

APRI FACTS

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FACTSHEET #23 October 2005

PRIMARY GRAIN SOURCE FOR HEAVY HEN TURKEYS

Introduction

Runny manure or “flushing syndrome” seen in regional turkey flocks has been associated with increased incidence of breast buttons and blisters which results in increased downgrading during processing. Wet litter increases moisture and ammonia levels, thereby reducing litter quality. Heat and ventilation requirements need to be increased in an effort to maintain litter quality, which directly affects production costs. Age of the bird as well as dietary ingredients may affect incidence of runny manure. As nutrient levels change to meet the bird’s dietary needs, the ingredients in the ration also change. With an increase in bird age, the energy requirement will increase, therefore, an increase in the grain component of the diet is required. It has been suggested that birds fed wheat or barley based diets may be more susceptible to runny manure.

Trial

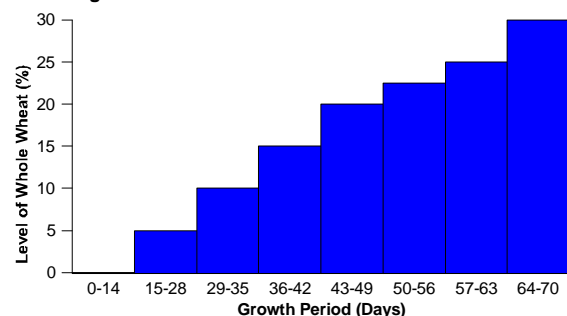
Turkey poults were fed diets either one of four dietary treatments varying in the primary grain source: corn, wheat, wheat + commercial enzyme, corn diluted with whole grain. Whole wheat was added after the diets were pelleted at the following levels (figure 1): 5% at 14 days, 10% at 28 days, 15% at 35 days, 20% at 42 days, 22.5% at 49 days, 25% at 56 days, 30% at 63 days.

Results

Throughout the entire duration of the trial, litter dry matter content (Figure 2) did not differ significantly ($P>0.05$) among the dietary treatments. Runny manure was observed during the trial, however, it was produced only in small amounts by birds on all treatments. At 70 weeks of age, no birds were live graded as having breast blisters.

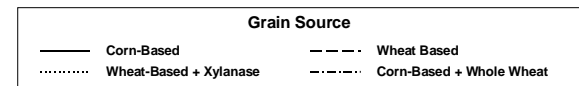
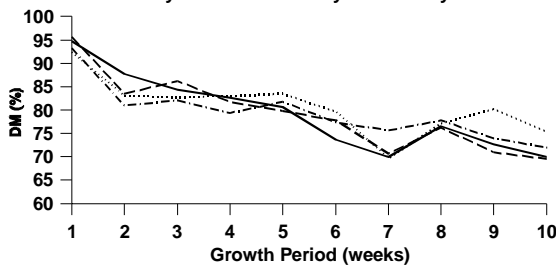
For the 1-14 d period, birds fed the enzyme-supplemented wheat-based diet consumed (Figure 3) more ($P<0.05$) feed than the birds fed the corn-based diets. There was no effect ($P>0.05$) of dietary treatment on feed consumption (Figure 3) for the remainder of the trial. Overall, from 1-70 d, birds fed the whole wheat diluted diets consumed (Figure 3) less ($P<0.05$) feed than the birds fed the undiluted corn-based diet and the enzyme-supplemented wheat-based diet.

