

BiOWiSH® MultiBio 3P

Broiler Chickens Virginia Diversified Research Corp. (2017)

BiOWiSH® MultiBio 3P improves FCR and weight gain for typical Australian diets

Background

BiOWiSH Technologies has established collaborations with universities and independent research firms to investigate the benefits of BiOWiSH® in a wide range of commercial poultry production settings.

These research studies highlight superior performance benefits with the addition of BiOWiSH® direct-fed microbials (DFMs) to various diet compositions, feed types, and application methods such as through drinking water systems. Moreover, our body of research, including a collection of commercial field trials, illustrates the benefits of improved litter quality, reduced ammonia levels, and reduced odor complaints as additional outcomes of BiOWiSH® supplementation in poultry production. All studies can be found online at biowishtech.com.

In the current study, the effects of BiOWiSH® MultiBio 3P were studied when added to wheat based feed and given to broiler chickens. This is the second study in this series of studies done on wheat based diets to show consistency of results. BiOWiSH Technologies partnered with Michael D. Sims, president of Virginia Diversified Research Corp. (VDRC), to demonstrate the benefits of adding BiOWiSH® MultiBio 3P to broiler diets. The study was conducted over the span of 42 days in Harrisonburg, Virginia.

Objectives

The objective of this study was to determine the effects of BiOWiSH® MultiBio 3P when added to pelleted feed typical of Australian commercial broiler diets. The focus was on weight gain and nutrient utilization, as measured by feed conversion ratio (FCR) and relative digestibility values (RDV).

Solution

BiOWiSH® MultiBio 3P is a DFM that is recommended for use at all growth stages in poultry operations. It can be added to pelleted and extruded feeds.

This study followed BiOWiSH recommended best management practices by beginning BiOWiSH® MultiBio 3P supplementation at the day of hatch and maintaining proper concentrations by adding more BiOWiSH® with each feed addition. Dosage was 500 grams per ton of feed, in accordance with the best management practices.

Please see the BiOWiSH® MultiBio 3P user guides, available online, for more information on recommended dosages, as they may vary by species and management practice.

Implementation program

Straight-run broiler chicks (Cobb 500) were obtained from a commercial hatchery on the day of hatch (day 0) and spray vaccinated for coccidiosis with Coccivac®-B. Chicks deemed healthy at the time were assigned to experimental treatment or control groups based on placement weight.

BiOWiSH® MultiBio 3P



All-natural direct-fed microbial (DFM) for pelleted and extruded feed manufacturing

Available Sizes

- 5kg/11lbs
- 10kg/22lbs
- 25kg/55lbs

The two treatment groups were arranged as shown in Table 1.

Treatment group	Feed type	Product dose (kg/ton)	Replicate pens	Birds per pen	Total
Control	pellet	-	20	30	600
BiOWiSH® MultiBio 3P	pellet	0.5	20	30	600
Total animals per trial					1200

Table 1: Treatment group distribution

Broiler rations were formulated according to current best management specifications (i.e. starter, grower, finisher 1, and finisher 2). Control animals were fed pelleted diets typical of those used in commercial Australian poultry operations, comprised of wheat, milo, and soybean meal.

BiOWiSH® MultiBio 3P treatment animals were fed pelleted feed with the same composition, plus the addition of BiOWiSH® MultiBio 3P. BiOWiSH® was added to each basal diet at 500 grams per metric ton, mixed for three minutes, and pelleted at temperatures between 77 and 82°C with steam exposure for between three and seven seconds.

All broilers were provided *ad libitum* access to fresh water and the assigned treatment feed for the duration of the study.

Animals were housed in a metal and cinder block structure with a clay floor partitioned into four foot by five foot pens containing tube feeders, bell water fountains, and new wood shavings. Lighting, temperature, and ventilation conditions were monitored daily.

Used litter was introduced to each pen in equal amounts on day four to provide a mild challenge of low levels of coccidian, *E. coli*, *Salmonella*, and *Clostridia*.

Results & Discussion

BiOWiSH® MultiBio 3P treatment produced significant improvements in body weight gain, FCR and RDV when compared to the control diet. Broilers fed the BiOWiSH® MultiBio 3P diet showed a 1.2% improvement in weight gain and a 3.2% improvement in FCR at day 42 over the control group birds. Broiler body weight and FCR measurements are displayed in Table 2.

Treatment group	Day 42 body weight (kg)	Day 14 FCR*	Day 28 FCR*	Day 42 FCR*
Control	2.076	1.419	1.703	1.858
BiOWiSH® MultiBio 3P	2.1	1.356	1.638	1.799

Table 2: Body weight and FCR values at key points in the study

*FCR is adjusted by mortality and weight.

Body weight is the average weight per bird.

Birds receiving BiOWiSH® MultiBio 3P in their feed also showed significantly lower RDV than control birds. Low RDV and FCR values indicate increased nutrient utilization that supports birds achieving target weights faster.

This study shows that, when added to pelleted feed typical of Australian commercial broiler diets, BiOWiSH® MultiBio 3P improves FCR, and RDV, producing birds with higher body weight. In conjunction with other studies by VDRRC and Texas A&M University, these results illustrate that BiOWiSH® MultiBio 3P is consistently effective in a range of feed formulations and operational conditions.



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