

Laying-hen nutrition trends

Kristjan Bregendahl, Ph.D., Devenish Nutrition

Feed-ingredient prices have been unusually high since mid-2020 and—with Russia's recent war on Ukraine—show little sign of decreasing. Despite high egg prices since March of 2022, likely driven by the reemergence of high-pathogenic avian influenza and subsequent euthanasia of 30+ million laying hens (some 10% of the population), recent trends in laying-hen nutrition have included finding less expensive alternatives to corn (for energy), soybean meal (for protein), and monocal (for phosphorus). Corn distiller's dried grains with solubles were either scarce or priced out of the diets during COVID, but are pricing back into diets again. Other, 'alternative' ingredients are available, but often do not price in due to relatively high price when comparing energy and nutrient contents with those of corn and soybean meal. Or, if an ingredient does price in (e.g., locally grown wheat), quantities may not be sufficient to completely replace corn and/or to last the entire year. Feed grade amino acids—other than DL-methionine, L-lysine, and L-threonine—are slowly finding their way into laying-hen diets, aided by more research on the birds' requirements of the next-limiting amino acids, tryptophan, isoleucine, leucine, and valine.

Phytase and NSPase enzymes almost always lower feed cost, but were already used in most pullet and laying-hen diets. Other, 'non-nutritive' or health-improving feed additives (e.g., probiotics, yeast, essential oils, organic acids, mycotoxin binders)—if added in the first place—have been removed from the diets in an effort to lower feed cost (even though the cost in the complete diet may be relatively low and the additives may help improve health and production). The need, the price, and the return-on-investment of feed additives are therefore receiving more scrutiny and, because of many options for additives of the same type, additives are being compared more often to find less costly and/or more efficient versions. Feed additives that address food safety (e.g., yeast, probiotics, others) continue to receive interest, although maybe less than in the past.

Over the last few years, there has been an increase in the number of cage-free hens in the USA. Although cage-free specialty egg and organic-certified hens continue to increase, most of the growth has been in conventionally fed hens housed in aviaries. Additionally, laying-hen flocks are now mostly single-cycle (no molt) and live longer, into the high 80s and low 90s weeks of age (up from ages in the early 80 weeks of age). Housing hens in aviaries and having longer-lived, older flocks both require more devotion to the pullet and early lay nutrition programs with special attention to body weight development and mineral nutrition. Aviaries sometimes carry with them eggshell problems from mechanical issues and can be helped with early nutrition as mentioned and feed additives, such as butyrate, in late lay.