Figure 1. Level of Whole Wheat in Diluted Corn Diet



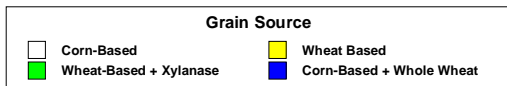
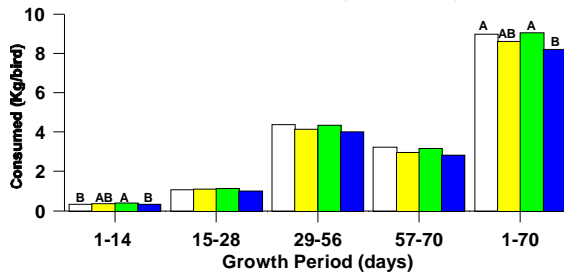
Overall weight gains (Figure 4) and 70-day body weights (Figure 5) were similar ($P>0.05$) for the birds fed the corn-based and wheat-based plus supplemental enzyme treatments. Birds fed the whole wheat diluted treatment had lower overall gains (Figure 4) and 70-day body weights (Figure 5) compared to the other three treatments. For the overall trial, birds fed the whole wheat treatment were less efficient (Figure 6) ($P<0.05$) than the other treatments.

Figure 2. Effect of Grain Source on Litter Dry Matter from Heavy Hen Turkeys



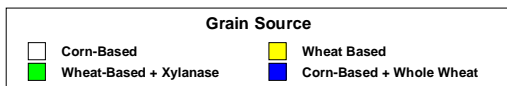
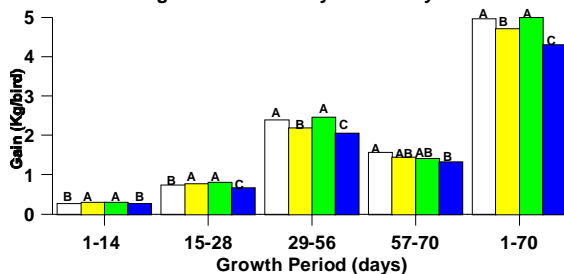
Means do not differ significantly ($P>0.05$)

Figure 3. Effect of Grain Source on Feed Consumption of Heavy Hen Turkeys



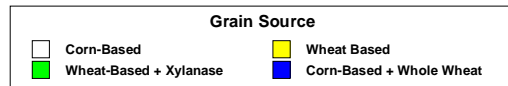
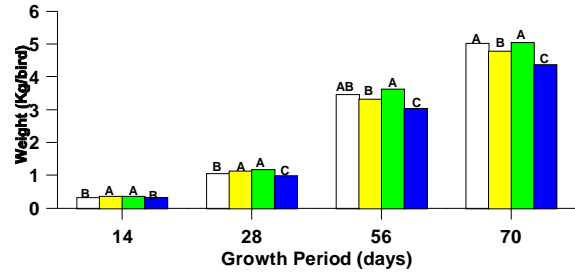
A,B Means differ significantly ($P<0.05$)

Figure 4. Effect of Grain Source on Weight Gains of Heavy Hen Turkeys



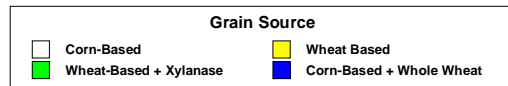
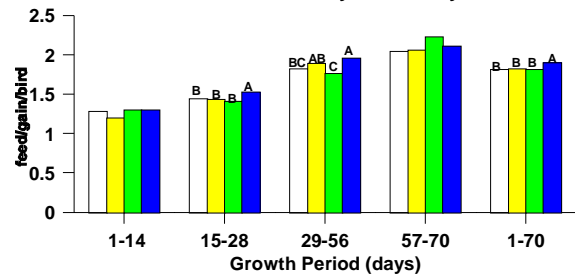
A,B,C Means differ significantly ($P<0.05$)

Figure 5. Effect of Grain Source on Body Weights of Heavy Hen Turkeys



A,B,C Means differ significantly ($P<0.05$)

Figure 6. Effect of Grain Source on Feed Conversion of Heavy Hen Turkeys



A,B,C,D Means differ significantly ($P<0.05$)

Industry Impact

Grain source did not affect incidence of runny manure in the turkeys. Similar growth performance was achieved with corn-based diets and wheat-based diets supplemented with a commercial xylanase enzyme. Results from the whole wheat dilution treatment indicated that the dilution levels used in this trial may be too high to achieve optimal growth performance.

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Funding Provided By: NS Dept. of Agriculture & Fisheries, Nova Scotia Turkey Producers Marketing Board

For more information on this project or any other project contact APRI@nsac.ca