Norwegian spruce shall provide sustainable fodder

The research center Foods of Norway researches sustainable animal feed from Norwegian fir forests. Researchers associated with Norway's University of Environmental and Biosciences (NMBU) in Ås are working to increase food production while reducing the climate footprint. The solution is yeast based on Norwegian fir trees that can outcompete imported soy.

Illustrasjonsbilde av frimerke med gran som motiv

In order to get enough feed for the farming industry and livestock, Norway is largely dependent on large quantities of imported feed from abroad. Much of this is soy, which is also used for human food production. Soya production has serious environmental consequences, such as deforestation, pollution, loss of irreplaceable species, and greenhouse gas emissions. In the farming industry, feed accounts for 70 per cent of all greenhouse gas emissions.

But soon Norwegian spruce may be an alternative. The short-traveled food will create good environmental benefits, while also making the fish healthier. The feed produced from spruce contains as much nutrition as soya.

How to turn spruce into fodder

Converting spruce into fodder is a long and complicated process. First, the spruce must be cut into chips. Heat and chemical additions are then used to extract lignin, cellulose and hemicellulose. The cellulose is then broken down into sugar.

For this, the researchers at Foods of Norway use enzymes that they have discovered and isolated. Yeast is then added, and this turns the sugar compounds into protein. The yeast is harvested and dried before the protein-rich mass is added with minerals and other substances needed in animal and fish feed.

The advantages of the feed made from spruce

The feed made from spruce contains 65 percent protein and is rich in antioxidants. The research shows that it is easily digestible, so that the animals become healthier and grow faster. They also thrive better than when fed conventional feed.

Microbars and yeast are the future in food production. They have a high nutritional value, they grow very quickly compared to plants on land, and they can turn all kinds of raw materials into high-quality protein. They are sustainable, do not seize agricultural land and do not compete with human food.

A center for cutting-edge innovation

Foods of Norway is one of the Norwegian Research Council's centers for forward-thinking innovation (SFI). In these centres, researchers develop expertise that is important for innovation and value creation.

Long-term research in close collaboration between R&D-active companies and prominent research environments will strengthen technology transfer, internationalization and research training. Scientific quality in the research must be at a high international level. Centers are established for a maximum period of eight years.

Sources: foodsofnorway.net, forskningsradet.no, nrk.no, forskning.no

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