RISK ANALYSES OF DISPOSAL OF PIG CARCASSES SMALLER THAN 40 KG IN THE NETHERLANDS

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ABSTRACT

A study based on the literature, an on- farm audit and expert knowledge, was carried out to determine 1) the risks of spread of animal diseases among farms; 2) odour nuisance due to carcasses at the rendering plant; and 3) measurements to reduce these risks.

It was concluded that the possible risks of spread of animal diseases among farms due to the removal of carcasses mainly has to do with the entrance of the place from where the carcasses are collected by the driver of the truck , the contact of the grab of the haulier with the cadaver container or place and driving with the haulier which is not fully closed. The true size of the risk of spread of disease is unknown and is probably different for each pathogen. Strict hygiene measurements by the driver and farmer can reduce the risk of spread of animal diseases due to cadaver removal.

According to the interviewees at the expert assessment session, the odour nuisance at the rendering plant due to carcasses is mainly caused by bacterial conversion of proteins. Cooling of carcasses contribute to the slowing down of the conversions. No unambigious answer could be obtained as to the cooling temperature: not lower than –7 °C because of the processing at the rendering plant and preferably not higher than 5°C. Frequent removal of carcasses from the farms and a quick handling at the rendering plant may also reduce odour nuisance at the rendering plant.

KEYWORDS: Risk analyses, pig, carcasses, disposal, spread of disease, odour nuisance, pig farms, rendering plant

INTRODUCTION: In the Netherlands carcasses smaller than 40 kg should be stored at temperatures not higher than 10°C until the moment of collecting and should be collected by the haulier at least in the week after the death of the animal. These regulations should contribute to better hygiene standards at farms, offering better quality carcasses to the rendering plant and preventing odour nuisance from decayed swine carcasses at the rendering plant. Due to these regulations, small specialised breeding farms and small combined breeding and fattening farms have more farm contacts. This study was carried out to determine and minimise the risks of spread of animal diseases among farms due to the collecting of carcasses and to prevent odour nuisance at the rendering plant.

MATERIALS AND METHODS: By means of the literature and an on-farm audit, risk factors were determined. Subsequently, measurements were presented. Eleven experts, whose specialism was linked to the risk analyses of carcasses, filled in a questionnaire. With this form the risks factors and measurements determined were verified. The experts were also invited to indicate other risk factors and measurements. Moreover, they were asked to fill in the literature gaps.

RESULTS: Risks of spread of animal diseases among farms due to the removal of carcasses have mainly to do with the entrance of the place from where carcasses are collected by the driver of the truck , the contact of the grab of the haulier with the cadaver container or place and driving with a haulier, which is not fully closed. More frequent contact with the haulier and with the farms with which the haulier had had contact before contact with the farm, contribute to an increasing chance of infection. The true size of this chance is unknown and is possibly different for each pathogen. The risk of spread of animal diseases due to cadaver removal can be reduced by taking hygiene measurements, for example, 1) thorough and consequent cleaning of the cadaver container and materials used before taking

them to the farm; 2) applying the clean- and dirty road principle; 3) cleaning and disinfecting the grab and tyres of the haulier after each stop; 4) covering the haulier; 5) cleaning the footwear of the driver of the haulier before entering the cabin; and 6) wearing disposable gloves by the driver.
By means of the expert assessment, the interviewees indicated that odour nuisance at the rendering plant due to carcasses is mainly caused by bacterial conversion of proteins. Cooling of carcasses contribute to the slowing down of these conversions. The lower the temperatures, the longer the cadaver can be kept in good condition. No unambiguous answer could be obtained as to the cooling temperature; not lower than -7°C because of the processing at the rendering plant and preferably not higher than 5 °C. Frequent removal of carcasses from the farms and a quick handling at the rendering plant may also reduce odour nuisance at the rendering plant.

DISCUSSION: Not much literature dealing with the importance of risk factors concerning disposal of carcasses is available. However, the interviewees agreed the hygiene measurements to be most important for minimising the risk of spread of animal diseases. These hygiene measurements have been laid down in protocols, which are only used during outbreaks of contagious diseases. Applying these protocols continuously and more accurate supervision as to these protocols might also reduce the risks.
The optimal temperature of storage of carcasses is not known. To determine the most optimal temperature, expert knowledge and literature on the storage time of meat products should be used. Freezing of the carcasses will be the best option for slowing down the conversion and minimising odour nuisance at rendering plants. However -10°C is not optimal during the processing by the rendering plant.
Besides cooling of the carcasses at the farm and a quick handling at the rendering plant, logistical adjustments should be emphasised during high temperature weather.

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