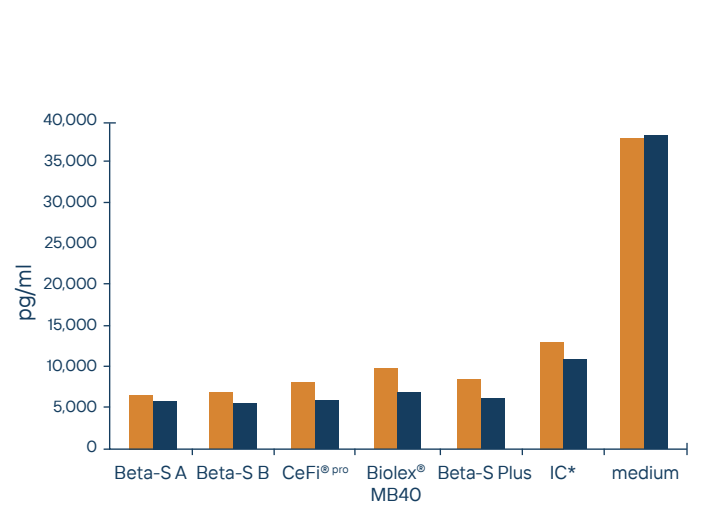


Fig. 3: Reduce IL-8 secretion after stimulation with 200μg/ml test material vs. medium

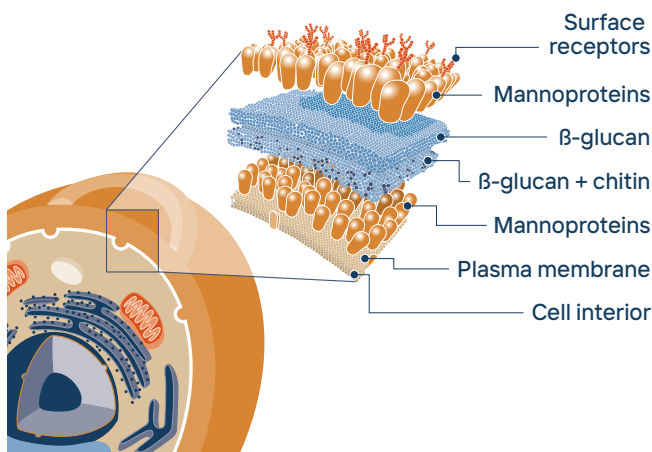


Biolex MB40

Naturally prebiotic!

Biolex® MB40 is characterized by its high levels of beta-glucans and mannan oligosaccharides (MOS) and a special surface structure with associated high adsorption power.

In a complex production process, yeast cell walls are separated from the cell interior (yeast extracts). Mannan oligosaccharides (MOS) and beta-glucans from yeast cell walls are concentrated and the specifically active segments of the cell wall are released.



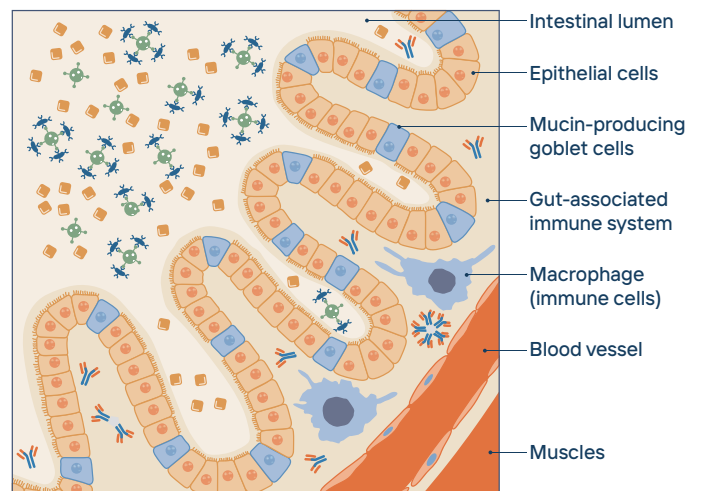
The positive effects, in particular on the microbiome (prebiotic effect), the immune system and binding activities of pathogens and mycotoxins have been scientifically proven many times.

