Substrate preferences in young laying hen chicks

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Different substrates may offer different stimuli to chickens. The aim of the present study was to test whether the preference for a substrate by young laying hen chicks is influenced by the presence of their mother. Nine groups of 14 chicks (White Leghorn) were reared with a mother (a broody foster hen); ten groups of 14 chicks were reared without a mother. One-third of the floor area of the pens (2x1 m) was covered with sand, two-thirds of the floor area was covered with wood shavings. Food and water were available ad libitum and each pen had a nest. Pens without a mother were equipped with a dark heater in the nest. Behaviour was videotaped for 2 h on day 1, 3, 7, 10 and 14 during the light period. On each of these days, the location of the chicks and the number of active chicks were scored by instantaneous scan sampling, 12 times at 5 min intervals. The whole behavioural repertoire of two randomly chosen chicks per pen was scored continuously during 2 min and this was repeated six times at 10 min intervals for days 3-14. More chicks in the groups with a mother were observed on the wood shavings (Mann-Whitney U test, $P<0.05$ at day 1, 3 and 10). For the groups without a mother, significantly more chicks were observed in the nest on all days ($P<0.01$) as compared to the groups with a mother. More chicks of the groups without a mother tended to be at the feeder ($P<0.10$ at day 3, 7 and 10). The number of chicks on the wood shavings increased between day 1 and 7 and decreased thereafter (Wilcoxin on matched pairs test, $P < 0.05$ between the different days), and the number of chicks in the sand was higher at day 14 as compared to day 1-10 ($P<0.05$). No differences were found in activity levels between groups or between days. The behavioural repertoire did not show any differences between both treatment groups. Dust bathing was observed from day 7 onwards in all groups. The results of the present experiment indicate that young chicks prefer wood shavings from day 1 onwards, whereas sand becomes attractive at day 14. Perhaps because sand might be preferred for dust bathing, whereas wood shavings are more attractive to perform ground pecking. The presence of a mother seems to stimulate the chicks to be on the wood shavings, which supports research suggesting that chicks reared with a mother show more ground pecking in the first week of life (Riber *et al.*, 2007).

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