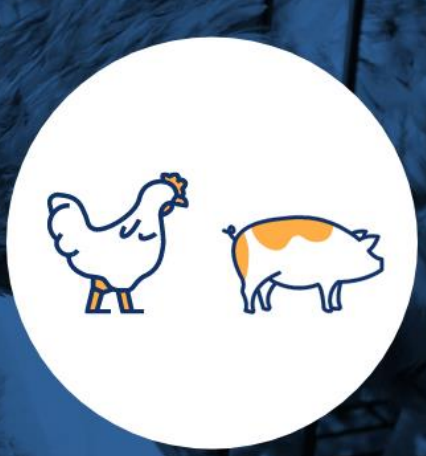
Low protein feed for piglets in post-weaning (gut health)



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- **Type of challenge**: Animal health.
- **Challenges**: Antimicrobial resistance.
- **Action**: Helping animals to cope with deviation of microbiota composition (dysbiosis) during the post weaning period leading to faecal inconsistency, reducing the needs for antimicrobial treatment.
- **Animal category**: Piglets post-weaning; similar technique applicable to poultry.
- **Technique**: Reducing the amount of indigestible-protein by lowering the amount of protein in the diet to 16.5% during the piglet's growth from 6 to 15 kg, combined with the use of highly digestible protein sources (e.g. soy, potato, blood plasma, insect proteins).
- **Mode of action**: In post weaning, crude proteins from plants cannot readily be digested yet, and serves as a substrate for proteolytic bacteria; reducing the amount of proteins limits the development of these pathogenic bacteria and therefore infections caused by the damage to the intestinal wall; in addition, reducing the amount of non-digested proteins in the hindgut limits the generation of ammonia and amine concentration in the gut, which negatively affect the development of the intestinal mucosa and villus height.
- **Potential efficacy:** Reduction of the number of diarrhea treatments by 25% compared to standard feed at 18.5%.
- **Nature of evidence of efficacy**: Peer-reviewed scientific publications (meta-analysis).
- **Factors impacting on efficacy**: Digestibility of the protein, combined with content of dietary fiber (wheat bran, barley husks, etc.).
- **Mode of use**: Complete feed formulation.
- **Requirements/limitations**: Conditions for communication on health benefits (claims) defined under Article 13 of Regulation (EC) No 767/2009 and FEFAC/Copa-Cogeca Code of Good Labelling Practices for compound feed for food producing animals.
- **Economic consequences**: The reduction of the protein levels in feed may result in a decrease in daily gain.
- **Other considerations**: Lowering the amount of protein in feed reduces nitrogen emissions and land use for the production of vegetable proteins.
- **References**:

  - Jha *et al* (2016). *Dietary fibre and protein fermentation in the intestine of swine and their interactive effects on gut health and on the environment: a review*. Animal Feed Science and Technology, 212, 18–26. https://doi.org/10.1016/j.anifeedsci.2015.12.002

- EMA and EFSA (2016). *Joint Scientific Opinion on measures to reduce the need to use antimicrobial agents in animal husbandry in the European Union, and the resulting impacts on food safety* (RONAFA)
- Lynegaard *et al.* (2021). *Low protein diets without medicinal zinc oxide for weaned pigs reduced diarrhea treatments and average daily gain*. Animal, Volume 15, Issue 1, January 2021, 100075 https://doi.org/10.1016/j.animal.2020.100075
- FAO (2021). Animal nutrition strategies and options to reduce the use of antimicrobials in animal production.
- EIP-AGRI Focus Group (2014). Reducing antibiotic use in pig farming

- **Other techniques**: Microbiota management (organic acids, Medium Chain Fatty Acids, copper & zinc compounds, bacteriophages); supporting mucosal barrier function (Short Chain Fatty Acids); Immune modulation (plant extracts, essential oils, yeast products, probiotics, prebiotics, synbiotics, chitosan); amylases, prebiotics, clay minerals, etc.

Charter Ambition: 4