MAXASCO

MARINE ALL-ROUNDER

MAXASCO is a hydrolyzed seaweed meal produced of brown algae *(Ascophyllum nodosum)* by a unique production process. After processing, MAXASCO has a greater effect on gelling and viscosity. It can be fed to improve performance and gut integrity, but also to bind toxins of different origins, such as mycotoxins, thereby supporting the animal.

Algae are a broad variety of photosynthetically active organisms generating biomass of CO_2, water, and minerals. Algae are rich in vitamins, micro- and macrominerals. In addition, the brown algae *(Ascophyllum nodosum)* contain functional polysaccharides (alginate, laminarin, fucoidan, ascophyllan). Together with marine tannins these functional components have a synergistic prebiotic effect supporting immune functions.

CHARACTERISTICS

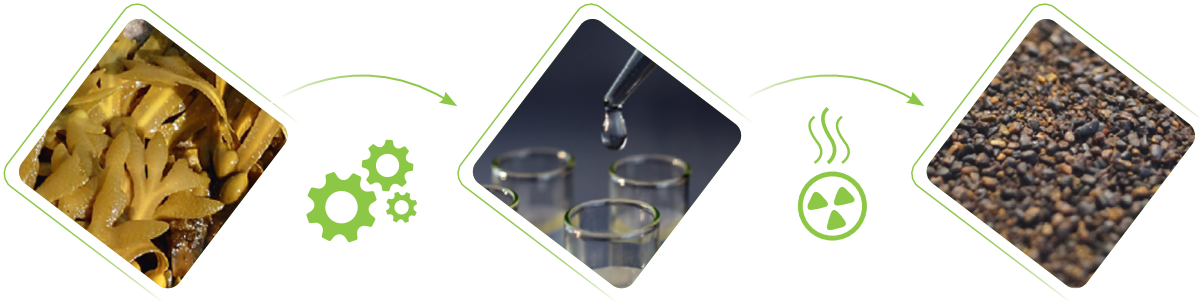
- Prebiotic effect
- Reduced pathogen adhesion
- Binding of toxins and ammonia

APPLICATION BENEFITS

- Supply of alginate and polyphenols
- Stronger gelling properties
- Increased nutrient absorption

MAXASCO is produced by a novel processing technology unlocking the full spectrum of activities of marine plant nutrients of *Ascophyllum nodosum*. The raw brown algae are sourced e.g., in the Celtic Sea. After processing, MAXASCO has improved swelling properties as well as good mixing properties to be included in feed or premixes. In addition, the processing of the algae affects the properties of soluble fiber, increases the homogeneity and viscosity of digesta, and thus improves nutrient digestibility by increasing enzymatic digestion.

F1: Different steps of MAXASCO production.



Brown Algae – *Ascophyllum nodosum*

Innovative Processing Technology

MAXASCO – Processed Seawaed Meal

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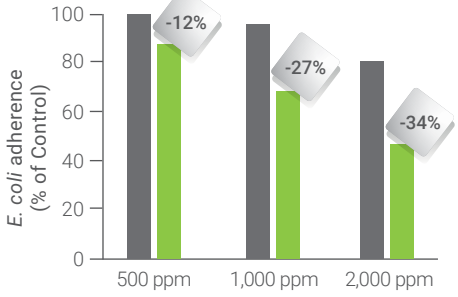
SUPPORTING GUT INTEGRITY

Model: Exp. 1: Mucus of porcine small intestine; radioactively labeled *Escherichia (E.) coli* F4+
Exp. 2: Radioactively labeled mycotoxins; 2 h incubation

Treatments: Exp. 1: (1) Negative Control; (2) MAXASCO; (3) Manno-oligosaccharides (MOS)
Exp. 2: (1) Bentonite; (2) MAXASCO

