

The effect of grain type and choice-feeding on the performance of organically-reared broiler chickens. A. L. Rack*, R. E. Loar, N. P. Buchanan, R. W. Wood, and J. S. Moritz, *West Virginia University, Morgantown.*

Feed constitutes the majority of investment in organic poultry production. Past research has demonstrated that broilers have the ability to self-regulate nutrient intake based on individual metabolic requirement and changes in environmental conditions. Incorporating a choice-feeding management system and utilizing grains produced on-farm may improve broiler performance and reduce production cost for small-scale organic broiler producers. The objective of this study was to evaluate performance and production cost of choice-feeding management using one of two different grains. Three hundred one day-old Cobb 500 broilers were reared from 0-to-3-weeks in floor pens and fed a certified organic diet that met all NRC recommendations. On day 21, broilers were transferred to houses located on the West Virginia University certified organic farm. Broilers had access to pasture 12 hours daily and were exposed to natural fluctuation in environmental conditions. Experimental grower diets were certified organic and consisted of two feeding strategies (choice or no choice) arranged in a factorial structure with two grains (corn or oats). Diets were formulated to contain 30% grain and 70% of a complementary grain-specific premix. Broilers with no choice feeding option exhibited improved live weight gain (LWG), gain:feed (G:F), and carcass weight (CW) compared to broilers with a choice feeding option ($P = 0.0054$, 0.0001 , and 0.0020 , respectively). Broilers fed oats exhibited improved G:F ($P = 0.0309$) and smaller fat pad weights ($P = 0.0052$) compared to broilers fed corn. Grain type did not affect LWG ($P = 0.7605$). When utilizing a choice-feeding system, broilers fed oats consumed a grain to premix ratio more similar to formulated values (oats- 21.3 to 78.7 vs. corn- 58.1 to 41.9). However, the cost of the oat premix was approximately twice that of the corn premix. These results demonstrate that utilizing oats, a grain that may be produced on-farm, can improve broiler performance. However, choice-feeding may not be a viable economic option for small-scale poultry producers.