

Title: Using the Welfare Quality protocol to assess effects of hatching system on the welfare and behaviour of broiler chickens

Speaker: Mona Giersberg

M. F. Giersberg¹, R. Molenaar², I. C. de Jong³, H. van den Brand², B. Kemp², T. B. Rodenburg^{1,2}

¹*Utrecht University, Faculty of Veterinary Medicine, Department Population Health Sciences, Animals in Science and Society, the Netherlands*

²*Wageningen University & Research, Adaptation Physiology Group, the Netherlands*

³*Wageningen University & Research, Wageningen Livestock Research, the Netherlands*

The hatching environment can affect health, resilience and welfare of broiler chickens in later life. The aim of this study was to investigate effects of recently developed hatching systems on the welfare of broiler chickens in early and later life. Therefore, a grow-out experiment on a semi-commercial farm was performed with chickens that hatched either conventionally (HH, hatchery hatched, no feed, water and light in the hatcher), in a system in which feed, water and light were provided in the hatcher (HF, hatchery fed) or on-farm (OH, on-farm hatched, where eggs were transported from the hatchery to the farm at day 18 of incubation, and where feed, water and light were available after hatch). The animals were reared in three consecutive batches, in 12 floor pens/batch (1,155 animals/pen) with a total of 12 replicates of each treatment. Several animal-based indicators were assessed following the Welfare Quality protocol: plumage cleanliness, footpad dermatitis (FPD), hock burn, skin lesion (at d21 and 35 of age), and gait score (d35). Furthermore, a set of behavioural tests was carried out: novel environment (d1 and 21), tonic immobility, novel object, and avoidance distance test (d4 and 35). Plumage cleanliness, hock burn and skin lesion were affected by age but not by hatching system, with older broilers scoring worse than younger ones ($P < 0.05$). An effect of hatching system was only found for FPD, with HH chickens having more frequently and more severe lesions compared to HF and OH chickens ($P < 0.05$). All responses measured in the behavioural tests were again affected by age but not by hatching system. In later life, chickens acted significantly less fearful than during the first days of life. The results indicate that conventionally hatched chickens scored significantly worse for the key welfare indicator FPD, whereas, hatching system seemed to have minor effects on other welfare and behaviour aspects of broiler chickens.