

GROWTH PERFORMANCE, CARCASS CHARACTERISTICS, AND MEAT QUALITY OF HEREFORD BULLS OVER TWO CONSECUTIVE YEARS ON AN ORGANIC FARM



Alo Tänavots^{*1,2}, Marek Tepper¹, Kristi Kerner¹

¹ Chair of Food Science and Technology, Estonian University of Life Sciences, Tartu, Estonia.

² Chair of Animal Breeding and Biotechnology, Estonian University of Life Sciences, Tartu, Estonia.

*alo.tanavots@emu.ee

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FARM and ANIMALS

Beef cattle were grazed on coastal grasslands during summer and fed silage from cultivated pastures in winter. Grain was excluded from the feed ration. In winter, the animals were housed in a barn with access to an outdoor area.

THE AIM

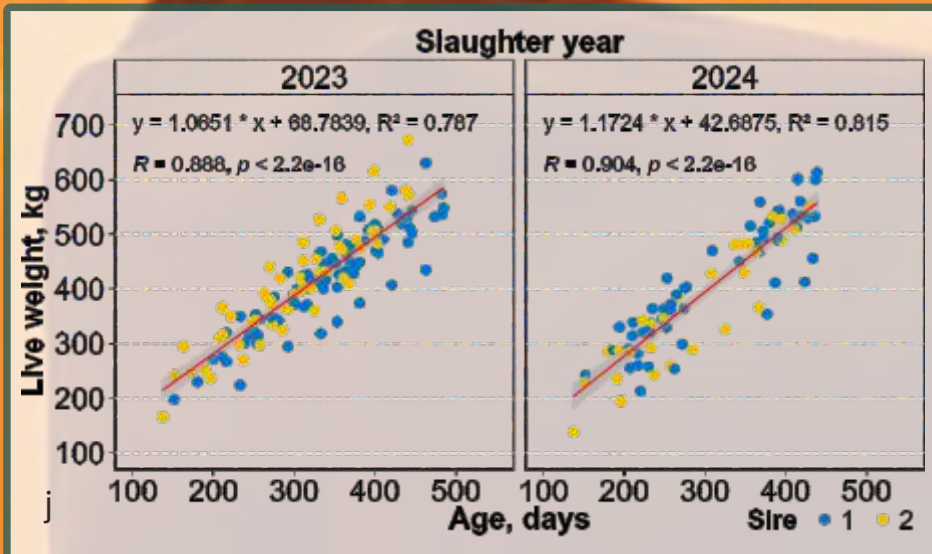
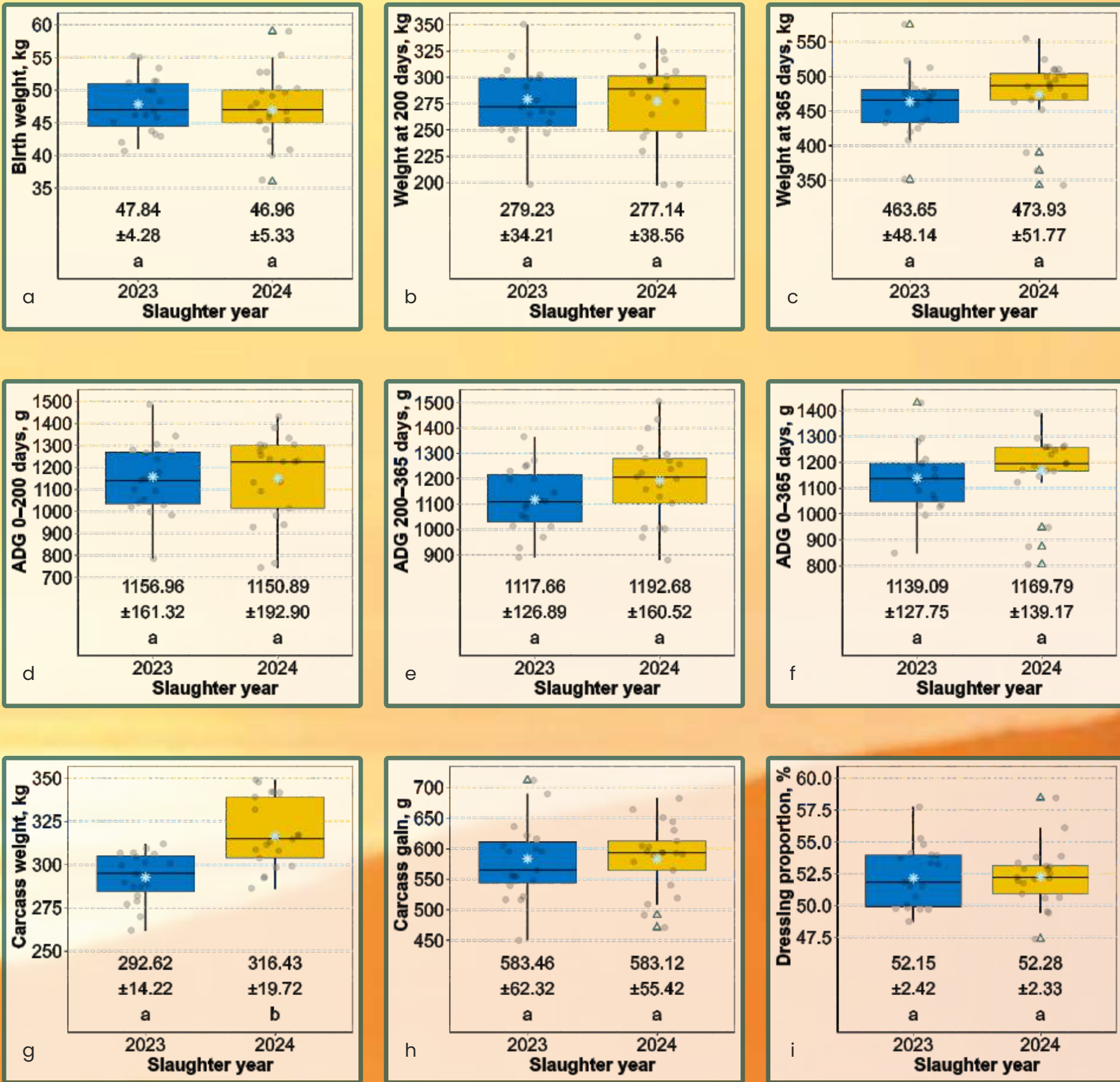
The study investigated the effects of slaughter year on the growth performance of bull offspring and the meat quality of the *musculus semitendinosus* during 28 days of wet ageing.

