NeoGiANT project: A data base-driven approach to understanding natural formulations on animals

Food additives produced from natural materials and used in animal husbandry are usually very complex, do not contain only one ingredient. Thus, their beneficial effect is not only manifested in a direct way, but in several, mutually dependent and even indirect ways. Understanding this sometimes very complicated system is only possible with the help of sources containing as much data and information as possible. That is why the importance of those databases that contain not only the animal's growth parameters, but also the system elements directly and indirectly related to them is increasing. Before starting the work, the scientific literature is systematically reviewed to identify potential health and welfare indicators for target animals.

We also follow this principle during NeoGiANT project, gathering the data generated by the various WPs into a few databases and summarize them based on given criteria. Thus, for example, one of our databases, would contain the bacterial profiles at the phylum and genus level for the samples examined in the given experiment, and the other part of the database for the taxa to be specifically examined according to the research plan (E.coli, Salmonella, Campylobacter, Enterobacteriaceae, Lactobacillaceae, Clostridiaceae, Enterococcaceae, total aerobic and anaerobic CFU) whether there was a significant change in their (relative or absolute) abundance in the given treatment groups compared to the control. Where possible this information can be also connected with the readily available parameters from in-vitro models and phenological measurements and on the health page.

These observations could help to react to the emerging needs in the next steps, thus inducing necessary changes (carrier material, concentrations, etc.). At the highest level of understanding, confirmation also takes place, namely by setting up and analysing the challenge experiments based on the proposed mechanism. A database-driven approach to understanding natural formulations on animals can thus form a rounded whole.