

## BiOWiSH® MultiBio 3P

### Broiler Chickens Virginia Diversified Research Corp. (2016)

BiOWiSH® MultiBio 3P added to corn-based diets results in increased weight gain due to improved feed efficiency

#### 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](http://biowishtech.com).

**In the current study, the effects of BiOWiSH® MultiBio 3P were studied when added to corn based feed and given to broiler chickens. This is the second study in this series of studies done with VDRC on corn 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 benefits of adding BiOWiSH® MultiBio 3P to corn based pelleted broiler diets typical of commercial poultry operations in the United States. Broiler weight gain and feed efficiency were evaluated by measuring body weight, feed conversion ratio (FCR), and digestibility values.

#### Solution

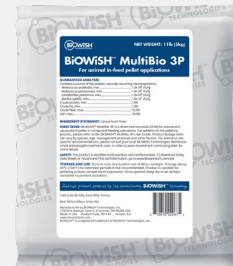
BiOWiSH® MultiBio 3P is a DFM that is recommended for use in poultry operations. It can be added to pelleted and extruded feeds.

BiOWiSH® MultiBio 3P is effective for all stages of growth. This study followed BiOWiSH recommended best management practices by beginning BiOWiSH® MultiBio 3P supplementation at the day of hatch and maintaining the optimum concentration of BiOWiSH® with each feeding.

#### Implementation Program

Straight-run broilers (Ross 508) were obtained from a commercial hatchery on the day of hatch (day 0) and spray vaccinated for coccidiosis with Coccivac®-B. Chicks that appeared healthy were assigned to experimental treatment and 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	-	12	27	324
BiOWiSH® MultiBio 3P	pellet	0.5	12	27	324
Total animals per trial					648

Table 1: Treatment group distribution

Diet programs were formulated according to current commercial best management specifications (i.e. starter, grower, finisher). Corn-based diets typical to that of commercial US poultry operations were fed with or without the addition of BiOWiSH® MultiBio 3P. For BiOWiSH® supplemented birds, BiOWiSH® MultiBio 3P 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 animals were provided *ad libitum* access to fresh water and their assigned 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 seven to provide a mild challenge of low levels of coccidian, *E. coli*, *Salmonella*, and *Clostridia*.

## Results & Discussion

BiOWiSH® MultiBio 3P treatment resulted in significant improvements in body weight gain, FCR and digestibility when compared with the control diet.

Birds fed BiOWiSH® MultiBio 3P with their diets showed a 2.05% improvement in weight gain and a 3.5% improvement in FCR at 42 days over control birds.

Treatment group	Day 42 body weight (lb)	Day 42 body weight (kg)	Day 42 FCR* (weight/weight)
Control	5.07	2.3	1.887
BiOWiSH® MultiBio 3P	5.176	2.348	1.821

Table 2: Body weight and feed conversion ratio at the conclusion of the study

\*FCR are adjusted by weight and mortality.

Body weight is the average weight per bird.

Increased digestibility was also observed in birds receiving the BiOWiSH® MultiBio 3P supplemented diet. BiOWiSH® treated birds had significantly lower apparent digestibility values for carbohydrate (10.16%), digestible energy (6.11%), metabolizable energy (6.2%), and total digestible nutrients (6.05%). Improved digestibility and FCR allows birds to achieve target weights faster.

Overall, BiOWiSH® MultiBio 3P improved broiler weight gain and feed efficiency when added to a corn based pelleted diet typical of commercial US broiler diets. Broiler chickens with BiOWiSH® supplemented diets had a larger average body weight supported by improved digestion and FCR.

In conjunction with previous studies, these results highlight the consistency of benefits of BiOWiSH® MultiBio 3P in a variety of feed types, environments, and stress conditions.

In particular, this study has significant commercial implications for poultry producers in the US. BiOWiSH® MultiBio 3P represents an opportunity to increase growth, allowing poultry operations to meet more customer demand and maximize profit.



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