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**Starter Ration Research for Weaner Calves Comparing
Amaferm and Monensin**

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A series of three trials were conducted at "Cal Poly" State University, San Luis Obispo, CA to measure the response of "Amaferm" using a traditional West Coast feedlot starter ration. Earlier research and demonstrations have shown a favorable response with Vita Ferm in initial rations for feedlots and/or warm up and wintering-type rations. The level of stress appeared to influence the 28-56 day response; therefore the "Cal Poly" trials used weaner calves from three different backgrounds.

The purpose of these studies was to elucidate the effect of Amaferm on starter rations for stressed calves. The first two trials compared two levels of Amaferm with and without Monensin. The final study used the best performing level of Amaferm with and without Monensin for 56 vs 28 days.

**Table 1. Design of 28 day study comparing Amaferm with
and without Monensin**

Group	No/Head Per Replicate(a)		Total Head/Group	Treatment
	1	2		
I	16	14	30	Control, no additive
II	16	14	30	Amaferm, 6gm/hd/da + Monensin
III	15	14	29	Amaferm, 9gm/hd/da + Monensin
IV	15	14	29	Amaferm, 6gm/hd/da
V	15	14	29	Amaferm, 9gm.hd/da

Trial 1: 6-13 to 7-11-86; Trial 2: 7-17 to 8-14-86

(a) Each shipment is used as a replicate

Starter Ration:

Upon arrival cattle were fed a mixture of alfalfa and barley hay. For about 5 days in each trial mill feed was top dressed to the long hay in bunk-line feeders.

Cattle were fed twice daily with each treatment top dressed to the morning feeding. Prior to the evening feeding refused feed was removed and weighed back. In addition to the mill ration cattle had access to trace mineral salt blocks.

Background:

The first group of calves were weaned from the "Cal Poly" cow herd. The second group of weaners of about the same weight came from a ranch not too far from the feedlot, while the third group were "sale-barn" calves. The number of sick cattle and stress related problems were not great in the first two groups.

	Worming	Shots	Implants
1st Group	Safeguard	7 Way BRSV 4 Way	Ralgro Synovex C Control
2nd Group	Safeguard	BRSV 4 Way " "	Synovex C
3rd Group	Ivomec	BRSV 4 Way " "	Ralgro

In Treatment:

Table 2. Mill Ration -"#7 Cal Poly".

Ingredient	Per Cent
Roughage Mix	36
Almond Hulls	19
Rolled Barley	22
Beet Pulp Pellets	8
Molasses	12
Cottonseed Crumbles	3.5
Salt (trace mineral pkg)	.5

Results:

Increased feed intake was shown on both levels of Amaferm in comparison to a slight decrease in the Monensin-Amaferm treatments. The lower level of Amaferm with and without Monensin showed a comparable response to the nine gram level. This is in agreement with the Horton Feedlot Research Center feedlot study (1985) where two ounces of Vita Ferm showed superior ($P < .05$) feed efficiency and rate of gain over the three ounce level.

The data does not show any large difference in rate of gain and feed efficiency by treatment. Stress and number of sick cattle were not great and cattle went on feed rapidly. A demonstration study by the University of California (Commercial Mineral Supplements Compared for Wintering Heifer Replacements) showed no response for the first 64 days on heifer calves that had a 49 day pre-treatment period; however the gain response was favorable the next 50 days to Vita Ferm Pasture Mineral.

Amaferm at six grams of premix provides 1.89 grams of Amaferm and at the nine gram level 2.84 grams of Amaferm are furnished. This is the same level of Amaferm contained in two and three ounces of Vita Ferm respectively.

Following the first two studies a third trial was conducted using the lower level of Amaferm (six grams) with and without Monensin at the 30 gram level. Calves from three sale barns were allotted on the basis of body weight and place of origin. A total of five weights were taken during the 56 day feeding period.

The purchased calves arrived in four shipments over a period of one week. Upon arrival the calves were fed a mixture of alfalfa and barley hay and the same feedlot ration as used in the first two studies. In-treatment was also much the same except Ivomec was used for parasite control. Treatment groups are shown in Table Four.

The 56 day data shows no advantage in the combination of Amaferm and Monensin. The Amaferm pen supported the highest daily gain for all treatments but only superior to the control pen in feed conversion.

As in the two earlier studies the Amaferm treatment group had the highest average daily feed intake. Cattle on Amaferm gained more during the first fourteen days giving the final gain advantage. Using the control pen as an index of 100, Treatment II indexed 98, Treatment III, 102, Treatment IV, 105 and Treatment V, 106; all based on average daily gain.

Treatment did not prevent cattle from getting sick; however a large number were treated prior to the study as noted in Table 6. One calf was removed from pen five because of weight loss resulting from cud regurgitation.

The average daily gains and feed conversions were lower for this group of cattle compared to the previous studies. The genetic base may have been an important factor in addition to stress. All cattle receiving Amaferm stayed on feed during periods of sickness and recording above normal temperatures which is the same observation from all three studies.

