The Effects of Sprouted Corn, Sorghum, and Red Wheat on Broiler Performance
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Previous research has shown that the sprouting of cereal grains could potentially have a positive effect on feed efficiency in steers. In a study, the use of sprouted and unsprouted wheat showed a contrast in nutritional quantities. The sprouted wheat resulted in a greater level of crude protein, fat, and crude fiber. The same results have been seen in human consumption; showing that there is an increase in percentage of vitamin and mineral absorption in the body for folate, vitamin C, magnesium, protein, iron, and zinc. With this evidence, there has not been much research on the effects of sprouted and unsprouted grain in broilers. In this research study, six treatment diets were created using sprouted and unsprouted corn, sorghum, and red wheat. The objectives of this research were to determine if the benefits of sprouted grain would work to improve broiler performance and determine if there is a significant contrast in spouted and unsprouted nutritional quality. The hypothesis tested stated that “by creating six diets, using three different cereal grains (corn, sorghum, and red wheat), which contained sprouted and unsprouted grains, we can see the effect that sprouted grains have on nutrient efficiency”. This research study was broken up into two trials. The first trial showed the results in particle size and growth assay. The goal was to find that particle size was not altered using sprouted grains. Particle size was not significantly affected by source of grain, according to results shown with corn and sorghum. The results in Trial 1 indicated that the source of grain affected bodyweight gain (BWG), but not feed conversion (FC). The sorghum-fed birds performed better than the wheat-fed birds. Corn-soy fed birds showed less BWG comparatively. Mortality was low and not influenced by dietary treatment. Trial 2 involved an Apparent Metabolizable Energy (AME) test. This test involved six, 16-week-old mature male broilers, which were all close in weight. Each bird was fed one of the six samples (sprouted and unsprouted corn, sorghum, and red wheat) for 20 mins. After the 20 mins, feed was weighed, and fecal matter was scraped into a pan and dried overnight. The fecal matter was then used for an AME analysis. Energy content of the six feed samples and dried fecal matter were determined using bomb calorimetry. The results from Trial 2 indicated that the AME was not affected by sprouting. However, though the wheat samples contained less energy compared to corn and sorghum, the result was not significant.

Key words: broilers, grains, sprouting, sorghum, corn, red wheat