Behavior and Well-Being


The concept of an animal welfare (AW) judging contest was presented at the 2001 International Society of Applied Ethology by Helesi, Zanella, and Pajor. The purpose was (and is) to promote concepts of AW science and behavior to undergraduate students using the model of traditional livestock judging. The first AWJAC was held at MSU in 2002 (18 participants, 4 teams, 4 universities). The 2010 contest had 78 participants (18 teams, 9 universities), and now has 3 divisions: undergraduate, veterinary, and graduate students. The AWJAC originally evaluated AW of food animal species but now includes companion, laboratory, and exotic animals. The AWJAC includes a team assessment, usually of live animals, and individual assessments of animals in realistic hypothetical situations. Students evaluate and place live animals, or animals in scenarios, relative to the better AW (e.g., health, behavior), then provide oral reasons. For each category, judges evaluate reasoning and placing of animals. Scenarios provide good talking points regarding various aspects of AW, with all students viewing the slides at one time. All students provide qualitative judgments on the AW continuum regarding preferred, acceptable, or unacceptable components. Students integrate quantifiable science-based information with qualitative ethical concerns in this interdisciplinary problem solving exercise. Judges have expertise in AW science and/or knowledge of evaluated species. Teams are composed of 3–5 students, who all participate in the evaluation and recommendations. Guidelines for teams, rules, references and sample scenarios are on the AWJAC Web site. Over 95% of participants (345 students) believe the AWJAC is valuable; they increased their knowledge about AW science, and would recommend participation to peers. Based on recommendations, the contest moved to a 2 d format, added speaker and poster programs and the veterinary and graduate student categories, and is now held in November.

Key Words: animal welfare, behavior, bioethics, judging, assessment


AAAP abstract


Enrichments for laying cages are receiving increasing attention by egg producers as a means of meeting the behavioral needs of laying hens. Pullet cage enrichments have received less attention and study. Adapting pullets to perches before placement in enriched laying cages may offer health and welfare advantages over pullets raised without perches. Thus, the objective of this study was to assess the response of Hy-Line W36 White Leghorn pullets to the presence of perches placed in conventional cages. Prior to hatch, 2 round steel Big Dutchman perches were installed in each of 14 cages in parallel arrangement with respect to the feed trough at a height of 8.9 cm from the cage floor resulting in 3.2, 5.1, 7.6, and 10.2 cm of perch space/pullet at hatch, 3, 6, and 12 wk of age, respectively. An additional 14 cages without perches served as controls. Floor space allowances for pullets of all cages were 98, 155, 233, and 310 sq cm/bird and the numbers of pullets/cage were 38, 24, 16, and 12 at hatch, 3, 6, and 12 wk of age, respectively. A sample of pullets from each cage was evaluated for foot health, BW, right adrenal weight, and packed cell volume (PCV) at 3 (PCV at 4.4 wk), 6, and 12 wk of age. Data were analyzed using an ANOVA. Behavioral observations indicated that pullets began using perches as early as 2 wk of age. Pullets with perches showed an increase in BW at 12 wk of age as compared with 12 wk old pullets without perches, with no effect on BW at 3 and 6 wk of age (treatment by age interaction, P < 0.03). The gross right adrenal weight was not affected by the perch treatment, but the relative right adrenal weighed less (P = 0.06) for pullets given access to perches as compared with controls, an indicator that pullets with perches were less stressed. Pullets showed little to no hyperkeratosis of the foot-pads and toes to 12 wk of age. The incidence of hyperkeratosis and PCV were similar between pullets reared in cages with perches as compared with those in cages without perches. In conclusion, these results to 12 wk of age indicate that the presence of perches in a conventional cage did not detrimentally affect pullet performance and well-being.

Key Words: perch, White Leghorn, body wt, adrenal, PCV


Rapid growth of broiler chickens can cause leg weakness and abnormal walking behavior or gait. This study focuses on the anatomical characterization of motor neurons in the spinal cord involved in motor movement of the legs. Broilers were raised from hatch to 5 weeks of age in floor pens. Feed and water were provided ad libitum and birds given a photoperiod of 20h of light and 4h of dark. Body weight was recorded weekly and each bird was given a numerical gait score described by Kestin et al. (Vet Rec. 131:190–194; 1992) that ranged from 0 (completely normal) to 5 (unable to stand). Three groups of birds (controls, high gait score and normal leg bones, high gait score and femoral head separation) were sampled at 30 d of age. Blood samples were taken followed by sampling the synsacral region that was dissected to expose the spinal cord and placed in 4% paraformaldehyde. Lower spinal cord segments were sectioned and nissl stained. Plasma corticosterone level, an indicator of stress, was determined by RIA and 3–4 fold increase was found in 2 experimental groups with high gait scores compared with controls (P < 0.08 and P < 0.02 respectively). Motor neurons in the ventralateral motor column of the lumbosacral region (LS1-LS6) of birds with a gait problem and normal femoral bones were shown to have changes in the cell bodies of neurons. Specifically, the perikarya of motor neurons were more globular in appearance with fewer projections. In contrast, the motor neurons in controls and those with high gait scores and femoral head separation had normal star shaped characteristics of the motor neurons in the ventral horn. Cell Surface
Index (circumference/cell diameter) of motor neurons from birds with the high gait score and normal leg bones was decreased 7.04% when compared with controls ($P < 0.05$). Results of this study indicate that this particular gait problem that occurs infrequently, is independent of the one reported from femoral head separation and necrosis in broilers. Supported in part by a grant from Cobb-Vantress, Inc.

**Key Words:** lumbosacral region, gait score, lateral motor column, corticosterone, femoral head

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