STATISTICS

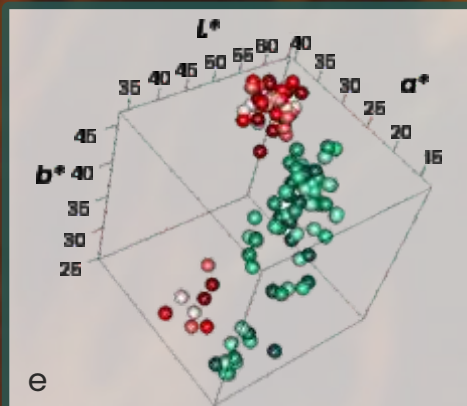
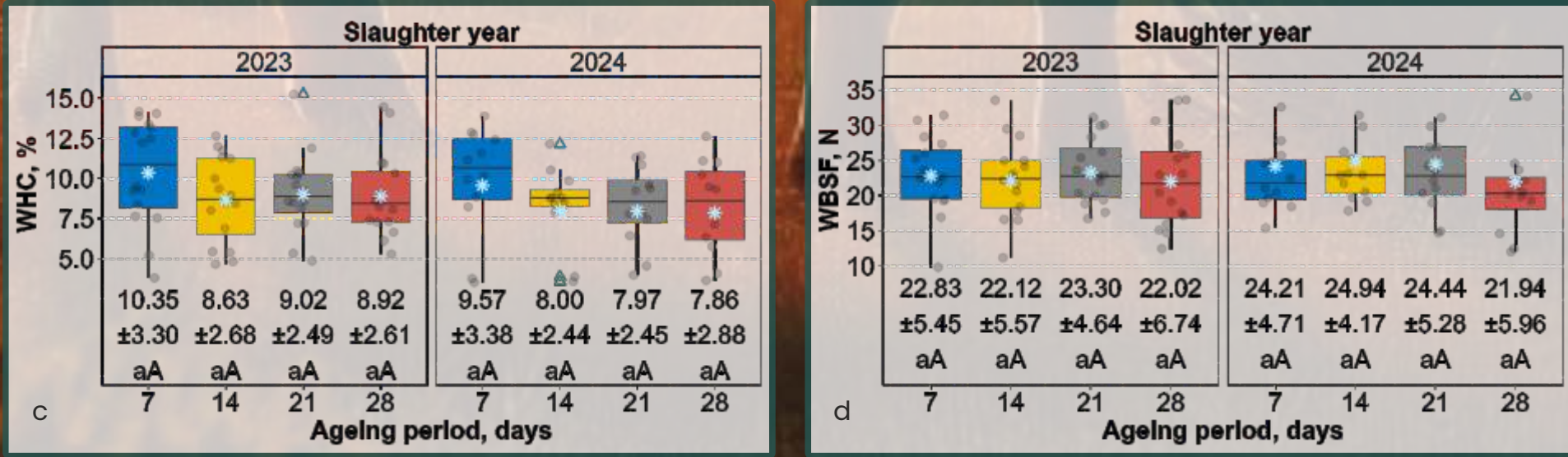
Data were analysed in R using a linear model (LSM $\pm$ SD).

CONCLUSION

Slaughter year significantly influenced key compositional and colour traits, with bulls slaughtered in 2024 showing higher protein, fat, and redness values. Ageing primarily affected traits related to exudate loss and colour stability. These findings highlight the combined impact of production year and post-slaughter handling on meat quality.



