

How to boost chicken production with the power of beta-glucanase in wheat diets

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In today's world, where concerns about antibiotic resistance and public health are on the rise, scientists are actively seeking alternatives to antibiotics in chicken feed. In a recent publication in the *Animal*

Nutrition journal, a team of Canadian researchers detailed a common ingredient in chicken diets—wheat—and how a special enzyme, purified beta-glucanase, can make a big difference.

The primary aim of the study was to determine whether the incorporation of purified beta-glucanase into chicken feed based on wheat could result in improved beta-glucan utilization and enhanced chicken performance. The researchers anticipated that beta-glucanase had the potential to break down a [wheat](#) component known as beta-glucan, which, in turn, could enhance nutrient digestion, promote a healthier gut microbiota, and ultimately contribute to the growth and well-being of the chickens.

"The results were fascinating. Not only did beta-glucanase effectively break down beta-glucan, but it also improved chicken growth and health," shared the lead author of the study, Namalika Karunaratne. "But there's more to the story. We compared beta-glucanase to antibiotics historically used in chicken feed and found that beta-glucanase had some unique advantages."

While antibiotics did a decent job of breaking down beta-glucan, beta-glucanase performed even better, especially in the early stages of growth.

"However, beta-glucanase reduced short-chain [fatty acids](#), which carbohydrate fermentation products in the chicken's digestive system. This might seem counterintuitive," said Karunaratne. "Interestingly, it didn't harm the chickens' overall performance. In fact, it led to improved [weight gain](#) and increased feed efficiency."

The researchers concluded that adding purified beta-glucanase to the chicken feed not only boosted performance but also reduced the need for antibiotics and other medications.

"This marks a major step forward in keeping our feathered friends healthy and our food supply safer. It's a win-win for both chickens and those who care for them," remarked Karunaratne.

More information: Namalika D. Karunaratne et al, Diet medication and beta-glucanase affect ileal digesta soluble beta-glucan molecular weight, carbohydrate fermentation, and performance of coccidiosis vaccinated broiler chickens given wheat-based diets, *Animal Nutrition* (2023). [DOI: 10.1016/j.aninu.2023.03.013](https://doi.org/10.1016/j.aninu.2023.03.013)

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