Introduction

When animals are reared for meat, farmers are often faced with the task of growing large numbers of animals in a short period of time. Fasting and starving rabbits intrinsically increases the rate of growth, yet it is not without consequence. Recent studies have highlighted the benefits of probiotics and prebiotics in improving growth and carcass quality in meat rabbits (Volek et al., 2007). When rabbits are fed a diet supplemented with probiotics and prebiotics, they show an increase in feed efficiency, muscle growth, and carcass yield (Oso et al., 2013). The use of probiotics and prebiotics can also improve overall health by selectively stimulating the growth and/or activity of one or a limited number of bacteria in the colon (Oso et al., 2013). Prebiotics have the ability to increase the amount of specific types of microflora already existing within the body, promoting positive changes in the digestive environment (Battish et al., 2013).

Materials & Methods

A total of 55 New Zealand and New Zealand crossbred meat rabbits were studied in two separate trials. Each trial was randomly separated into control and treatment groups. Supplemental groups were fed MannaPro Opti-Zyme probiotic and prebiotic supplement at a rate of one kg per rabbit per week. All groups were fed a standard 1% starter diet and had additional yeast, cell blocks, and 5% of a triple pelletized ration added to their overall diet. Once the rabbits reached market weight (5-7 pounds), they were slaughtered, carcass weights (frozen and wrapped) were recorded, and average carcass weights were calculated. For both trials, each group was housed in approximately ¾ inch wire mesh cages of six rabbits per cage. Molasses was fed to control groups to remain consistent. Each week, rabbits were weighed and recorded, and average carcass weights were calculated.

Results & Discussions

Trial One: Groups A and B consisted of 15 older, ten-week-old rabbits and Groups C and D consisted of 12 younger, seven-week-old rabbits. Both supplemental groups B and D showed different results. Initially, control group C weighed more each week, but when weights were recorded on Week 5, the supplemental group B weighed in just above the control group C, and continued to increase. By the end of the trial, supplemental group D gained the most weight compared to all other groups at a total of 20.35 pounds, despite having fewer rabbits in the group. Control Group C, though, was not far behind at 18.95 pounds.

The first chart below compares weekly live weights by group. The chart on the top right shows the total live weight gain by group. While supplemental Group B continued to remain heavier than control Group C, the total live weights were much less than control Group A of 17.7 pounds. Control Group C and supplemental Group D showed different results. Initially, control group C weighed more each week, but when weights were recorded on Week 5, the supplemental group C weighed in just above the control group A, and continued to increase. By the end of the trial, supplemental group C gained the most weight compared to all other groups at a total of 20.35 pounds, despite having fewer rabbits in the group. Control Group C, though, was not far behind at 18.95 pounds.

The chart on the bottom left displays the rate of gain in each group throughout the whole experiment. Supplemental Group B proved to have the highest rate of gain of 481 pounds per day while supplemental Group D experienced the lowest rate of gain of 130 pounds per day. The rate of gain for both control groups were close in number. Group A had a rate of gain of 421 pounds per day, and Group C had a rate of gain of 451 pounds per day. It is important to note that the control group A and supplemental group B were the same rabbits that were three weeks older than the rabbits in Groups C and D. Perhaps it is possible here that probiotics and prebiotics are most effective in younger rabbits.

The bottom right chart compares total live weights to total carcass weights, as well as the average live weight and average carcass weight, of supplemental (B and D) and control groups (A and C). When groups were analyzed, the rabbits fed the probiotics and prebiotics supplement gained more weight both while they were alive and after processing. Also, rabbits in the supplemental groups B and D weighed 17.4 pounds collectively, whereas rabbits in the control groups C and A weighed a few pounds less at 15.1 pounds collectively. After processing, supplemental group B weighed 45.25 collectively and control groups C and A weighed 43.3 pounds. The average weights in both groups were close in number, the supplemental groups at 9.55 pounds live and 3.33 pounds after processing, and the control groups at 9.87 pounds live and 3.33 pounds after processing. While the average weights were higher in control groups, the supplemental groups still showed higher collective weights than the control groups.

It is important to note that when the rabbits were sent to slaughter, researchers were unable to attach the processing. Processors were instructed to keep the rabbits in two separate groups, one containing the supplemental Groups B and D and the other containing the control Groups A and C. Upon the arrival of the processed rabbits, the groups were labeled incorrectly such that it was difficult for researchers to be certain that they were separated appropriately. The validity of the carcass values is questionable.

The aterials (*) seen in all graphs indicates that the group was fed the supplement.

The only results for Trial One are shown due to ongoing experimentation in Trial Two at the time of poster creation.

References


Evensen, C., & Espe, D. C. (2012). Evaluation of the effect of probiotics (Saccharomyces boulardii) on growth performance and hematological parameters of rabbits. Comparative Veterinary Medicine, 21(1), 73-78. 10.4102/cvmj.v21i1.5898.6


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