A method for on-farm containment of animal by-products (ABPs), called a ‘Bioreduction’ system, was assessed. The material for containment is of ovine origin and classified as a Category (Cat.) 1 ABP material. The proposed process consists of an aerobic degradation of the ABP material in a vented, leak-proof vessel. The parameters given by the applicant for heating and aeration rate are respectively: temperature 30-42 °C and aeration under a pressure of 40-55 kPa. The resulting material is finally disposed of according to standard methods for Cat. 1 ABPs. The Bioreduction system can reduce the risks related to pathogens such as non-spore forming bacteria and viruses. However, it is highly improbable that the risks related to more resistant biological hazards can be reduced. The application does not provide clear information about the location of the system and the origin of the material for containment. This has important implications on the risk related to the transport of the material. The design of the plant does not meet the requirements laid down in current legislation for handling of ABPs after their collection. Only a generic HACCP plan was provided and it was considered inadequate. Major deficiencies were noted in relation to the risks associated with interdependent processes, in particular, as regards to the biofilter, the opening of the bioreducer and the ability to sample for Transmissible spongiform encephalopathies surveillance. The biofilter was not considered effective in containing the risk of aerogenic transmission of biological agents and it is accessible to living vectors. Moreover, there is a risk of release of pathogens to the environment when opening the vessel. Therefore, the whole system cannot be considered as a closed system. The proposed Bioreduction method cannot be considered as a safe alternative method for on farm containment of animal by-products.