Biolex® MB40 product benefits:

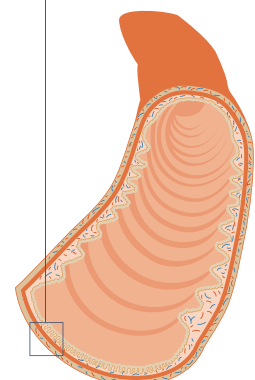
	prebiotic effect
	intestinal health and protection
	displaces pathogens and binds mycotoxins
	immune system support

Biolex® MB40 composition:

Analytical constituents and contents	
Crude protein:	28.0%
Crude fat:	7.5%
Crude fibre:	0.5%
Crude ash:	4.0%
Lysine:	2.0%
Methionine:	0.5%
Mannan oligosaccharides (MOS):	20.0-25.0%
Glucans:	25.0%
Physical properties	
Structure:	dust-fine product
Colour:	light brown
Odour:	typical of brewers' yeast
Minimum shelf life:	3 years
Dosage recommendation	
Dosage:	0.5-2kg/to
Dogs < 30kg:	1-2g/day
Cats:	0.3-0.4g/day



- Biolex® MB40
- positive and commensal microbiota
- pathogenic bacteria
- antibodies/immunoglobulins

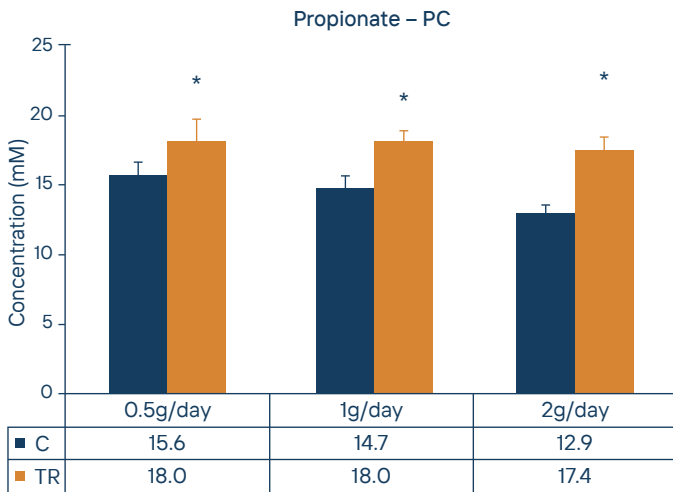




Research

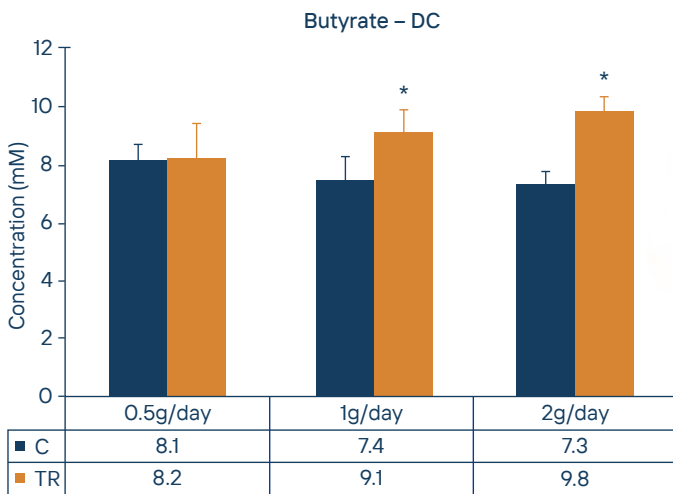
Dried yeast cell walls high in beta-glucan and mannan oligosaccharides positively effect microbial composition and activity in the canine gastrointestinal tract in vitro; Abbeele et al., Journal of Animal Science, 2020, Vol.98, No6, 1-10

Fig. 1: Average propionate over the control (n = 6) and treatment (n = 9) period in the PC (proximal colon)



(* indicates the statistically significant differences relative to the preceding period)

