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Meat Losses in Swedish Primary Production of Dairy Cattle

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Abstract

The food system contributes to one-third of global greenhouse gas emissions annually, of which animal-based products account for 60% of this figure (Mbow *et al.,* 2019; Xu *et al.,* 2021). Due to this, there is an ongoing polarised debate regarding meat consumption and the right way forward (Croney & Swanson, 2023). However, reducing waste in the meat production chain is a less controversial issue and could be implemented quickly. While there have been several studies on household food waste, the primary stages of meat production are still insufficiently explored (Karwowska *et al.,* 2021; Parfitt *et al.,* 2021; FAO, 2022). Recent research indicates significant meat losses at the farm level, with a loss rate of 8% of the produced volumes (Strid *et al.,* 2023). Of particular concern, dairy farms display a worse performance than beef farms. To investigate this further, data from 17,424 Swedish cattle producers from 2017 to 2022 was retrieved from the Swedish Board of Agriculture. From this population, active dairy farms were selected based on two criteria: farms with more than ten dairy cattle each year to avoid moonlight and hobby farms, and farms where 50% or more of the cattle were females aged 24 months or older to exclude other varieties of cattle farms. The resulting sample size was 1,993 farms. The study aimed to quantify the original meat loss at each farm and to evaluate a scenario for potential loss reduction, constructed as the reduction in beef losses achieved if all farms were to match the loss rate of the top-performing 10th percentile. The study found that, as a baseline, the studied dairy farms lost, in total, 4,600 tonnes of meat [carcass weight] annually, with a mean loss rate of 14%. The tested scenario delineated a possible reduction of 4,300 tonnes of beef per year, corresponding to a new loss rate of 0.97%, potentially saving 100 thousand tonnes CO_2e per year for the studied dairy farms. The best 199 farms had a loss rate ranging from 0 to 0.96%, thus proving that reduction of losses within this sector is possible. These results have important implications for the meat production industry, as addressing the issue of on-farm meat losses could substantially reduce the overall environmental impact of cattle production.

Keywords: Swedish dairy cattle, management of on-farm losses, meat loss, sustainable

food production, waste reduction

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