Test method to assess colony nests for laying hens regarding animal welfare

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Key words
Laying hen, Nest choice, Colony nests, Animal welfare, Authorization procedure, Preference test

Aim of the study
The Swiss authorisation procedure requires the assessment of the animal friendliness of housing systems and equipments for farm animals. For that purpose, an appropriate test method for group laying-nests was developed and subsequently applied to assess the appropriateness of five commercial nests.

Material and methods
In a first step of two experiments, we developed a “minimal nest”, which fulfilled the minimal requirements of the Swiss Animal Welfare Ordinance and which was preferred by the hens to an open litter box. In a second step of five experiments, this minimal nest was offered in combination with one of the five commercial nests. For approval, the nest’s acceptance by the hens must be better than or equal to the acceptance of the minimal nest. The experiments were carried out with nine or eight groups of 20 LSL-hens and lasted from the 18th to the 26th/28th week of age. The number of eggs in the nests and on the floor was registered daily and the behaviour and positions of the hens were recorded in the last two weeks of the experiments.

Results and significance
The hens significantly preferred an open litter box to the minimal nest with an open front side (59% vs. 36% of the eggs, $p<0.03$) while the minimal nest which had a front side covered by a plastic curtain was significantly more attractive than the open litter box (86% vs. 12% of the eggs, $p<0.001$) and this version was subsequently used for the testing of the commercial nests (CN). One of the commercial nests (CN 1) was significantly preferred to the minimal nest (78% vs. 17% of the eggs, $p<0.01$) and the hens tended to show fewer nest visits per egg laid in the commercial nest than in the minimal nest (2.2 vs. 27.0, $p=0.07$). Two of the commercial nests (CN 2 and 5) were significantly less favoured than the minimal nest (39% vs. 58% of the eggs, $p<0.01$; 16% vs. 82% of the eggs, $p<0.002$). For one of this nests (CN 2) no significant differences in the number of nest visits per laid egg was found (8.2 vs. 7.0, $p=0.26$), whereas for the other one (CN 5) this difference was significant in favour of the minimal nest (45.1 vs. 7.1, $p=0.04$). Regarding the other two commercial nests (CN 3 and 4) neither significant differences in the preference of the laying hens (42% vs. 56% of the eggs, $p=0.33$; 29% vs. 65% of the eggs, $p=0.17$) nor in the number of nest visits per egg were found (5.2 vs. 4.7, $p=0.67$; 17.5 vs. 6.0, $p=0.47$).
The attribute of seclusion of a laying nest seems to be essential for the animals searching a nest site. With regard to the authorization procedure, the preferred commercial nest (CN 1) and the nests without significant differences in the preference of the hens (CN 3 and 4) may get a definitive authorisation whereas the significantly less preferred nests (CN 2 and 5) are likely to be disapproved and consequently their commercial use will not be possible any more.

Publications, posters and presentations
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