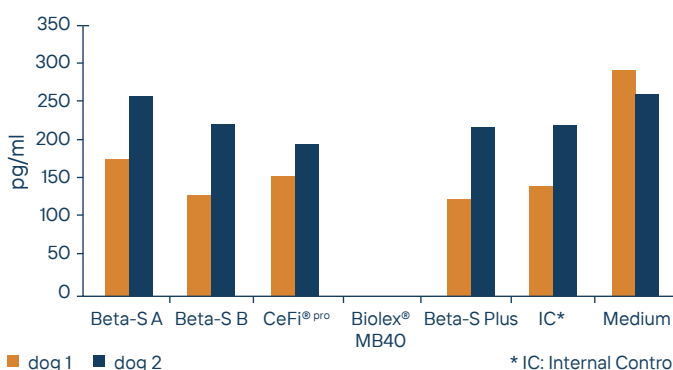
Fig. 2: Average butyrate over the control (n = 6) and treatment (n = 9) period in DC (distal colon)



(* indicates the statistically significant differences relative to the preceding period)

Effect of Leiber yeast products on immune parameters (specific and non-specific) and antiinflammatory/proinflammatory interleukines (in vitro, canine cells). Faculty of Vet. Med., Dept. of Virology, Parasitology and Immunology; Ghent University, Belgium; unpublished

Fig. 3: Reduce IL-17A secretion after stimulation with test material at 200µg/ml vs. medium







- | fermented slowly and selectively
- | significant increase in SCFA (short chain fatty acids), which are beneficial for intestinal health
- | lactate and acetate are converted by "cross feeding"



Highly purified beta-glucans for strong defences!

Thanks to its high purity, Leiber® Beta-S is suitable for effective and sustainable relief for animals' metabolism and immune system. The positive effect, on specific and non-specific defence mechanisms of the immune system, has been scientifically proven many times. The beta-glucan molecules are released from the cell wall complex in a particularly gentle process developed by Leiber. This preserves the native structure and thus the biological activity of the beta-glucans. This ensures the unique level of efficiency of the immune-activating and immune-modulating effect during intestinal transit.

Leiber® Beta-S for your products:

-  immune stimulation and modulation
-  promotes specific and non-specific immune response
-  positive effects on inflammatory markers
-  active support in critical periods

Analytical constituents and contents

Crude protein:	4.0%
Crude fat:	4.0%
Crude fibre:	0.5%
Crude ash:	3.0%
Lysine:	0.2%
Methionine:	0.1%
Beta-glucans:	80.0%

Physical properties

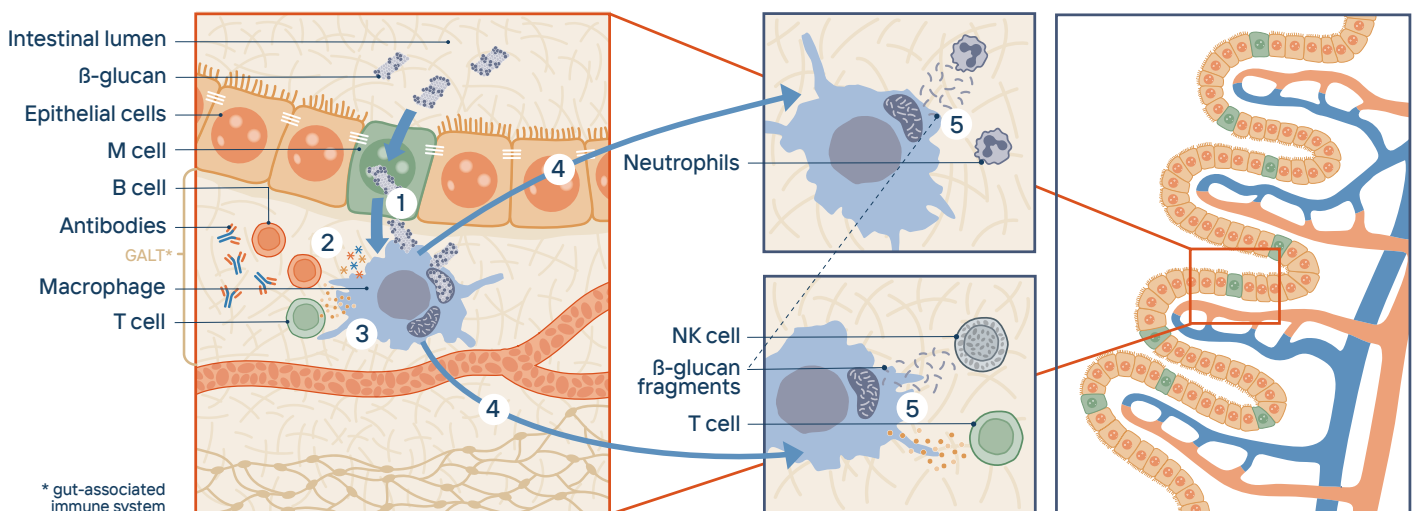
Structure:	dust-fine product*
Colour:	beige
Odour:	neutral
Minimum shelf life:	3 years

