

Technical Bulletin

Information from Phibro Technical Services

Update on the Effectiveness of Magni-Phi® Ultra Nutritional Specialty Product

Magni-Phi Ultra nutritional specialty product is a more concentrated form of Magni-Phi, containing a minimum of 8% total saponins. As a result of doubling the saponin content in Magni-Phi Ultra, smaller amounts of product are needed for each ton of feed in order to achieve the desired feeding level. Previous testing with this more concentrated formula demonstrated

Magni-Phi Ultra was effective in improving intestinal/gut health of birds which led to improved weight gain and feed conversion. In addition, in previous testing, birds fed Magni-Phi Ultra showed decreased mortality when reared under intestinal disease challenge. Data contained in Table 1 were presented in a previous technical bulletin on the Magni-Phi Ultra product.

Table 1. The Effects of Graded Levels of Magni-Phi Ultra on 42-Day Performance and Mortality of Coccidiosis-Vaccinated Broilers Reared Under Enteric Disease Challenge¹

Magni-Phi Ultra		Body Weight Gain (g)	Feed Conversion (g:g)	Total Mortality (%)
(g/ton)	(lb/ton)			
0	0	2,264 ^c	1.902 ^a	7.13 ^a
113.5	1/4	2,435 ^b	1.804 ^b	2.33 ^b
227.0	1/2	2,504 ^{ab}	1.780 ^{bc}	1.44 ^c
340.5	3/4	2,577 ^a	1.760 ^c	0.84 ^c

¹Data are the results of two pooled floor pen trials. Enteric challenge was produced by commercial broiler litter taken from Delmarva farms that experienced coccidiosis and necrotic enteritis. Equal amounts of commercial litter were placed in each pen. Means within each column were separated by Fisher's LSD; means in columns with different superscripts are significantly different ($P < 0.05$).

Since the commercial introduction of Magni-Phi Ultra into U.S. broiler production, additional testing of the product has taken place. Table 2 shows the results of an additional trial intended to compare the results of broilers raised in the absence of challenge under clean environmental conditions to intestinal-disease-challenged broilers fed without and with Magni-Phi Ultra in the formulation. The treatments used in the trial were:

1. Unchallenged Control (UC) — broilers were fed no additives of any type and reared on new litter where no intentional disease challenge was imposed.
2. Challenged Control (CC) — broilers fed without additives were reared on used litter known to contain multiple *Eimeria* species and spores of *Clostridium perfringens* (see Table 1 for details).

3. Magni-Phi Ultra and Challenged (MPu) — broilers reared as in treatment 2 but fed Magni-Phi Ultra (113 g/ton).

Specialized pen dividers were used to limit cross contamination between challenged and unchallenged pens. All broilers in the test were grown for 42 days and were hatchery-vaccinated for coccidiosis with Coccivac® B52. The trial used a randomized complete block design with 12 blocks. Pens contained 52 Ross 708 broilers at the start of the study.

By comparing the UC to the CC controls (Table 2), it is clear that the coccidia and bacteria present in the challenged litter adversely affected all performance parameters and increased total mortality of birds reared under these conditions. But under these same

conditions, inclusion of MPu significantly improved all performance variables and total mortality compared to the CC groups. In addition, Body Weights and Average Daily Gain (ADG) for the MPu group were significantly greater than those of the UC group. Feed Conversion values were statistically equivalent when UC was compared to the MPu group. While mortality rates and European Poultry Efficiency Factor (EPEF) for MPu-fed broilers were significantly improved compared to the CC group, these values were equivalent to or different from those of the UC group (EPEF and mortality, respectively).

The results presented in Table 2 show the effectiveness of Magni-Phi Ultra during intestinal disease challenge and are consistent with previous reports on this formulation. Since Magni-Phi Ultra has been used in commercial broiler production in the United States, hundreds of millions of broilers have received this formula. Broiler companies using the product have reported improved intestinal health leading to improved bird performance and lower mortality, responses that are consistent with the original Magni-Phi formula. As with Magni-Phi, the Magni-Phi Ultra formulation is earning its place as an effective, reliable and flexible product for improving the intestinal health of broilers.

Table 2. Forty-two Day Performance and Mortality of Unchallenged and Challenged Broilers as Affected by Magni-Phi Ultra¹

Treatment	Body Weight (g)	Average Daily Gain (g)	Feed Conversion (g:g)	Total Mortality (%)	EPEF ²
Unchallenged Control (UC)	2,668 ^b	63.5 ^b	1.834 ^b	0.35 ^c	337 ^a
Challenged Control (CC)	2,487 ^c	59.2 ^c	1.929 ^a	7.29 ^a	272 ^b
Challenged Magni-Phi Ultra (MPu) 113 g/t	2,757 ^a	65.6 ^a	1.797 ^b	3.82 ^b	340 ^a

¹Unchallenged broilers were raised on clean new litter and were not intentionally exposed to any disease organisms. Challenged birds were reared on used litter containing coccidial oocysts and bacteria originating in commercial broiler operations. Means within each column were separated by Fisher's LSD; Means in columns with different superscripts are significantly different ($P < 0.05$).

²EPEF = European Production Efficiency Factor.

This information has been prepared for industry technical professionals.