Figures 2a–j. Growth performance of bulls slaughtered in 2023 (n = 19) and 2024 (n = 21) (ADG – average daily gain). Light blue asterisks indicate LSMs, grey dots represent individual observations, and green triangles denote extreme values in the boxplots (a–i). Different lowercase letters indicate statistically significant differences between slaughter years ($P < 0.05$).



Figures 3a–e. Meat quality of bulls slaughtered in 2023 (n = 16) and 2024 (n = 12). WBSF – Warner-Bratzler shear force; WBC – water-holding capacity; L*, a*, b* – colour parameters (CIE Lab). Light blue asterisks indicate LSMs, grey dots show observations, and green triangles denote extreme values in the boxplots (a–d). Lowercase letters indicate differences between slaughter years ($P < 0.05$); uppercase letters indicate differences across ageing days. Green and red represent 2023 and 2024, respectively, in a 3D chart (e); shading from dark to light indicates 7, 14, 21, and 28 days of ageing.

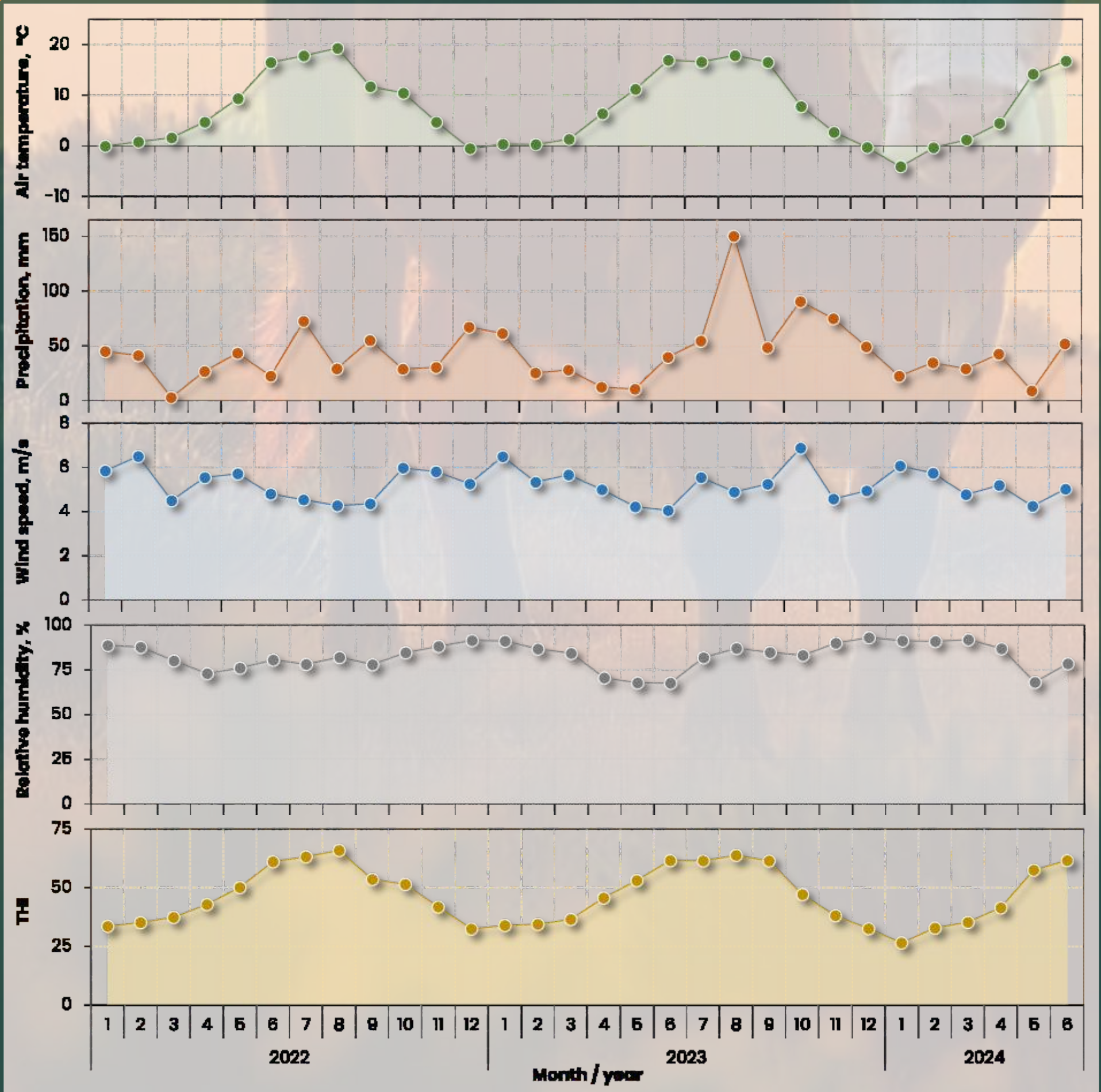


Figure 1. Meteorological data of the observation site (THI – the average temperature humidity index)