Dosage recommendation

Dosage:	0.1-0.5kg/to
Dogs < 30kg:	50-150mg/day
Cats:	20-30mg/day

* also available as Leiber® Beta-S Plus (combination of Leiber® Beta-S and Biolex® MB40)

1. Uptake of beta-glucans from the gut lumen by macrophages
2. Activation of macrophages increases phagocytosis.
3. Release of cytokines and chemokines recruits more immune cells. Macrophages present antigenic structures to T and B cells, to subsequently produce antibodies.
4. Activated macrophages migrate to organs of the immune system.
5. In the bone marrow, spleen and lymph nodes, the beta-glucan fragments and cytokines activate other immune cells.



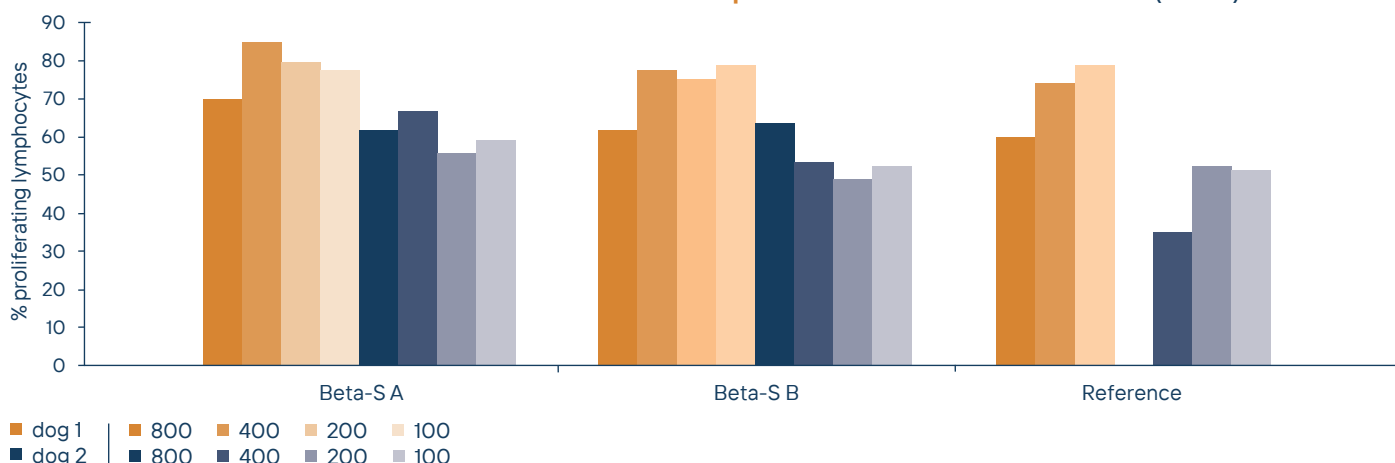
* gut-associated immune system



Research

Effect of Leiber yeast products on immune parameters (specific and non-specific) and antiinflammatory/proinflammatory interleukines (in vitro, canine cells). Faculty of Vet. Med., Dept. of Virology, Parasitology and Immunology; Ghent University, Belgium; unpublished

Fig. 1: Leiber® Beta-S promotes the lymphocyte (T and B cells) proliferation even in higher dosages vs. reference