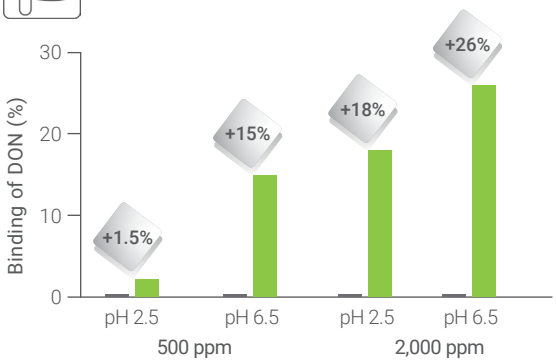
Methods: Determination of radioactivity

F2: *Escherichia (E.) coli* F4+ adhesion to porcine mucus (gut surface) *in vitro*.



Source: Alimetrics, 2020. MOS MAXASCO

F3: Binding of mycotoxin deoxynivalenol (DON) *in vitro*.



Source: Alimetrics, 2020. MOS MAXASCO

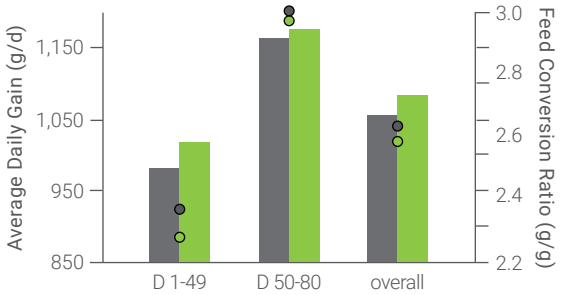
The *E. coli* adhesion was numerically lower for all MAXASCO concentrations compared to Control and Manno-oligosaccharides (MOS). MAXASCO **reduced the adhesion of *E. coli* F4+ to porcine mucus *in vitro*, thus might support gut integrity *in vivo* in pigs.** The binding of the mycotoxin deoxynivalenol (DON) was numerically greater for MAXASCO (500, 2,000 ppm) compared to bentonite at different pH values (pH 2.5 and 6.5). MAXASCO **has a great binding capacity of mycotoxins, especially binding DON.**

IMPROVED PERFORMANCE OF PIGS AND BROILER

Animals: Exp. 1: grower-finisher (n=72; DanBred × Piétrain; initial BW 28.5 kg)
Exp. 2: broiler (n=200; Ross 308; initial BW 40.7 g)

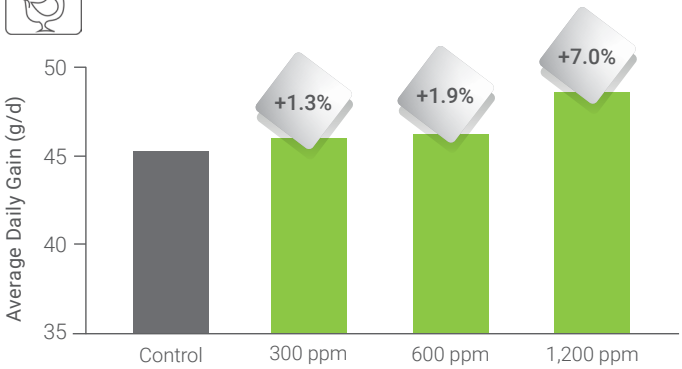
Treatments: Exp. 1: (1) basal diet; (2) MAXASCO (500 ppm))
Exp. 2: (1) basal diet; (2) MAXASCO (300 ppm); (3) MAXASCO (600 ppm); (4) MAXASCO (1,200 ppm)

F4: Average daily gain and feed conversion ratio of pigs (exp. 1).



Source: University Kiel (CAU), 2018. Control MAXASCO

F5: Average daily gain of broiler (exp. 2).



Source: ISF, 2018.

The average daily gain of pigs was numerically greater and the feed conversion ratio was numerically lower for all feeding phases and overall for MAXASCO compared to Control. The average daily gain of broiler was numerically greater for all MAXASCO concentrations (300, 600, 1,200 ppm) compared to Control. MAXASCO **improves the performance in broiler and growing pigs.**

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