Table 3. Starter Ration Performance for Weaner Calves - 28 Day Data:

Treatment	No/Head	Ave. Animal Wt.		ADG/Hd	Feed Conversion	Ave. Feed Intake/Hd	Number Sick Calves*
		Initial	Final				
1. Control							
Trial 1	16	628	735	3.80	4.81	18.27	6
Trial 2	14	639	719	2.86	5.97	17.08	4
Average		<u>634</u>		3.36	5.35	17.71	5
2. Amaferm 6 gm ^{18/11/11}							
Monensin 30 gm	16	637	742	3.72	4.75	17.69	3
Trial 1	16	637	728	3.25	4.86	15.79	2
Trial 2	14	<u>637</u>		3.50	4.80	16.80	2.5
Average		637					
3. Amaferm 9 gm ^{9 34/11/11}							
Monensin 30 gm	15	644	754	3.96	4.43	17.50	1
Trial 1	15	638	720	2.91	5.42	15.77	1
Trial 2	14	<u>638</u>		3.45	4.90	16.66	1.0
Average							
4. Amaferm 6 gm							
Trial 1	15	645	752	3.84	4.86	18.64	5
Trial 2	14	642	725	2.96	6.10	18.06	5
Average		<u>644</u>		3.41	5.46	18.35	3.5
5. Amaferm 9 gm							
Trial 1	15	646	751	3.75	5.05	18.94	3
Trial 2	14	642	721	2.85	6.01	17.15	4
Average				3.31	5.51	18.07	3.5

*Respiratory and bloat cases by individual animals.

Table 4. Starter ration performance for weaner calves:
(56 Day Data - 8-20 to 9-30-86)

Trial #3 Treatment	No/Head	Ave. Animal Wt..		ADG/Head	Feed Conversion	Ave. Feed Intake/Hd
		Initial	Final			
1	16	503	629	2.25	8.51	19.17
2	16	503	627	2.21	8.02	17.75
3	15	505	595	2.31	7.91	18.28
4	16	509	641	2.35	7.95	18.73
5	16	500	634	2.40	8.13	19.50

Where Treatment #1 - Control
 #2 - 6 grams Amaferm, 30 grams Monensin
 #3 - 6 grams Amaferm, 30 grams Monensin
 #4 - 30 grams Monensin
 #5 - 6 grams Amaferm

Table 5. Daily gain as shown from 14-28-56 days weights of weaner calves:

Trial #3 Treatment	First 14 days	2nd 14 days	First 28 days	2nd 28 days	Final 56 day
1	3.21	2.45	2.83	1.68	2.25
2	2.87	2.02	2.45	1.97	2.21
3	3.22	1.80	2.51	1.82	2.31
4	3.59	2.03	2.81	1.90	2.35
5	3.75	2.00	2.88	1.92	2.40

Table 6. Animal health-treatment prior & during 56 day trial:

Trial #3 Treatment	Sick Cattle*		Percent Animals** Treated		Number of sick cattle by temperature recording		
	No.	%	Before	During	103°	104°	105°+
1	7	43	31	25	3	2	6
2	8	50	43	31	5	1	5
3	5	33	60	47	1	3	4
4	9	56	31	38	7	4	4
5	9	56	63	19	7	5	5

*Sick cattle: Hoof-rot treatment not included
 **Before test - 14 days; test period - 56 days

EFFECT OF AMAFERM AND MONENSIN ON PERFORMANCE OF WEANER CALVES FED STARTER RATIONS

*Cal Poly State University, San Luis Obispo, CA
D.D. Thorne, J.M. Roberts, F.W. Fox, J.W. Algo.
Abstract - Western Section ASAS, 1987.*

EXPERIMENTAL PROTOCOL

TRIALS 1 & 2

47 Head English crossbred steers (trial 1)

42 Head English x Brahma steers (trial 2)

Cattle originated from 3 locations: Cal Poly herd, local ranch, sale barn.

3 Treatments -

- CONTROL
- AMAFERM (1.9 gm/day)
- AMAFERM (1.9 gm/day) + MONENSIN

Trials lasted 28 days each (6/13 - 7/11 and 7/17 - 8/14)

Ration fed 2x daily - Treatment topdressed A.M.

Sick cattle and stress problems were minimal

TRIAL 3

79 Head English cross steers - 4 origin groups

4 Treatments -

- CONTROL
- AMAFERM (1.9 gm/day)
- MONENSIN
- AMAFERM (1.9 gm/day) + MONENSIN

Trial lasted 56 days (8/20 - 9/30)

Stress and sick cattle numbers were minimal

EFFECT OF AMAFERM AND MONENSIN ON PERFORMANCE OF WEANER CALVES FED FEEDLOT STARTER RATIIONS

TRIALS 1 & 2	CONTROL	AMAFERM	AMAFERM & MONENSIN
Ave. Init. Wt., lbs.	634.00	644.00	637.00
ADFI, lbs.	17.71	18.35	16.80
ADG, lbs.	3.36	3.41	3.50
F/G	5.35	5.46	4.80

TRIAL 3	CONTROL	AMAFERM	AMAFERM & MONENSIN	MONENSIN
Ave. Init. Wt., lbs.	503.00	500.00	504.00	509.00
ADFI, lbs.	19.17	19.50	18.01	18.73
ADG, lbs.	2.25	2.40	2.26	2.35
F/G	8.51	8.13	7.97	7.95

AMAFERM = 1.9 grams/day, Trials 1 + 2 = 28 days, Trial 3 = 56 days.

Thorne et al. 1987.
Abstract from Western Section ASAS.

**EFFECT OF AMAFERM AND MONENSIN
ON DAILY GAIN OF WEANER CALVES FED
FEEDLOT STARTER RATIONS**

DAYS	TREATMENT			
	CONTROL	AMAFERM	AMAFERM & MONENSIN	MONENSIN
0 - 14	3.21	3.75	3.05	3.59
14 - 28	2.45	2.00	1.91	2.03
0 - 28	2.83	2.88	2.18	2.81
28 - 56	1.68	1.92	1.89	1.90
0 - 56	2.25	2.40	2.26	2.35

Thome et al. 1987.
Unpublished data.