- increased ROS production (phagocytosis)
- promote specific immune system (Fig. 1)
- inhibit proinflammatory (IL-17A, IL-8, IL-6) interleukines (Fig. 2 and 3)
- fastest improvement of CIBDAI (Canine Inflammatory Bowel Disease Activity Index*; Tab. 1)
- no recurrence within 6 months (Tab. 1)

Fig. 2: Reduce IL-6 secretion after stimulation with 200 µg/ml test material vs. medium

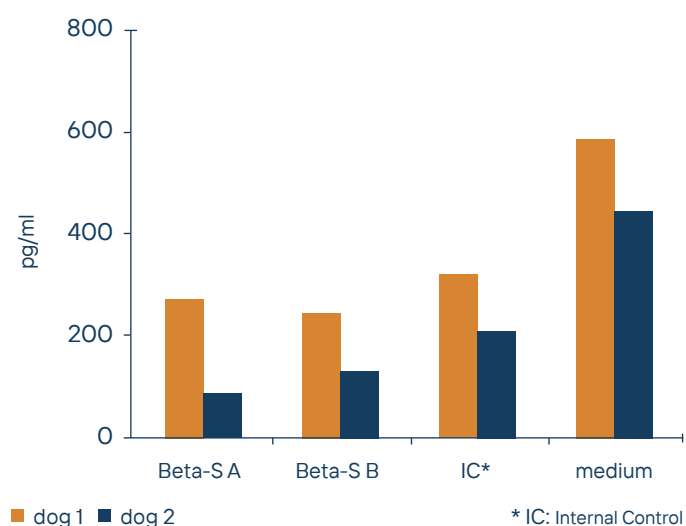
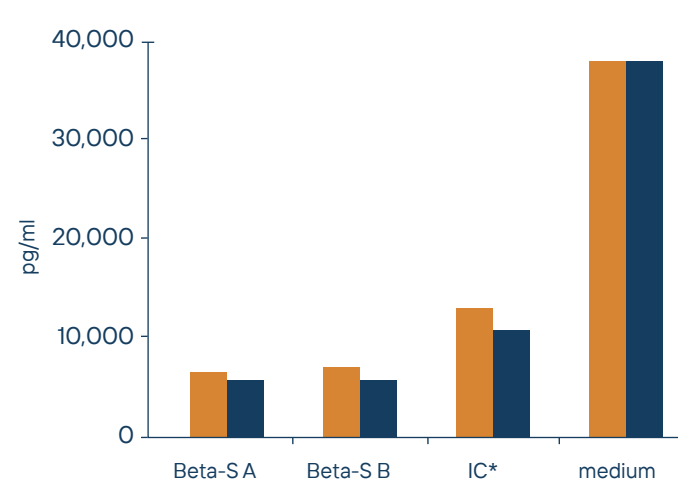


Fig. 3: Reduce IL-8 secretion after stimulation with 200 µg/ml test material vs. medium



The effectiveness of natural and synthetic immunomodulators in the treatment of inflammatory bowel disease (IBD) in dogs; Rychlik et al., Department of Clinical Diagnostics, Faculty of Veterinary Medicine, University of Warmia and Mazury in Olsztyn, Poland; Acta Veterinaria Hungarica 61 (3), pp. 297–308 (2013) DOI: 10.1556/AVet.2013.015.

Group	CIBDAI*		n	Dogs with clinical symptom recurrence (CIBDAI* ≥ 4)	Recurrence percent (%)
	Before immunomodulation (mean ± SD)	After immunomodulation (mean ± SD)			
β-glucan	6.000 ± 1.45	0.914 ± 0.45**	7	0	0
HMB	6.285 ± 2.12	1.286 ± 0.54*	7	1	14
Levamisole	6.143 ± 1.98	2.142 ± 0.89	7	3	43
Control	5.857 ± 1.84	7.142 ± 0.11	7	7	100



Natural. Pure. Delicious.

These are the benefits of Leiber NuTaste® that are achieved without the use of E numbers! Thanks to their high content of proteins, peptides, amino acids, glutamic acids and nucleotides, Leiber NuTaste® products meet many nutritional requirements while enhancing palatability, especially for dogs and cats. Yeast extracts contain many flavor-enhancing nutrients that can change the acceptability, color, or texture of a product.

