

## New evidence on using hullless oats in layer diets

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Hullless oats continue to attract interest as an alternative feed grain, particularly given consumer uncertainty concerning GM corn. In western Washington, where there is a vibrant small-scale poultry raising industry and a big market for non-GM feeds, a recent study looked at the economics of using hullless oats in layer diets and their impact on the consumer acceptability of eggs.

Hullless oats grown in western Washington were supplemented with corn and wheat in a feeding trial of Hy-Line Brown laying hens. The oats had no negative effects on hen health and productivity, and were economically competitive with commercially sourced organic corn and wheat. Three oat varieties were separately evaluated in the trial, but variety showed no influence on feed value.

The study has been published open access in the journal *Renewable Agriculture and Food Systems*: <https://doi.org/10.1017/S1742170517000217>

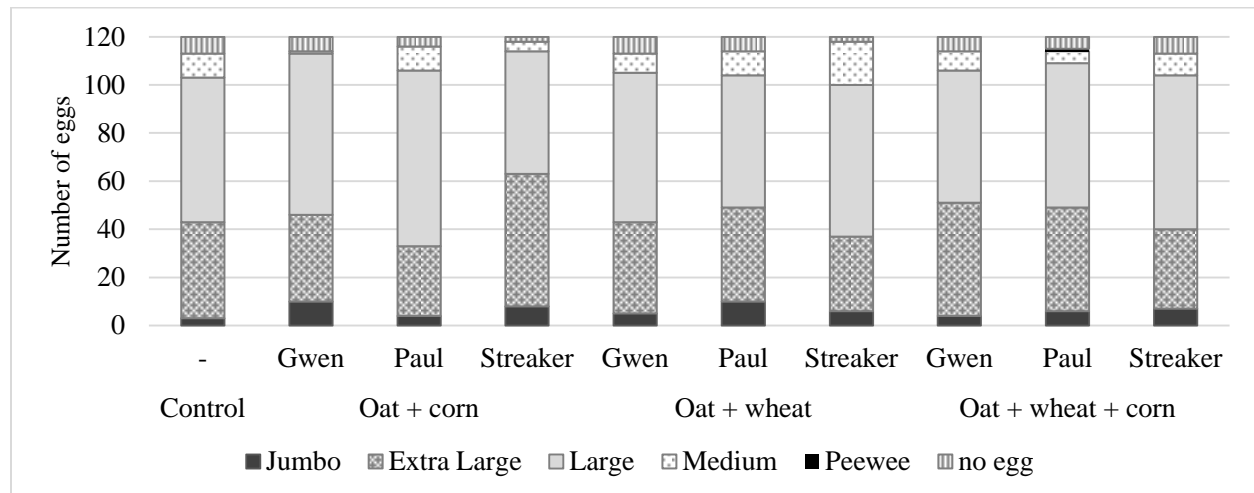


Figure 1. Size distribution of eggs produced by hens fed ten experimental diets between 24 and 32 weeks of age. Number of eggs per treatment represents a sample of four days' worth of eggs, collected during weeks 3, 5, 7 and 9 of the experiment from 3 replicates of 10 birds each per diet. Egg size grades were based on weight.

Eggs from the feeding trial were also used in a consumer evaluation. This research found that the feeding of hullless oats altered the chemistry of eggs in a way that perceptibly influenced their sensory characteristics when broken out, blended, and cooked. Panelists' comments suggest the changes occurred primarily in egg texture and the intensity of browning reactions. We identified the most probable explanation as being a decrease in yolk proportion in the oat-fed eggs. Despite these changes, effect sizes were small and results support existing evidence that hullless oats can be fed to poultry at a moderate proportion of the diet with no negative effect on consumer acceptability of eggs.

The study has been published open access in the journal *Frontiers in Nutrition*:

<https://doi.org/10.3389/fnut.2017.00037>

Figure 2. Visualization of Acceptance Test results (n=74 panelists) for two oat-based diets and an oat-free Control. The greater the area within the lines, the higher the consumer desirability of the entry. The figure was prepared by converting all scores to a 0-1 scale: Liking scores (Appearance, Overall liking, Flavor liking, Texture liking) were scaled by dividing the absolute score (1-9) by ten; JAR scores (Color, Flavor strength, Degree of cooking) were scaled by taking the absolute value of the difference between the score (1-5) and the 'ideal' value (3) and dividing by ten. Where scores of different diets were found to differ significantly from one another according to the Tukey HSD test, \* indicates  $p < 0.05$ ; \*\* indicates  $p < 0.01$ ; \*\*\* indicates  $p < 0.001$ .

