Overcoming food neophobia in birds using familiar colours and flavours

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Many animals when offered a new food will take days or even weeks to ingest adequate amounts to support their maintenance and growth. This phenomenon is referred to as ingestional neophobia. The aim of this experiment was to examine whether the addition of familiar food cues (colour and/or flavour) to a novel food would decrease the neophobic response of poultry to a novel food.

Fortyeight day–old layer cockerels were housed together and reared on a wheat–based crumble/pellet, dyed green and with a peppermint flavour. At 5 weeks of age they were transferred to individual cages in a temperature–controlled room (20 ± 2ºC). The birds were then trained over 1 week, to feed for only 2 hours (8:30–10:30 h) each morning and 20 minute each afternoon (14:30–14:50 h). Water was available at all times.

All birds continued on the wheat–based pellet during the morning feeding period. During the 20 minute afternoon session 32 birds were presented with a single novel food (a barley–based pellet) and 16 birds were given a choice between two novel foods. In the single and choice fed groups the birds were randomly allocated to 4 treatments (n = 8 for the single and 4 for the choice fed birds) for this period. Treatments for the single fed birds were: (1) novel food, (2) novel food + green, (3) novel food + peppermint, and (4) novel food + green + peppermint. Treatments for the choice fed birds were: (1) novel food vs. novel food + green, (2) novel food vs. novel food + peppermint, (3) novel food vs. novel food + green + peppermint, and (4) novel food + green vs. novel food + peppermint. Feed intake was measured for both feeding sessions each day.

Single fed birds. There was a slight difference in intake between treatments (P = 0.02) on day1. A multiple range test (LSD) indicated that birds in treatments 2, 3 and 4, which were offered the novel feed with an added cue, ingested significantly more than birds given the novel feed without added cues. There was no difference between treatments after day 1.

Choice fed birds. Total mean intakes for the 4 choice treatments over the 5 days of testing did not differ significantly. The preference for the novel feed with familiar cues added, treatments 1 to 3, is shown in the Figure. In treatment 4 (novel feed + green vs. novel feed + peppermint), the average preference did not differ significantly from a choice of 50:50 and, for clarity, is not shown. We conclude that the use of familiar cues in novel feeds can modify the behavioural response of poultry to the feed, increasing speed of acceptance and maintaining intake of that feed.