THE CHOICE BEHAVIOUR OF LAYING HENS FOR FEED AND DUSTBATHING

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Measuring the preferences of hens for various resources that could be included in their environment (e.g. cage-mates, dustbath substrate, space) can be used as an indirect, but compelling (due to high acceptability by consumers), method of assessing bird welfare. Within a larger research program, the results of preference tests will be ultimately tested against the hypothesis that preferences align with biological requirements; that birds will choose resources that assist with maintenance of homeostasis. A simple method of measuring preferences is using a Y-shaped maze allowing a choice between two alternatives. In the current experiment, a purpose built Y maze was trialed to measure the preferences of 20 birds housed in furnished cages (containing a nestbox, perch and dustbath; birds were housed in these cages for 2 months prior to the experiment). First, each bird was familiarised to the maze over 12 exposures (120 secs each). Then, in Part A, half the birds were trained to associate one maze arm with feed and the other with nothing (resource randomly assigned to arm), while the other half of the birds were trained to associate one arm with sawdust (dustbathing substrate) and the other with nothing. Testing was then conducted over 12 tests per bird where birds were free to choose either arm, and the resource was visible from the start of the maze. In Part B, the treatments were reversed and birds were re-trained to associate one maze arm (opposite of that used in Part A) with the resource not previously tested (feed or sawdust) and the other with nothing and the birds were re-tested.

![Graph](image)

Figure 1. Average time to enter the Y maze for feed choice trials. Vertical lines indicate end of each day (day 1; trials 1-4, day 2; trials 5-8, day 3; trials 9-12).

Birds chose feed significantly more often than sawdust (85% vs. 48%, $P<0.001$), and the choice proportions were not affected by order of training (i.e. trained with feed first or trained with sawdust first, $P=0.322$). When birds were presented with feed vs nothing, they moved faster through the maze than when presented with sawdust vs nothing ($P<0.01$, Fig. 1). These results are likely due to a combination of high motivation for feed (an important resource for all animals but also a selected trait in laying hens) and little or no motivation for access to sawdust. This is perhaps partially a result of rearing experience; these birds were reared in cages with no experience of dust-bath substrates. Overall, the results of this experiment have demonstrated that laying hens can, and will, make choices in a Y maze that are consistent, both within and between birds, and intuitively sensible.

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