EFFECT OF MICRO ALGAE IN DOGS ON THE IMMUNE SYSTEM MEASURED IN MANURE

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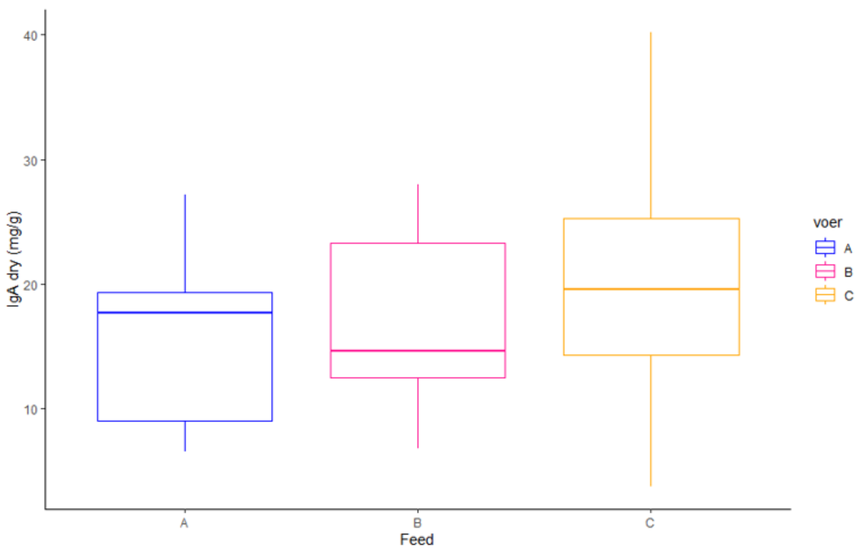
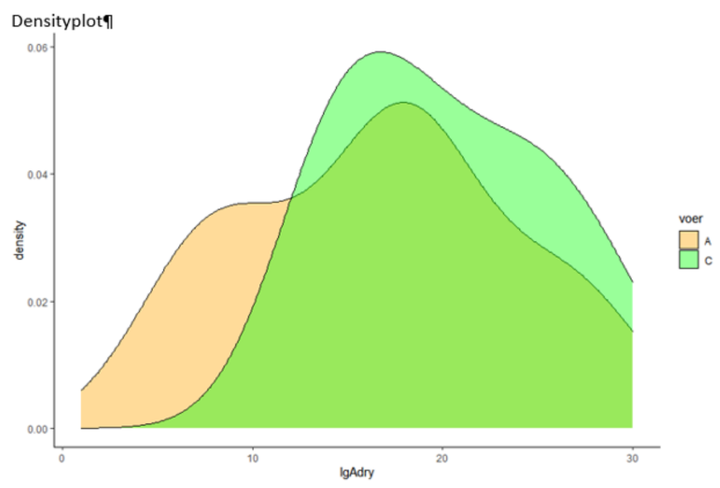
Health is important for dog owners. Producing a feed that improves the immune system of the dog is desired. By measuring the faecal IgA the effect on the immune system in dogs can be judged. One way to positively influence the dogs health are micro algae, this new upcoming ingredient is said to improve health, and has already proven positive results in many species. In the INTERREG NWE IDEA project many organisations are working together to prove that micro algae could be the future in many sectors including feed. VITO provided the processed micro algae (grown by Thomas More) and performed analyses in this project, TEAGASC analysed algae and feeds and Feed Design Lab produced the dog feed and coordinated the dog trial. The goal of this study was to measure the effect of the micro algae *Chloromonas* and *Porphyridium* in dog feed on immunity, measured in faecal IgA.

The three extruded feeds that were used in this study were produced at Feed Design Lab using a basal meal from Vobra Special Petfoods, with the micro algae added during mixing. The study was performed on thirteen midsized dogs of multiple breeds, ages and genders that live together at the same research facility in the Netherlands. The general feed intake of the dogs was calculated for each period, and the manure was collected and weighed during the last two days of each period. The manure was frozen and at the end of the trial send to Gent University to be analysed for faecal IgA using a Elisa method, used on dog faeces.





The IgA was the highest in the group with the *Chloromonas* feed, showing a trend (P=0,07) compared to the control feed. *Porphyridium* did not show a significant difference when compared to the control feed. Other variables that had a significant effect on the IgA were breed and gender.

This means that adding *Chloromonas* in feed has a positive effect on the immune system of a dog. *Porphyridium* did not show an effect, with 0.5% added in feed, but it would be recommended to perform a dose response study. Using small amounts of micro algae in feed can also be useful for other animals as livestock because health is important in livestock farming as well.

IDEA - Implementation and development of economic viable algae-based value chains (NWE639)

Duration: 9/2017 – 10/2021, capitalisation till 12/2023

Website: www.nweurope.eu/IDEA

Lead partner: VITO, Belgium

Full IDEA partners: JÜLICH Forschungszentrum, Innovatiesteunpunt, CentraleSupélec, FEED DESIGN LAB HUNGRY FOR KNOWLEDGE, THOMAS MORE, teagasc, UNIVERSITY OF TWENTE.