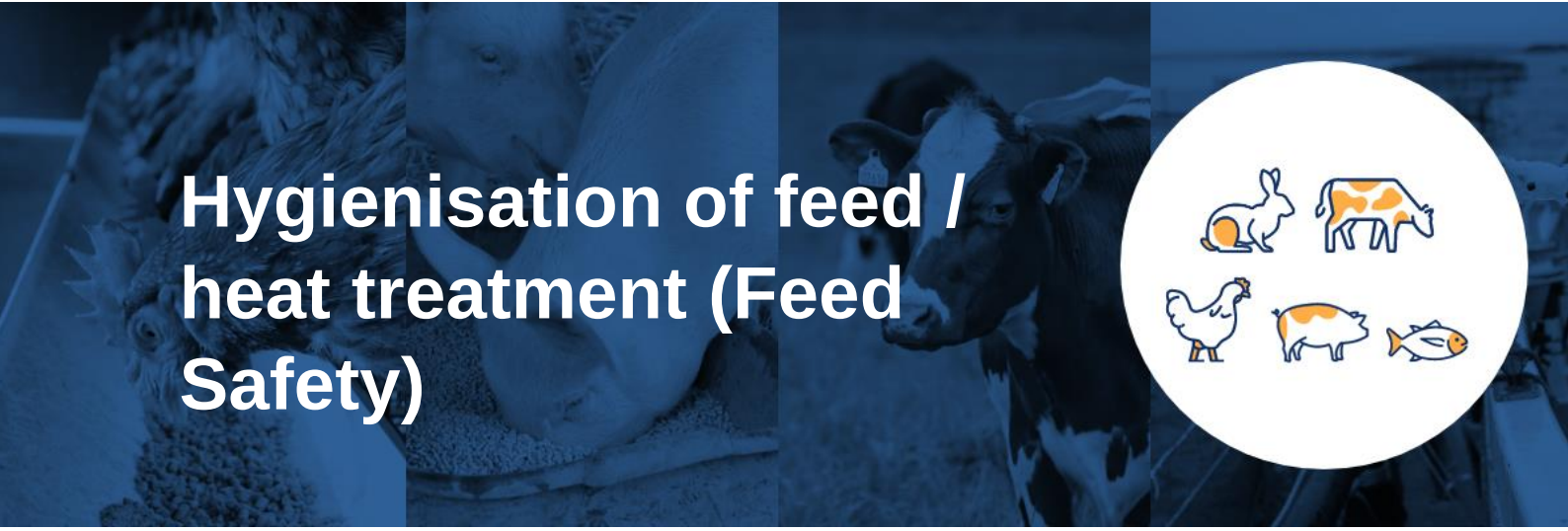

Hygienisation of feed / heat treatment (Feed Safety)

Last update: 2 June 2023

- **Type of challenge**: Animal health.
- **Challenges**: Feed safety; reduction of the need for veterinary treatment; antimicrobial resistance.
- **Action**: Elimination/reduction of pathogens from feed (primary preventative measures).
- **Animal categories**: All farmed species, more specifically poultry.
- **Technique**: Use of specific heat treatment technology such as short-term conditioners, long term conditioners, double conditioning / pelleting, anaerobic pasteurizer, expander / extruder allowing, through an optimized combination temperature / pressure / moisture / conditioning time, to kill *Salmonella*; the temperature is usually comprised between 65 and 85°C; lower temperatures require a longer duration of treatment.
- **Mode of action**: The heat treatment combination kills off *Salmonella*, which is the most critical potential pathogenic bacteria present in feed; the usual time / temperature combinations used in commercial pelleting process do not effectively kill bacteria but may reduce presence.
- **Mode of implementation**: Sometimes combined with acid treatment to prevent subsequent recontamination.
- **Requirements/limitations**: The use of heat treatment as corrective action to eliminate *Salmonella* from a contaminated consignment is subject to specific national rules and in many cases needs verification.
- **Economic consequences**: Heat treating feed requires extra energy but can offset significant financial losses of *Salmonella* contaminated feed.
- **Other considerations**: The heat treatment may affect the nutritional value of the feed which may need to be taken into account in the specification of the particular feed.
- **References**:
  - Tomicic *et al.* (2019). *Salmonella in the feed industry: problems and potential solutions*. Journal of Agronomy, Technology and Engineering Management - Vol. 2(1): 130-137.
  - FT Jones (2011). *A review of practical Salmonella control measures in animal feed*. Journal of Applied Poultry Research. Volume 20, Issue 1, 1 March 2011, Pages 102-113. https://doi.org/10.3382/japr.2010-00281
  - EFSA (2008). *Microbiological risk assessment in feedingstuffs for food-producing animals*. EFSA Journal 720, 5-84. https://doi.org/10.2903/j.efsa.2008.720
- **Other techniques**: Chemical treatment; combination of chemical and heat treatment.

Charter Ambition: 4