Leiber NuTaste® product benefits:

	high natural content of free amino acids, peptides, and nucleotides
	different taste profiles
	natural colouring

Leiber NuTaste® profile

Yeast extracts with different taste profiles

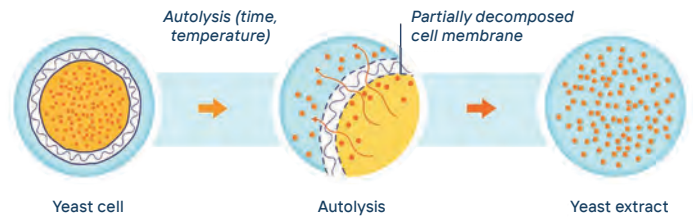
Each yeast extract has its own unique taste profile. This creates a huge variety of taste nuances – alone or as a combination of different yeast extracts.

Leiber NuTaste® profile N: natural yeast extract, debittered

Leiber NuTaste® profile G: natural yeast extract, fully debittered and high in free glutamic acid

Leiber NuTaste® profile N composition:

Analytical constituents and contents	
Crude protein:	64.5%
Crude fat:	0.1%
Crude fibre:	1.0%
Crude ash:	9.4%
Total amino acids:	54.6%
Lysine:	5.2%
Methionine:	0.9%
Glutamic acid:	8.8%
Physical properties	
Structure:	agglomerated powder
Colour:	light beige to light brown
Odour:	typical of brewers' yeast
Minimum shelf life:	3 years
Dosage recommendation	
Depending on product and application: 0.2-15kg/to	



Leiber NuTaste® function

Yeast extracts with various functionalities

Some yeast extracts have extra functions like colouring effects, taste boosting, or are suitable in plant- or insect-based applications.

Leiber NuTaste® function XSR: natural yeast extract, fully debittered and high in nucleotides

Leiber NuTaste® function DC: yeast extract for natural colouring





Research

Preference test with 1% Leiber NuTaste® profile N in dry kibble (outside coating), household panel, 30 dogs and 30 cats, two-bowl test

Fig. 1: Significant higher preference for Leiber NuTaste® profile N in cats

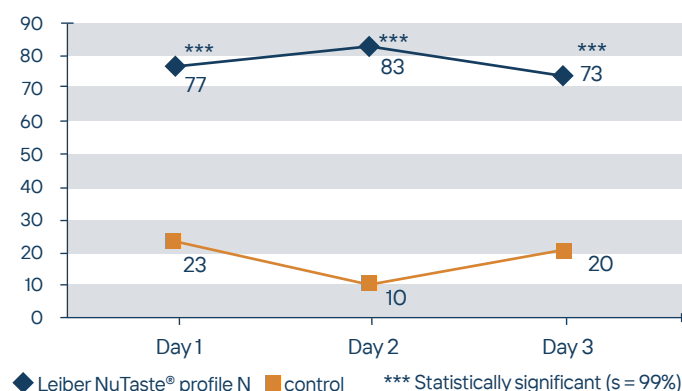
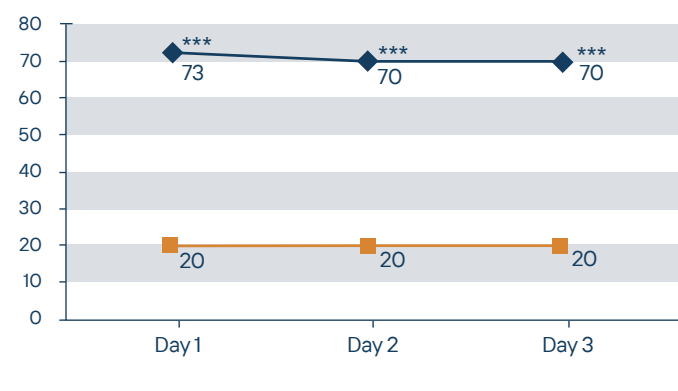


