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Botanicals to improve performance, meat quality

A nutrition scientist from Layn Corp. explained how its company's product can improve intestinal health and the final quality of breast meat.

Polyphenol-rich botanical extracts may aid in poultry gut health and lead to overall improved performance.

Juan Javierre, Ph.D., the lead nutrition scientist with Layn Corp., spoke about the company's TruGro GH feed additive for a TECHtalk held during the 2021 International Production & Processing Expo (IPPE) Marketplace taking place the week of Jan. 25-29, 2021.

Javierre said the product is a polyphenol rich botanical that can increase the abundance of tight junction proteins that stimulate the health of the birds' intestines and therefore its

overall health. Using natural ingredients is becoming more important with consumers and with the industry as use of subtherapeutic antibiotics continues to decline.

Layn Corp. is a producer of natural animal nutrition ingredients, plant-based sweeteners and functional botanical extracts.

Javierre said Layn specializes in working with polyphenol rich botanical extracts. Polyphenols are a family of naturally occurring organic compounds abundant in plants. He said polyphenol rich extracts help preserve the intestinal barrier function in birds and may be useful in improving meat quality.

When developing TruGro GH, Layn focused on intestinal integrity and digestive functions. A healthy gut is critical for healthy chickens. The intestine plays a crucial role both in nutrient absorption and immune health of the bird. If the gut is damaged or not functioning properly a bird cannot grow as quickly or as well. Furthermore, bacteria and other microorganisms that occur harmlessly in the intestine can spread to other parts of the bird and cause harmful infections if the intestinal barrier is not functioning properly. TruGro GH focuses on tight junction proteins, which help maintain the intestinal barrier.

Layn hypothesized that its product could improve overall bird performance while increasing the abundance of tight junction proteins, nutrient digestibility, intestinal villi height and meat quality.

Its study found that four tight junction proteins — claudin1, claudin5, occludin and zonula occludens — were detected in higher levels in the TruGro GH-fed chickens than in the control birds. It also found that intestinal villi were significantly taller than those of control birds. Larger villi provide a greater surface area for nutrient absorption. Layn confirmed that the crude protein digestibility was significantly higher in TruGro GH-fed chickens than the controls.

The combination of these results is that the birds were significantly heavier, 8.8% heavier than the control group, after six weeks of feeding.

Observation of meat quality also found that birds fed TruGro GH had lower oxidation rates, possibly due to the antioxidant effects of polyphenols. Layn conducted a consumer trial comparing the breast meat of TruGro birds and the control birds and found that consumers considered TruGro birds to have better texture values and less chewiness than the control birds. Additional study found the cooking losses were lower and that moisture loss during storage was lower in the TruGro birds than in the control birds.

Overall, Javierre said, more than 80% of its consumer panel preferred TruGro GH meat to the control meat.