

Mankind is increasingly sourcing its food and protein supply from aquaculture as can be seen by two facts: in 2012 production from aquaculture has overtaken beef production, and since 2014 it is exceeding the supply from capture fisheries. With the expected increase of the world population to  $\geq 9$  billion by 2050 combined with a stagnant/decreasing supply from capture fisheries, aquaculture production will face a tremendous challenge in closing the supply gap of food fish. Published statistics predict a need for doubling of aquaculture production by 2030.

Intensifying production however implicates a plethora of challenges, where biosecurity and health, sustainability, alternative feed ingredients and efficient productivity are crucial. For example, various diseases had major impact on production in recent years, and new diseases are emerging. Also, increasingly plant-based diets (fish meal and oil replacement) lead to impairments in gut health, growth performance and feed conversion.

Leiber GmbH's strategy for aquaculture is geared to address these performance, health- and nutrition-related challenges of the future. In doing so, the sustainability concept still is the core of the company philosophy, as it always has been from the very beginning in 1954. Sourced as a by-product from the brewing industry, Leiber GmbH is manufacturing a whole range of products from brewer's yeast for animal nutrition, food industry and biotechnology. The product portfolio ranges from unextracted yeast over yeast bound to functional carriers, to autolyzed yeast, yeast cell walls/MOS, highly purified  $\beta$ -glucans and a range of yeast extracts with different taste profiles and functionalities.

Leiber GmbH is offering the following solutions to combat the challenges in aquaculture:

- ➔ Leiber® Beta-S: purified  $\beta$ -glucans to boost immune competence
- ➔ Biolex® MB40: prebiotic yeast cell walls/MOS to improve gut health
- ➔ Leiber® Beta-S Plus: synergistic blend of purified  $\beta$ -glucans and yeast cell walls
- ➔ CeFi® Pro: autolyzed yeast, rich in highly bioavailable nucleotides and nutrients

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