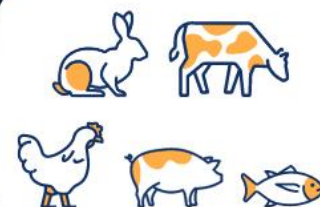


# Insoluble fibre (support gut health)



Last update: 2 June 2023

- **Type of challenge:** Animal health
- **Challenge:** Antimicrobial Resistance.
- **Action:** Helps animals to cope with pathogens by supporting a healthy gut, reducing the need for antimicrobial treatment.
- **Animal category:** All animals (especially monogastrics).
- **Technique:** Inclusion of high-fibre feed ingredients such as oat hulls, beet pulp, chicory, soy hulls or dried distiller grains in the diet and coarse grinding.
- **Mode of action:** The bulking properties of insoluble fibres promote peristalsis and motility in the gastro intestinal tract and stimulate gastric, pancreaticobiliary and mucosal secretions.
- **Potential efficacy:** Indirect effect via the reduction of the need for antimicrobial treatment.
- **Nature of evidence of efficacy:** Peer reviewed scientific publications (meta-analysis).
- **Factors impacting on efficacy:** Supporting gut health is a multi-factorial challenge.
- **Mode of use:** Formulation of the standard complete feed.
- **Requirements/limitations:** The coarser the fibre, the higher the bulking properties and the best effects on gut health. No regulatory restriction.
- **Economic consequences:** Coarse grinding does not have a specific impact on performance.
- **Other considerations:** Certain types of fibres may increase the expression of certain pathogens (e.g. *Brachyspira*, which may be responsible for dysentery in pigs or spirochetosis in avian species).
- **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).
  - Smits, C.H.M., Li, D., Patience, J.F. and den Hartog, L.A. (2021). *Animal nutrition strategies and options to reduce the use of antimicrobials in animal production*. *FAO Animal Production and Health Paper No. 184*. Rome, FAO. <https://doi.org/10.4060/cb5524en>
  - EIP-AGRI Focus Group (2014). [Reducing antibiotic use in pig farming](#)
- **Other techniques:** Microbiota management (organic acids, Medium Chain Fatty Acids, copper 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.