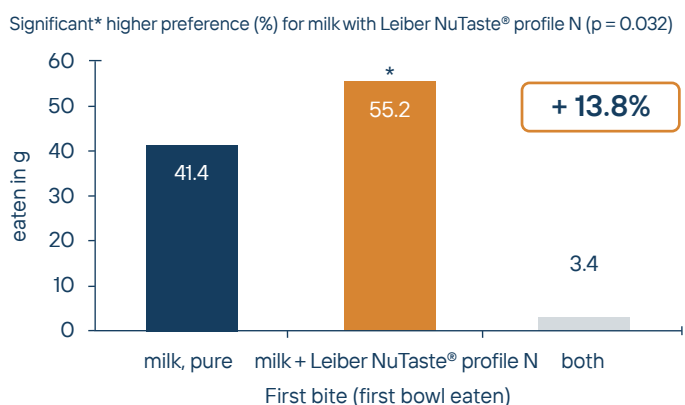
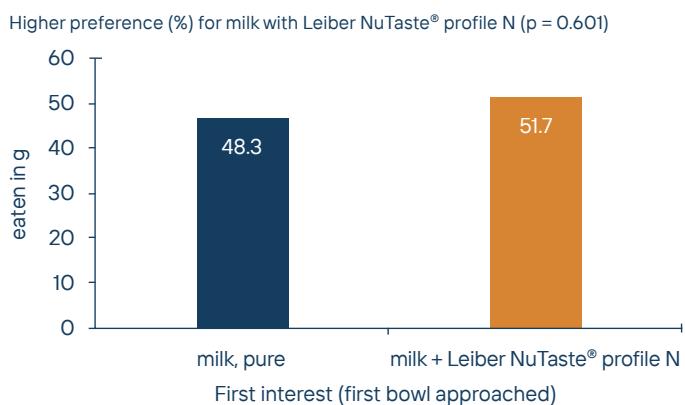
Fig. 2: Significant higher preference for Leiber NuTaste® profile N in dogs



- | no E numbers (clean labelling)
- | feed material in FOOD quality
- | peptides, amino acids, and nucleotides
- | rich in glutamic acid
- | meaty taste profiles
- | PAL enhancer
- | umami notes
- | plant-based and insect-based application

Preference test with 0.5% Leiber NuTaste® profile N in cat milk, household panel, 29 cats

Fig 3: Preference: first bowl approached – first bowl eaten (first choice) (n = 29)



Get in touch

Leiber Brewers' Yeast products have always stood for *healthy quality*. The highest standards apply to brewers' yeast, both during production in breweries and during refinement by Leiber itself. Long before sustainability became a buzzword, Leiber already lived by the maxim "There's no such thing as waste; there are only valuable secondary streams".

Sustainable management is not a mere aspiration at Leiber, it is put into practice every day – which the **"ZNU Sustainable Management"** certificate verifies.

The ZNU Quality Seal for Sustainable Management is awarded by the Center for Sustainable Leadership (ZNU) at Witten/Herdecke University. Leiber selected this standard because it makes sustainability verifiable and quantifiable and thus leads to continuous improvement. In addition, annual audits check the continuous improvement process.

We are building our future on this solid foundation – with an inquiring mind, passion for innovation and the latest product solutions for our customers!

Quality from raw material to product solution

Do you consider the quality of your products paramount? Then we have something in common. At Leiber, we plan quality into all processes and products from the very start. On top of that, our products and processes are audited and certified both internally and externally. As a result we hold the following certificates.

BioSuisse | Biozertifikat | FSSC 22000 Feed | FSSC 22000 – Leiber Sp. z o.o. | ISO 50001 | QS – Factory Bramsche | QS – Factory Engter | QS – Leiber Sp. z o.o. | VLOG FEED – Factory Bramsche | VLOG FEED – Factory Engter | VLOG FEED – Leiber Sp. z o.o. | VLOG FOOD – Factory Engter | VLOG FOOD – Leiber Sp. z o.o. | ZNU Certificate – ZNU Driving Sustainable Change



Certificate download

For more information please contact your Leiber Pet Food Team:



