

Occurrence of feather damage, skin injuries, and keel bone deviations in dual-purpose hens in organic farming

Ruben Schreiter¹, Linda Fitz², Lydia Gieh², Klaus Damme², Philipp Hofmann³

¹Martin Luther University Halle-Wittenberg, Halle, Germany

²Bavarian State Estates, Kitzingen State Estate, Kitzingen, Germany

³Bavarian State Research Center for Agriculture, Kitzingen, Germany

Corresponding author: ruben.schreiter@landw.uni-halle.de



Background

Dual-purpose hens are a possible alternative to the ban on the killing of day-old chicks in Germany since 2022

Challenge: Dual-purpose hens also show changes in integumentary condition during life time

Objective: Characterization of the integumentary condition of dual-purpose hens and one hybrid layer strain in organic farming

Materials and Methods

Dual-purpose poultry breeds

each 5 compartments
142 hens/origin

High-performing layer hybrid

4 compartments
104 hens



Coffee ÖTZ (COF)

Crossbreed: Bresse Gauloise rooster x New Hampshire hen

Lohmann Sandy (LSa)

hybrid layer from Lohmann Breeders



Triesdorfer Landhuhn (TLH)

hybrid incorporating Bresse Gauloise, Italian, Rohde Island red, Sulmtaler, and Sundheimer



Augsburger crossbreed (AxLB)

Crossbreed: Augsburger rooster x Lohmann Brown-Classic hen

All animals kept in a fixed stable with an outdoor climate area and provided with organic feed

Animal assessment every 10 weeks from 20 to 70 weeks of age – all hens

Standardized scheme:

- feather loss (back, belly, dorsal neck)
- skin injuries
- toe injuries
- footpad swellings
- palpable deviations from midline of the keel bone

Results

Multivariate regression models showed influence of origin on plumage condition, skin injuries and footpad swellings (each $p < 0.001$), but not on keel bone deviations ($p = 0.397$).

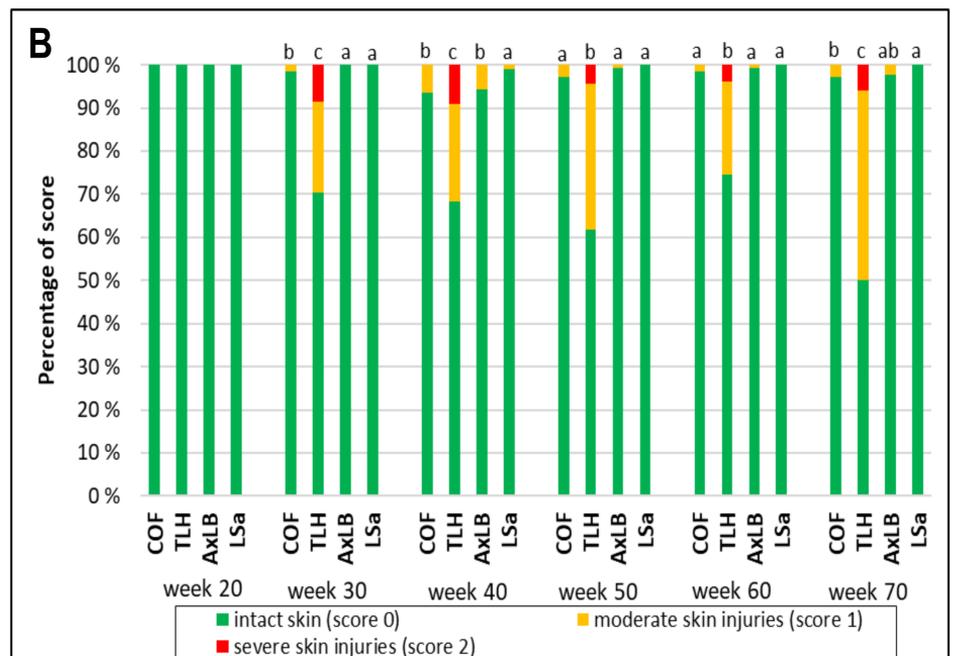
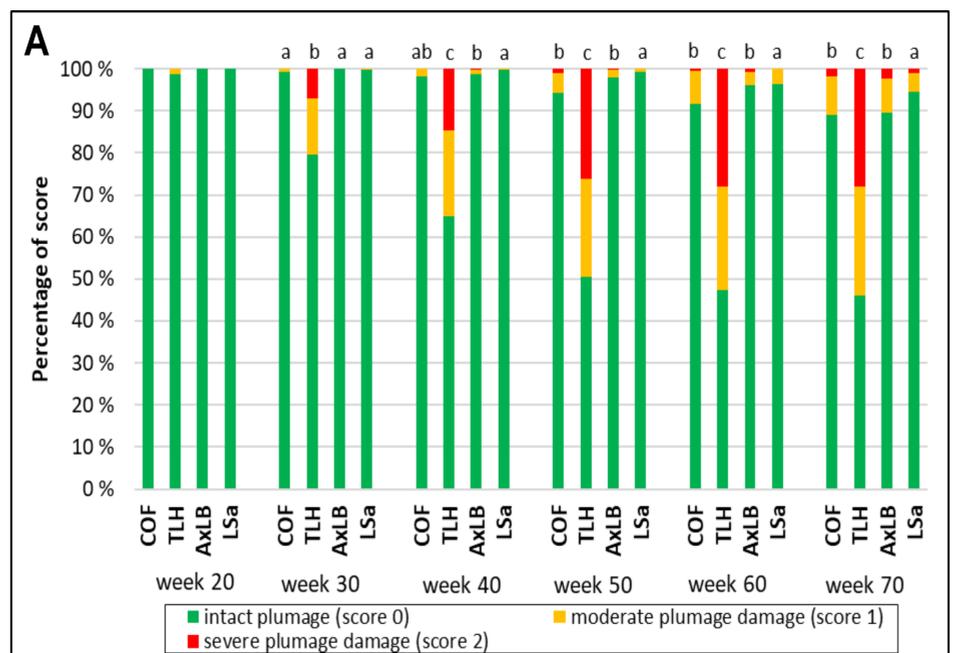


Figure: Plumage damage (A) and skin injuries (B) according to age and origin

Conclusion

Results indicate absence of general benefits of examined dual-purpose hens compared to evaluated high-performance hybrid hens regarding animal welfare-associated traits of feathers, skin, footpads, and keel bone.