

TECHNICAL SERVICE



BULLETIN



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NEW BIOGRO SUPER INCREASES BROILER PROFITS

The original **BIOGRO SUPER** is a 54% protein supplement with a nutrient profile similar to high-quality fishmeal. Commercial producers of meat and eggs, as well as university researchers, consistently report 1 kg of 54% **BIOGRO SUPER** can replace 2 kg of fishmeal, with equal or better animal performance, and with greater farm profits (Bulletins 265, 281, 283 and 291).

Now Dawe's Laboratories has improved **BIOGRO SUPER**: First, by raising the protein level to 70% and second, by formulating one 70% **BIOGRO SUPER** particularly for poultry (product code 5030P), and another 70% **BIOGRO SUPER** especially for pigs (Code 5030S). Each product is *species-specific*, with a more efficient allocation of nutrients. Each includes the same high-quality ingredients as in the original 54% product, and with a lower cost per kg of protein.

The new 70% **BIOGRO SUPER** for poultry (Code 5030P) was tested at the Dawe's Laboratories Biotest Research Center in Fort Dodge, Iowa. The results were consistent with previous results for the original 54% **BIOGRO SUPER**. In this six-week test, broilers grown on 70% **BIOGRO SUPER** gained 8.50% more than broilers fed only a corn-soybean meal control ration, and 1.72% more liveweight than birds fed a fishmeal ration.

BIOGRO SUPER broilers were also more feed efficient: Feed/gain was 8.37% lower than birds fed only the corn-soy ration, and 1.68% lower than broilers grown out on a fishmeal diet. On the basis of 10,000 broilers, the **BIOGRO SUPER** birds yielded \$1,055 more profit than birds grown out on the corn-soy feed, and \$284 more profit than the fishmeal-fed broilers.

MATERIALS AND METHODS

One-day old Ross x Ross male broiler chicks were individually allotted to replicate groups of approximately equal weight. There were 9 replicates per treatment, with 5 chicks per replicate. The chicks were grown in cages and offered feed *ad libitum*. A starter ration was fed the first 21 days of the test, and a grower ration then was fed for the final 21 days. The calculated nutrient values of each treatment ration were identical:

	Protein %	Calcium %	Phosphorus %	Methionine & Cystine %	Lysine %	Metabolizable Energy (kcal/kg)
			(Available)			
STARTER	22.50	0.98	0.45	0.90	1.25	3100
GROWER	19.50	0.85	0.42	0.82	1.10	3197

The four treatments differed by amounts of 70% **BIOGRO SUPER** and menhaden fishmeal:

STARTER DIET	CORN-SOY	FISHMEAL	BIOGRO S.	FISH/BIOGRO S.
FISHMEAL	0%	3.5%	0%	1.75
BIOGRO SUPER	0	0	1.75	0.875
GROWER DIET	CORN-SOY	FISHMEAL	BIOGRO S.	FISH/BIOGRO S.
FISHMEAL	0	2.0	0	1.0
BIOGRO SUPER	0	0	1.0	0.5

RESULTS AND DISCUSSION

Broilers fed 70% **BIOGRO SUPER** responded similarly to broilers fed 54% **BIOGRO SUPER**: They gained more weight; they were more feed efficient; and they were more profitable than broilers fed twice as much fishmeal. The attached chart summarizes the results.

During the initial Starter Phase (0-3 weeks), the results were strongly significant ($P < .01$) for all treatments. While fishmeal alone outperformed 70% **BIOGRO SUPER** both were superior to the corn-soy ration. The treatment combining 70% **BIOGRO SUPER** with fishmeal performed best of all, with 3-week old broilers weighing 187.7 gm more than birds fed the basal diet. 70% **BIOGRO SUPER** combined with fishmeal produced 4.82% more weight than fishmeal alone.

In the Grower Phase (3-6 weeks), 70% **BIOGRO SUPER** outperformed all other treatments, with broilers gaining 1410.3 gm per bird (2.82% more than the control diet; 5.72% more than the fishmeal ration; 2.52% more than the combination of fishmeal and 70% **BIOGRO SUPER**).

The entire 6-week study is summarized in “**STARTER + GROWER PHASES.**” The combination of 70% **BIOGRO SUPER** and fishmeal was best for weight gain, feed efficiency, and profits. Results for 70% **BIOGRO SUPER** improved on fishmeal only: Birds fed 70% **BIOGRO SUPER** gained 1.72% more than fishmeal-fed broilers (1970.4 gm vs 1937.0 gm), and feed/gain was 1.68% better for 70% **BIOGRO SUPER** birds vs. those receiving fishmeal.

On the basis of 10,000 broiler chicks, there was \$1055.55 more profit from birds fed 70% **BIOGRO SUPER** vs. broilers fed the corn-soy ration. Every \$1.00 of increased feed cost from **BIOGRO SUPER** yielded \$4.43 more meat (“**BENEFIT:COST**”). Profits were even greater when **BIOGRO SUPER** was combined with fishmeal, and lower when fishmeal was fed alone.

Like 54% **BIOGRO SUPER**, the new 70% **BIOGRO SUPER** outperforms both corn-soy rations and fishmeal rations. Results have improved with 70% **BIOGRO SUPER**, due to its reformulation *specifically* for broiler chicks. Not only is the plane of nutrition now higher; the cost of protein is about \$0.30/kg less in 70% **BIOGRO SUPER**.

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70% BIOGRO SUPER: 6-WEEK BROILER TEST, WITH AND WITHOUT FISHMEAL

	CORN-SOY	FISHMEAL	BIOGRO S.	FISH/BIO. S.	
		STARTER PHASE			
GAIN/BIRD gm	444.4	603.0	560.1	632.1	
FEED/BIRD gm	867.0	973.2	947.6	1032.5	
FEED CONVERSION	1.95	1.61	1.69	1.63	
\$FEED COST/MT	168.66	177.69	176.42	176.95	
\$FEED COST/BIRD	0.1462	0.1729	0.1672	0.1827	
		GROWER PHASE			
GAIN/BIRD gm	1371.5	1333.9	1410.3	1375.6	
FEED/BIRD gm	2604.5	2466.7	2504.3	2438.4	
FEED CONVERSION	1.90	1.85	1.78	1.77	
\$FEED COST/MT	154.69	164.55	164.80	164.63	
\$FEED COST/BIRD	0.4029	0.4059	0.4127	0.4014	
		STARTER + GROWER PHASES			
GAIN/BIRD gm	1815.9	1937.0	1970.4	2007.7	
\$MEAT VALUE kg	0.882	0.882	0.882	0.882	
\$MEAT VALUE	1.6016	1.7084	1.7379	1.7708	
FEED/BIRD gm	3471.5	3439.8	3451.9	3470.9	
FEED CONVERSION	1.91	1.78	1.75	1.73	
\$FEED COST/BIRD	0.5491	0.5788	0.5799	0.5841	
\$SPROFIT: MEAT-FEED	1.0525	1.1296	1.1580	1.1867	
\$SPROFIT INCREASE		0.7771	0.1056	0.1342	
\$SPROFIT INCREASE		771.49	1,055.55	1,342.46	Per 10,000 broilers
BENEFIT: COST		3.60	4.43	4.84	