



Statement on the Use of Untreated Manure Containing Raw Sewage

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Authors' contributions

This work was carried out in collaboration among all authors. The opinion has been assessed and approved by the Panel on Food Additives, Flavourings, Processing Aids, Materials in Contact with Food and Cosmetics of the Norwegian Scientific Committee for Food Safety. All authors read and approved the final manuscript.

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Grey Literature

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ABSTRACT

The Norwegian department of agriculture decided to re-evaluate the Regulation No. 951 of 4 July 2003 on fertilizers and soil improvers of organic origin. The Norwegian Food Safety Authority (NFSA) requested VKM for a statement on the use of manure from farms where grey water and human waste (sewage) is disposed of directly to the farm manure cellar.

Consideration was given to differences in risk according to the types of domestic wastewater, the species of animal from which the manure derived, the extent and type of sanitary facilities, the crops to which the amended manure is applied, and the effects of storage on infection risk.

According to current legislation, sewage sludge cannot be spread on land where vegetables, potatoes, berries or fruit are grown. Furthermore, sewage cannot be spread on meadows or used

for horticultural purposes. In private gardens, parks, playgrounds and similar residential areas, sewage may be used only as a component in a fertiliser, and not applied at the surface. Use of sewage as a fertilizer for the cultivation of grains is permitted. Sewage can also be used when establishing vegetation along roads and embankments.

VKM concludes that manure cellars, to which wastewater, from private household use, and sewage from toilets in the outbuildings are drained, may contain pathogens from humans, in addition to those pathogens originating from animals. The quantity and species of pathogens in this sewage-amended manure would reflect the species and prevalence of pathogens in the population using the facilities. Although the prevalence of intestinal pathogens in the Norwegian human population is relatively low, it should be noted that farms in Norway often provide tourist accommodation, camping facilities, and may house migrant short-term employees during the summer season during which labour requirements are increased. Thus non-Norwegian populations may also use toilet facilities on these farms, and thus when considering the risk of human pathogens, consideration should also be given to people from countries where the prevalence of such pathogens may be higher.

As many viruses and parasites are host-specific, the risk of contamination of produce with human pathogens from such manure is likely to be greater than from manure which has not been amended with untreated sewage.

Pathogen survival is affected by storage, but it should be noted that some pathogens have robust and environmentally resistant transmission stages (e.g. parasite oocysts, cysts and eggs), a proportion of which may survive for prolonged periods in stored manure.

Keywords: VKM; assessment; Norwegian Scientific Committee for Food Safety; biological hazards; manure.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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