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Handling of lesions indicative of prior septicemia in sows

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Introduction

During meat inspection, abscesses may be found which indicate that an animal has suffered from septicemia at an earlier stage in life. In Denmark, due to the national legislation such animals are sent to the rework area for an extended pyemia examination with incisions targeting the predilection sites for such abscesses. Tissue with abscesses found at this stage is removed from the carcass. Next, the carcass is sent for mandatory de-boning after which almost all carcasses are accepted, although all bones separated from de-boned carcasses are condemned and treated as category 2 animal byproducts. The food safety value of this approach has been questioned. It should be noted here that abscesses have no impact on food safety but are regarded as a quality issue only (Bækbo et al., 2016). Preliminary studies and analyses using register data from the largest sow abattoir in Denmark have shown that almost no abscesses are overlooked at the pyemia examination (Pedersen et al., 2017). However, routine recordings at meat inspection may not have been sufficiently detailed to address this issue. Hence, to elucidate whether and where abscesses could be found after the pyemia examination a prospective study was needed. Based upon the outcome, the examination could be updated, and the legislation amended.

Material and Methods

Therefore, a detailed study was undertaken, involving 100 sows destined for de-boning, following findings of lesions indicating prior septicemia. The study was undertaken in November and December 2018 at the largest sow abattoir in Denmark in a collaboration between the abattoir, the local and national veterinary inspection authorities, and the Danish Agriculture & Food Council. A recording scheme was designed to ensure systematic registration of findings during 1) the pyemia examination, 2) a supplementary examination and 3) the de-boning. The pyemia examination and the supplementary examination consist of incisions, palpations and visual inspections at defined locations and predilection sites for abscesses:

Pyemia examination:

1) Inspection of the spine, 2) inspection/palpation of fore and hind legs, 3) loosening the bow including deep cuts along humerus, 4) loosening the inner

thighs including deep cuts into and along femur, 5) loosening the tenderloin muscle from column, 6) inspection of sternum and ribs with special attention to the transition between bones and cartilage
Supplementary examination: 1) Incision along the thorn pins and inspection of the entire spine, 2) cutting off the head and toes, 3) in the thoracic cavity, incision of the transition between the cartilage and the bones of the ribs and inspection of the sternum and ribs, with special attention to the transition between bones and cartilage.

Results

The results show that additional abscesses related to pyemia were found at de-boning for seven carcasses. The location was: femur and humerus (n=1), humerus (n=3), hind side of costae (2), and scapula (1). For the abscesses in femur and humerus, the location was latero-proximal to the growth line.

Additional abscesses related to pyemia were found in seven carcasses in relation to the supplementary examination. Two of these were considered as related to the pyemia complex; one in the pelvis and one latero-proximal in the humerus. The remaining five abscesses were found in the neck or the midpart and were not considered as related to the pyemia.

Hence, abscesses related to pyemia were found in nine out of 100 carcasses - either during the supplementary examination or the pyemia examination. Moreover, neck abscesses related to injections were found in 54 in total out of 100 carcasses.

Discussion and Conclusion

The aim of the study was to collect data that could be used to update the current pyemia examination in sows. During the supplementary examination, seven sows with abscesses were found, of which a single sow had a pyemia-related abscess in the pelvis. During the supplementary examination combined with de-boning, a single sow was found with a pyemia-related abscess in the humerus. Hence, in total two sows with pyemia-related abscesses were found.

In 93 sows no abscesses were found during the supplementary examination. In these 93 sows, de-boning led to detection of pyemia-related abscesses in seven cases. Of these seven sows, four had an abscess in the humerus, one in the femur, one in the ribs, and one in the scapula. In total, six of the seven sows had one pyemia-related abscess, and one sow had two pyemia-related abscesses (humerus and femur).

The high prevalence of neck abscesses (54%) was expected, because sows are adult animals that have received many routine vaccinations and some antibiotic treatments throughout their lives. As no control group was included in the study, it is not

to say whether sows destined for de-boning have a higher prevalence of neck abscesses compared with sows not destined for de-boning. In any case, such abscesses have no relation to the pyemia complex, and they are routinely handled by the slaughterhouse employees, as it is known that there may be neck abscesses in sows.

The sites of abscesses latero-proximally on the femur and humerus, and in the scapula (total of six carcasses out of 100) raised the question of whether it would be possible to add a latero-proximal incision on the four extremities on the hanging carcass. If these four incisions were added to the supplementary pyemia examination, most of the abscesses related to pyemia found in the present study would have been encompassed.

Subsequently, the possibilities of expanding the supplementary examination with specific deeper incisions on the forelimb's and hindquarter's muscle into the bones followed by inspection and palpation were elucidated. The inspection and palpation covered the epiphysis of femur and the humerus, as well as the area covered by the lateral epiphysis line for occurrence of abscesses originating here from. This was proved to be possible in practice on the hanging sow.

The study has led to an update of the official Danish pyemia examination to be done on the hanging sow upon suspicion of prior septicemia. This implies improved working conditions, and to a possibility of replacing mandatory de-boning with a supplementary examination to the pyemia examination. The new legislation came into force mid-April 2019 and has led to higher profitability, less food waste and better working conditions for the employees.

References

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