

Advice 06-2019 of the Scientific Committee established at the FASFC concerning the management of animal by-products following outbreaks of tuberculosis, brucellosis, botulism or African Swine fever

Background & Terms of reference

In the context of the treatment and valorisation of animal by-products not intended for human consumption (ABP) in the event of outbreaks of tuberculosis, brucellosis, botulism and African swine fever (ASF), the Scientific Committee is requested to evaluate:

- the procedure of the FASFC for the management of notifiable animal diseases and, in particular, the document concerning the treatment of manure in case of tuberculosis;
- the efficacy of biocides on ABP;
- the level of the risk to which both human and animal health are exposed in case of valorisation (including biomethanisation and eventually spreading of digestates) of ABP from outbreaks of brucellosis, tuberculosis or botulism in cattle, pigs, poultry and small ruminants.

Methods

The opinion is based on data from the scientific literature, on the evaluation of the procedure of FASFC 2017/1143/CONT (Management of Notifiable Animal Diseases), as well as on experts opinion of and a qualitative risk assessment.

Conclusions and recommendations

The Scientific Committee validates the procedure of the FASFC dedicated to the management of contaminated manure in case of tuberculosis outbreaks.

Regarding tuberculosis, the control measures proposed in the procedure of the FASFC are adequate except for the duration of manure storage which must be extended to 6 months.

Regarding brucellosis, the zoonotic risk is associated with the *Brucella* species involved in the outbreak (*B. abortus*, *B. melitensis* or *B. suis* biovars 1.3 in 4). The risk for animal health is proportional to the release (mainly affected by clinical abortions). Farm harvested sperm, oocytes and colostrum banks, as well as canids and felids on the farm can be a factor in the perpetuation of the infection. The Scientific Committee recommends the systematic destruction of all sperm, oocyte and colostrum banks in an outbreak farm (including all stocks after tracing back). The duration of manure storage should be extended to 6 months.

Regarding botulism, the risk to human and animal health is mainly associated with the dispersion of spores in the environment, considering that the initial level of environmental contamination is unknown. For human health, the risk is also associated with the toxinotype involved in the outbreak. The recommendations formulated in the Opinion 26-2017 are adequate.

Regarding African swine fever and in the current Belgian epidemiological situation, the Scientific Committee recommends the prohibition of any spreading of contaminated manure, opting for a chemical or thermal treatment (including incineration) instead of storage, to prevent access to manure storage areas for wild boars or any other mechanical vector (*e.g.* insects and pests), to avoid runoff from the place of storage and therefore to prefer hermetic containers.

Regarding the efficacy of biocides, the Scientific Committee recommends the systematic use of quicklime (CaO) or calcium hydroxide (Ca(OH)₂), in sufficient quantities and homogeneously mixed. Alternatively, a heat treatment may be applied in case of outbreak of ASF (> 60°C for 5 minutes minimum) or brucellosis (72°C for 15 seconds or 63°C for 30 minutes). If a chemical (or heat) treatment is not carried out on the manure, the Scientific Committee recommends a storage (compost being preferable) of at least 6 months in case of an outbreak of either tuberculosis or brucellosis.

Risks for human and animal health associated with the valorisation of animal by-products of the type contaminated manure were qualitatively estimated by the Scientific Committee. Valorisation of manure in case of outbreak of tuberculosis or brucellosis is possible if precautionary measures are taken (chemical treatment and/or prolonged storage) as well as strict biosecurity measures during transport. Precautions must also be taken during spreading. In case of an outbreak of botulism (C of D and hybrids C/D and D/C toxinotype), and as formulated in Opinion 26-2017, the Scientific Committee recommends that manure should be preferentially and as much as possible treated by biomethanisation before valorisation, that manure and contaminated digestates are not used on pastures or in direct proximity to cattle pastures. Spreading poultry manure in cattle environment should be avoided.

Concerning the recommended treatment on manure contaminated by *M. bovis*, *Brucella* spp., *Clostridium botulinum* or the ASF virus:

- incineration is the only treatment that eliminates the risk;
- chemical treatment must be carried out according to strict conditions for the quantities of biocide to be used and their application. This method mitigates the risks for further valorisation in cases of contamination by *M. bovis*, *Brucella* spp., *C. botulinum* or ASF virus;
- heat treatment (not considering the incineration or the sterilization) mitigates the risks in case of ASF and *Brucella* but not for *M. bovis* nor for *C. botulinum* spores;
- the long-term storage of liquid manure can often reduce infectious titres (except for bacterial spores) if there is no continuous supply of contaminated manure into the tank. Composting is more efficient because of the temperatures reached but is only possible on solid manure.

For all other ABP, the Scientific Committee recommends their destruction by incineration or their valorisation following a sterilization treatment as this process is largely sufficient to destroy each of the considered pathogens.

The full text is available on this website in dutch and in french.