

News

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Hemp may help reduce piglet mortality and diarrhoea

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RESEARCH: Bioactive ingredients from industrial hemp will be used in new research to optimise the diets for sows and piglets, thus reducing post-weaning diarrhoea, the use of antibiotics and piglet mortality.



The pig industry in Denmark is challenged by high piglet mortality which is very costly for the industry. But now scientists from Aarhus University will be testing a new strategy in an effort to reduce mortality and to enhance animal welfare.

It is the industrial variety of hemp that scientists and a number of industrial partners are putting their faith into with the aid of a 6.7 million DKK (€8.9 mln) grant

from the Green Development and Demonstration Programme under the Ministry of Food, Agriculture and Fisheries.

Hemp contains protein, fibre and fatty acids of a very high nutritional value plus some potentially immuno-modulating substances that present a hitherto untapped bioactive resource for pigs.

- In the project we will focus on the potential in using protein and oil from industrial hemp as a special feed and feed supplement for piglets and sows. The cold-pressed therapeutic hemp seed oil and protein may help solve the production challenges of post-weaning scours and early mortality due to their unique ingredients, explains project leader and section manager at the Department of Animal Science, Charlotte Lauridsen.

The rationale for the project is the positive experience from a pig farm where a hemp oil product was added to the diet of piglets and weaners. This led to a marked improvement in piglet survival and it is this improvement that the project participants hope to copy.

Before the effect of the hemp products can be tested in the project, processes need to be developed to remove THC from hemp (THC = tetrahydrocannabinol – a psychoactive substance that is found only in low concentrations in industrial hemp and is therefore useless for recreational purposes) so that the hemp can be used for animal feed. The project will look at the effect of hemp on piglet survival. This is done by supplementing hemp to the lactation diet for sows, which via the colostrum will provide energy and vitamin E to piglets and raise their concentration of immunoglobulin and thus their resistance to infections. Particularly energy depots and vitamin E levels are low in newborn pigs.

The project will also explore the effect of substances in hemp on post-weaning

diarrhoea and the growth potential of piglets.

- Fatty acid composition, protein allocation and the content and composition of fibres are important for intestinal health and immune response in pigs during the critical post-weaning period. The hemp plant contains substances with therapeutic properties that are of interest for the control of inflammation of the intestines due to infection, says Charlotte Lauridsen.

Project participants estimate that the commercial utilisation of hemp products can reduce piglet mortality by 1.5 pigs per litter and that the incidence of post-weaning diarrhoea can likewise be reduced and thus the consumption of antibiotics.

- *E. coli* is the leading cause of diarrhoea in the first few weeks post weaning, and we expect that hemp products can reduce mortality. At the same time, it is estimated that the majority of the antibiotics consumed is used to treat gastrointestinal disorders in pigs, and these disorders are therefore the major causes of the use of antibiotics in pig production, says Charlotte Lauridsen and continues:

- Supplementation with hemp products will hopefully result in fewer outbreaks of post-weaning diarrhoea and will improve the health of the gastrointestinal tract in piglets, which in turn will lead to a reduced need for antibiotic treatment.

In addition to the expected effects on mortality, post-weaning diarrhoea and animal welfare, the project participants believe the cultivation of hemp also offers environmental benefits since its cultivation does not require pesticides.

The project started on 1 January 2014 and will run until 31 July 2017.

Aarhus University

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