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THE WELFARE AND HAIR CORTISOL CONCENTRATION OF PIGS IN MIXED ORGANIC FARMS

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Background and Objectives

Mixed organic systems may provide a welfare-friendly alternative to intensive pig farming by reducing stress and promoting natural behaviors of the pigs. This study investigated the effects of seasonality, housing system (indoor or outdoor), and sex on hair cortisol concentration (HCC) in pigs from organic farms. We also assessed whether the housing system and environmental conditions affected pigs' welfare levels.

Material and Methods

Fifty-three pigs of the Slovenian indigenous Krškopolje breed were divided into three groups based on breeding system: group Out-1 (n = 18; reared outdoor year-round), Out-2 (n = 20; reared indoor in winter and outdoor in other months), and Ind (n = 15; reared indoor year-round). Hair samples were collected from the withers area on four occasions (winter, spring, summer, autumn). Before sampling, the pigs' welfare was assessed using the Piglow app.

Results

Seasonality significantly affected HCC and was more pronounced in pigs reared outdoor. HCC peaked in winter across all groups and was lowest in summer and autumn. Similarly, the welfare was lowest in winter across all groups, with group Out-1 scoring the lowest, but no differences were observed between groups in other seasons. The highest HCC was measured in group Out-1 in winter, as it was the only group housed outdoor at that time. In contrast, group Ind had significantly higher HCC in summer compared to the groups Out-1 and Out-2. Sex had no effect on HCC and HCC decreased with time. The welfare of pigs improved in spring and stayed high throughout the study.

Discussion and Conclusion

Seasonality and housing systems substantially influenced HCC and the welfare levels, highlighting the impact of environmental conditions on pigs. The findings indicate that combined indoor-outdoor systems, where pigs are housed indoor in winter and outdoor in warmer months, may enhance welfare levels of pigs, reared in organic farms.