



(AGPs), which limited the growth of potential pathogenic bacteria in the GIT and thus reduced the incidence or severity of intestinal infections.

Furthermore, they controlled local inflammatory responses caused by these intestinal infections and consequently improved intestinal integrity. Due to the global pressure to phase out AGPs and therapeutic dosing of zinc oxide, pigs are becoming more sensitive to diet imbalances. Consequently, diet formulations need to be more precisely aligned to the needs of the animal to maintain intestinal health. A well-balanced fibre supply, the supplementation of probiotics, the use of highly digestible protein sources and avoiding an over-supply of protein are widespread and basic tools to keep gut functionality at the highest level and prevent the occurrence of diarrhoea. Nevertheless, the inclusion of feed supplements specially designed to strengthen the gut barrier can provide added value.

### Wood makes the difference

One part of the solution is sustainably growing all around us: wood. The development of feed supplements derived from fresh wood started decades ago, with the formulation of special lignocelluloses focusing on fibre supply. In recent years, the research focus has moved to the bioactive molecules to be found within different wood species.

With Agromed Protect, the Austrian company Agromed has succeeded in developing a wood-derived feed supplement to counteract the negative consequences of diarrhoea by strengthening the gut barrier and thus lowering the risk of pathogens invading the blood system.

As presented at the 15<sup>th</sup> International Symposium of Digestive Physiology in Pigs (DPP 2022), the phytonutrient

composed of wood phenolic acids and wood lignans caused a significant improvement of the gut integrity: fluorescein isothiocyanate-(FITC)-dextran is a marker with a high molecular weight, so that it is not permeable to an intact intestinal epithelium. Thus, after oral administration, increased dextran concentration in the blood reflects a higher gut permeability. Figure 1 demonstrates an expected increase of dextran in the serum of piglets artificially challenged with *Brachyspira hyodysenteriae* compared to healthy ones. In piglets that were supplemented with the wood-derived feed supplement, the gut permeability was significantly reduced, which gives proof of a higher hurdle for pathogens to pass the gut wall.

Moreover, the phytonutrient supports the animals against diarrhoea due to a remarkable antioxidative capacity, and even the lignans and phenolic acids used in the product reveal antibacterial effects, which further contributes to lowered pathogenic pressure.

### The perfect reservoir for pig diseases

Highly intensified pork production systems are the perfect reservoir for infectious diseases. Key in counteracting this health threat is a combination of preventive measures: reducing pathogenic pressure by implementing the highest hygiene standards as well as supporting resilience against pathogens through taking the utmost care of animals' gut health. Agromed Protect is an effective wood-derived feed supplement based on actives from selected tree species, tailored to support pigs prophylactically to cope with different kinds of diarrhoea. Its properties reduce pathogenic stress while strengthening the gut barrier, thus improving the first line of defence against pathogens.

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