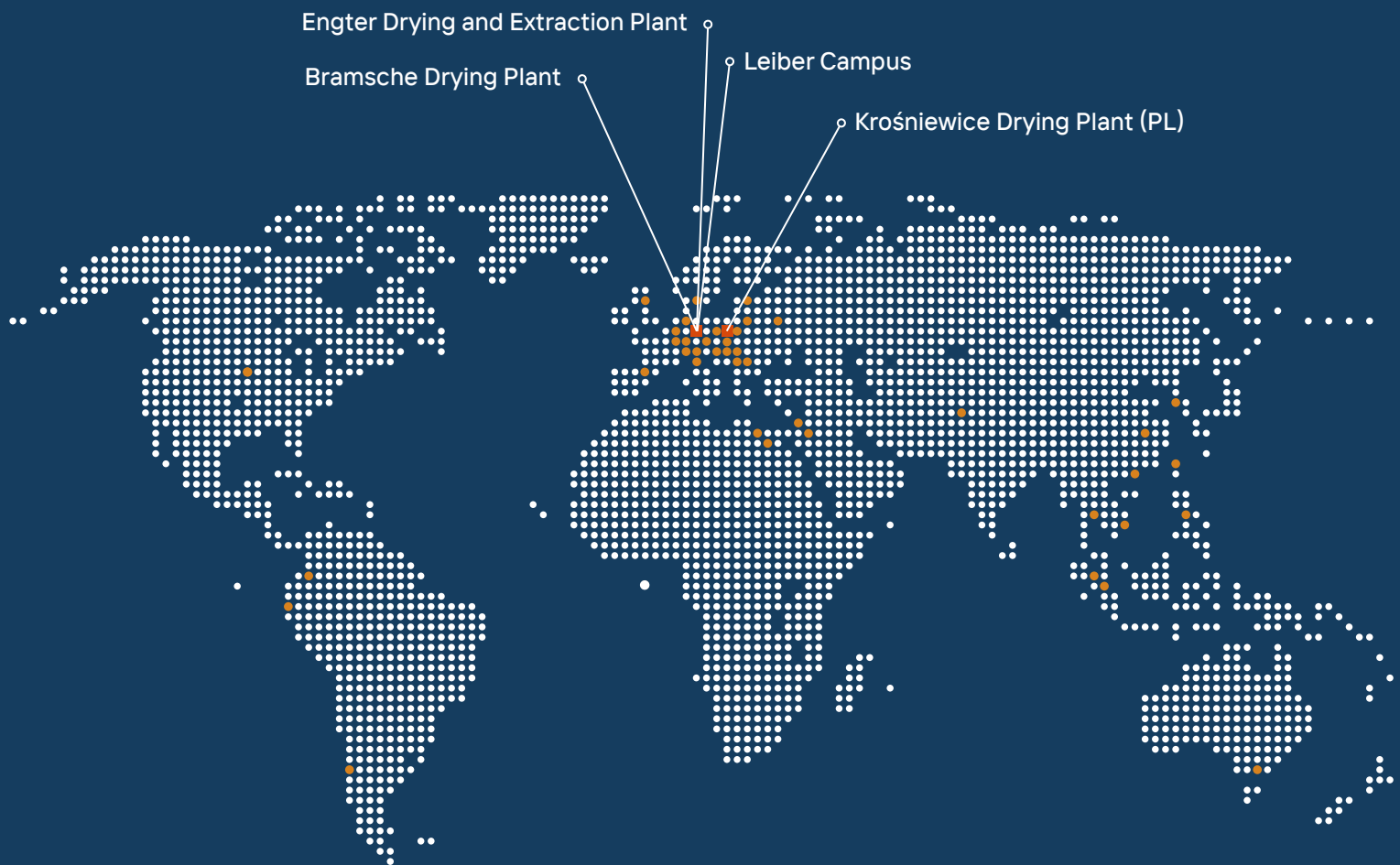
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Working for you worldwide!



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Sustainable. Innovative. Effective.



Errors and changes excepted. 02/2023



We have been upcycling at world-market level since 1954 and keeping the environment and climate in mind.



Leiber
Excellence in Yeast

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