

Can alternative types of litter improve foot pad health, performance and behaviour in broilers?

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The objective of this study was to evaluate the effect of 5 different types of litter on prevalence and severity of pododermatitis, performance and behaviour in broilers. In two 35-day trials, the effects on behaviour (activity, resting, feeding, drinking, dust bathing), development of pododermatitis and performance (body weight, feed conversion, mortality) were investigated in male broilers (Ross 308). Litter types used were chopped straw, wood shavings, spelt glumes, Pelletinos (ground straw pressed into pellets at high temperature), HygieneWood-Shavings (pine heartwood having antibacterial properties). The broilers were kept in 20 floor pens (each 4 m², 60 broilers/ pen) under practical conditions (feeding, light program). At the age of 7, 14, 21, 28 and 35 days, 10 individually marked birds per pen (200 focal birds in total) were weighed and scored for pododermatitis (0: no lesions, 1: mild lesions, hyperkeratosis, 2: severe lesions, deep ulcerations). Data was analysed using GLM-Procedure for analysis of variance. Video supported behavioural observations of the focal birds were carried out during the light phase at weeks 3 and 5. Pododermatitis already appeared by day 7. As broilers aged, lesions were increasingly numerous and became more severe in all litter types. The effect of litter type was significant (Chi-S=22.7; DF=4; P<0.0001). The score was worst on chopped straw (1.54). The best results were achieved with Pelletinos (0.38) followed by HygieneWood-Shavings (0.55), wood-shavings (1.0) and spelt glumes (1.03). The average body weights were significantly higher in trial 2 (1:2.07 to 2.19 kg, 2: 2.37 to 2.45 kg) while feed conversion was significantly lower. Mortality was influenced neither by trial nor by litter type. Overall, groups kept on Pelletinos had the best foot pads and the highest body weights. Behavioural results showed that alternative types of litter (Pelletinos, HygieneWood-Shavings) increased the activity whereas broilers on chopped straw rested more (P<0.05). In conclusion, behaviour, performance and pododermatitis could be improved by using Pelletinos or HygieneWood-Shavings litter. Chopped straw (as standard litter in Germany) caused the worst foot score, reduced body weight and activity of broilers and seems to be the least suitable variant in relation to animal welfare.

Keywords: broiler, litter type, pododermatitis, performance, behaviour