

EFFECT OF A FOOD SUPPLEMENT WITH AMAFERM® ON DOGS

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Supplementation of pregnant and nursing dogs with AMAFERM, along with their pups at 4 to 8 weeks of age, resulted in improvements in whelping weights and a trend for more pups weaned.

SUMMARY

DOSE OF AMAFERM USED

0.2g per head, per day

Previous clinical research on dogs had shown the greatest response to AMAFERM was when they were suffering from nutrition-related problems. The females used in this trial were healthy, parasite-free breeding stock from a commercial laboratory, housed in a controlled environment and fed the same diet. Animals in the BioZyme® (AMAFERM) group tended to out perform controls at every stage of the trials in terms of weight maintenance, live births, stillbirths, puppy survival, puppy growth (except the female beagles), clinical indicators, and the results of the proximate analysis. However, most of these responses were not significant. The pattern of consistent results across the trials supports the hypothesis that supplementation with AMAFERM was associated with improvement of health in the study population. Potential applications include areas of growth (pups were larger at birth and grew more); nutritional therapy (diarrhea diseases, parasite infestations, stressful situations); and reproduction (average number of pups weaned).

PROTOCOL

Type of Animals/Experimental Units

- Beagles and mongrel dogs

Number of Animals/Experimental Units

- 36 female dogs



PROTOCOL (CONTINUED)

Trial Design

- Dogs were initially blocked by historical breeding category (good, medium, poor), age, reproductive status, and dog breed (beagle or mongrel). The first three females in each block to show signs of estrus were assigned randomly to one of the three treatment groups, and each female within a block was assigned the same stud for breeding

Treatments

- BioZyme: Full supplement containing AMAFERM
- Vitamin/mineral portion of supplement without AMAFERM, which was combined with control to improve statistical efficiency for reporting
- Control - No supplement

Diet Information

- High quality commercial laboratory diet. Food was top-dressed daily with supplement. At four weeks of age, puppies also received solid food supplemented in a manner similar to the dams' diet, i.e., same supplement at the same rate (one teaspoon per 10 lbs. of total litter weight)

Data Collection

- Skin and hair grading, weight on pups and dams, litter size, mortality, hematology and serum chemistry, stool consistency (loose or firm), food wastage and intake. Nutrient absorption/utilization was conducted for three days post-weaning

DISCUSSION OF RESULTS

- Health status of the three groups at trial onset was not significantly different using blood chemistry variables and skin and hair grading (data not shown)
- Dogs fed full supplement with AMAFERM were improved for all whelping variables including live births, stillbirths, and the birth weight of the pups. Because there were no apparent differences between the controls and the group receiving vitamin/mineral only, the treatments were combined to improve statistical efficiency (Table 1)
- The group receiving AMAFERM outperformed the controls in all weaning indicators numerically (Table 2)
- Total weight gain in pups was improved by AMAFERM in 3 out of 4 groups, although both mongrel and beagle males showed a greater response than females. The beagle females showed no difference in gain (Table 3)
- On average, the pups supplemented with AMAFERM gained 145g more than the control pups



DISCUSSION OF RESULTS (CONTINUED)

- Females fed AMAFERM showed better absorption/utilization for nitrogen, fat, and carbohydrates – but only the nitrogen utilization was significant at $P < 0.05$ (data not shown)
- Based on the results of nitrogen utilization, animals were classified as being in a positive or negative nitrogen balance. A higher proportion of the AMAFERM-supplemented dogs were in a positive nitrogen balance (Table 4). The AMAFERM group also consumed more food during the three-day collection period (Table 5)
- Hair and skin grading showed animals in all groups to be in good health (data not shown)

Table 1 <i>Whelping indicators expressed as mean value per female (n = 36).</i>	AMAFERM (n = 12)		Controls (n = 24) ¹	P-value
	Hb²	79.8	74.1	0.013
	Weight²	115.8	109.1	0.042
	PCV²	79.6	76.7	0.090
	Live Births	6.7	6.4	0.381
	Still Births	0.17	0.63	0.230
	Congenital Anomalies	0.42	0.00	0.006

¹Groups 2 and 3 combined

²As a percent of initial value at time of proestrus

Table 2 <i>Weaning indicators expressed as mean per female (n = 36).</i>	BioZyme (n = 12)		Controls (n = 24) ¹	P-value
	Hb²	86.6	83.9	0.414
	Weight at Whelping²	122.4	114.0	0.072
	Weight at Weaning³	106.1	104.1	0.219
	# of Pups Weaned	5.3	4.4	0.140
	# of Pups deceased	1.4	2.0	NA

¹Groups 2 and 3 combined

²As a percent of initial value at time of proestrus

³As a percent of value at time of whelping



Table 3 Mean total weight gain of pups in grams (n = 168).	BioZyme (n = 12)		Controls (n = 24) ¹	P-value
	Male Mongrels (32)	2373	2029	0.034
	Female Mongrels (24)	2070	1963	0.412
	Male Beagles (58)	1610	1461	0.092
	Female Beagles (54)	1478	1480	NA
	Weighted Average	1791	1646	--

¹Groups 2 and 3 combined

Table 4 Nitrogen Balance	BioZyme (n = 12)		Controls (n = 24) ¹
	Positive	8	11
	Negative	4	10
	Totals	12	21

¹Groups 2 and 3 combined

Table 5 Mean food consumption in grams	BioZyme (n = 12)		Controls (n = 24) ¹	Total
	Mongrels	1267	916	0.236
	Beagles	1072	723	0.084

¹Groups 2 and 3 combined

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