

## BiOWiSH® MultiBio 3PS

### Broiler Chickens Virginia Diversified Research Corp.

BiOWiSH® MultiBio 3PS improves weight gain and nutrient utilization when added to drinking water

#### 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 and feed types or, in this case, application methods. 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 3PS were studied when added to drinking water and given to broiler chickens.** BiOWiSH Technologies partnered with Michael D. Sims, president of Virginia Diversified Research Corp. (VDRC), to demonstrate the benefits of adding BiOWiSH® MultiBio 3PS to broiler diets. The study was conducted over the span of 42 days in Harrisonburg, Virginia.

This is one in a series of studies done with VDRC to show consistency of results. Previous studies show BiOWiSH® MultiBio 3P, BiOWiSH's DFM formulation for feed manufacturing, increases feed efficiency and improves weight gain for broiler chickens when added to feed.

#### Objectives

The objective of this study was to determine the benefits of BiOWiSH® MultiBio 3PS when delivered through the drinking water of broiler chickens. This study examined broiler weight gain and nutrient utilization, indicated by the feed conversion ratio (FCR), for broilers on a typical Australian commercial broiler diet.

#### Solution

BiOWiSH® MultiBio 3PS is a DFM that is recommended for use at all growth stages in poultry and other animal production operations. It can be added to animal mash feeds, animal liquid feed, total mixed or bunk rations, compound feeds, and dispersed into animal drinking water.

This study followed BiOWiSH recommended best practices by beginning BiOWiSH® MultiBio 3PS supplementation at the day of hatch and maintaining proper concentrations by adding more BiOWiSH® with each feed addition. Dosage was targeted at 200 grams per ton of feed, in accordance with the best management practices.

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

### BiOWiSH® MultiBio 3PS



- Highly efficient and fast acting
- Effective for all animal types
- Performance results in a leading return on investment

#### Available Sizes

- 100g/3.5oz
- 1kg/2.2lbs
- 5kg/11lbs
- 10kg/22lbs

## Implementation program

Straight-run broiler chicks (Ross 508) 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 this time were assigned to either experimental treatment or control groups based on placement weight.

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 3PS	Pellet	0.2	20	30	600
Total animals per trial					1200

Table 1: Treatment group distribution

Birds in both group were fed diets typical of Australian commercial poultry operations, comprised of wheat, milo, and soy meal.

All broilers were provided free access to water and treatment diets throughout the duration of the study. For treatment birds, BiOWiSH® MultiBio 3PS was supplemented via the drinking water at a rate equivalent to 200 grams per metric ton of feed.

Birds 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. 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*. Lighting, temperature, and ventilation conditions were monitored daily.

## Results & Discussion

Broilers on the BiOWiSH® MultiBio 3PS treatment showed significant improvement in body weight gain, FCR, and, as a result, nutrient utilization when compared to control group birds.

BiOWiSH® MultiBio 3PS yielded a 1.5% improvement in weight gain and a 4.4% improvement in FCR at 42 days over those in the control group, as shown in Table 2.

Treatment group	Day 42 body weight (kg)	Day 42 FCR*
Control	2.073	1.847
BiOWiSH® MultiBio 3PS	2.105	1.766

Table 2: Body weight and FCR values at conclusion of the study

\*FCR is adjusted by mortality and weight.

Body weight is the average weight per bird.

Birds receiving BiOWiSH® MultiBio 3PS also had significantly lower relative digestibility values (RDV) than control birds. This indicates improved digestion and increased nutrient utilization with BiOWiSH® MultiBio 3PS, which supports birds achieving target weights faster.

From these results, it can be concluded that BiOWiSH® MultiBio 3PS delivered via drinking water increases the average body weight per bird and improves nutrient utilization, as measured by FCR. It is effective for broilers on a range of diets, including the wheat, milo, and soy meal diets characteristic of Australian commercial poultry operations. Previous studies conducted by Texas A&M University and VDRC showed comparable results when broiler diets were supplemented with BiOWiSH® MultiBio 3P. In each case, the addition of BiOWiSH® yielded improved FCR.



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