



Your All-Natural Solution.

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Calf Studies

Protocol and Land O'Lakes-Joint Calf Study

Evaluation of Protocol Naturals All-Natural Calf Program Compared to a Conventional Medicated Calf Program

60 Purchased Holstein Bull Calves (101 lbs)

Experimental Period: 5 Weeks (Sept 24-Oct 29)

Origin of Calves: Washington (Order Buyer)

Transit Time: 32 Hours from Purchase to Arrival at Research Farm

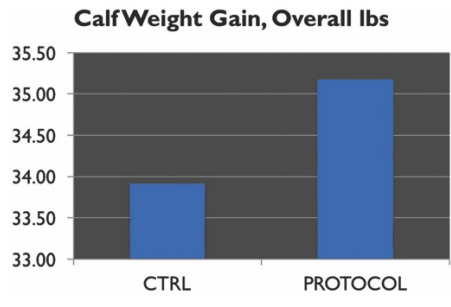
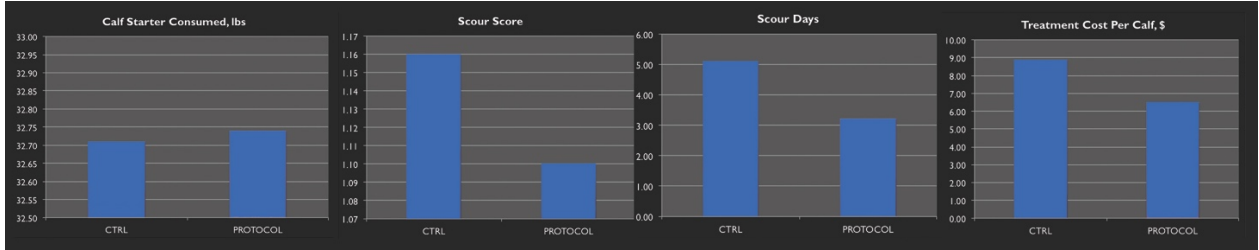
Treatments:

Control-30 head on Conventional Medicated Program with 22:20 medicated milk replacer (250/125 g/ton Neo-Terramycin) and commercial 18% CP Calf Starter

Protocol-30 head on PTI All-Natural Calf Program with 22:20 non-medicated milk replacer with 2g/lb **Bio-Pro Calf Powder** and commercial 18% CP Calf Starter plus treatment calves received an additional 8g Calf Powder on days 1-5 and 10cc **Bio-Pro Bovine Paste** on day 1

Observations:

- Weight Gain Weeks 1-5 and Overall
- Daily Calf Starter Consumption
- Daily Milk Replacer Consumption
- Fecal Score 1-4 with 1=Normal; 2=Loose; 3=Water Separation; 4=3 with Severe Dehydration
- Scour Day: Any Day when the Fecal Score is 2 or Higher



ITEM	CONTROL	PROTOCOL
No. Calves	23	25
ADG, lbs	0.97	1.00lbs
Calf Weight Gain, overall lbs	33.91	35.17
Milk Replacer Consumed, lbs	33.83	34.40
Calf Starter Consumed, lbs	32.71	32.74
Feed Efficiency, lbs feed/lb gain	1.96	1.91
Scour Score	1.16a	1.10b
Scour Days	5.09c	3.20d
Total Electrolyte & Antibiotic Treatment Cost Per Calf, \$	8.86	6.47
Ab P<.10 cd P<.05	\$2.39 savings per calf!	

TSU/Protocol-Joint Calf Study

Location: Tarleton State University, Stephenville, TX

Researchers: Dr. Tim Brown, Fernando Vasquez

Treatments: Control (Antibiotic Milk Replacer with 100g Terramycin per ton)
Protocol (Approximately 7cc **Bio-Pro Bovine Paste** upon arrival, 10g **Bio-Pro Calf Powder**, in milk, per head for 5 days, 2g **Bio-Pro Calf Powder**, in milk, from day 6 through day 29)

Experimental Units: 30 Holstein calves from age 3 days to 29 days

Feeding Program: Free-choice commercial 18% CP calf starter, 22% CP commercial milk replacer containing either Terramycin (control) or **Protocol** (treatment)

Results:

	<u>Control</u>	<u>Protocol</u>
• Feed intake, lb./day	0.54	0.77
• Calves ready for weaning, % at 29 days	21.88	53.85
• Calves eating min. of 1.65 lbs. one day, %	34.38	69.23
• Average daily gain, lb./day	0.41	0.54
• Heart girth difference, inches	2.02	3.12
• Scour days	4.53	3.92
• Scour treatments	3.28	2.69
• Respiratory treatments	2.94	2.69
• Calves positive for Salmonella spp, %Day 1	36.00	23.08
• Calves positive for Salmonella spp, %Day 28	6.25	0.0
• 15 calves per treatment		
• Calves arrived at approximately three days of age and were fed through day 29		
• All calves were provided free-choice access to the same 18% calf starter		
• All calves received a variation of the same milk replacer:		
Control – Antibiotics (Control group received milk replacer with 100g Terramycin per ton)		
Protocol – Bio-Pro Calf Powder		
(Protocol group received 5-7cc of Bio-Pro Bovine Paste per head upon arrival, 10g of Bio-Pro Calf Powder per head per day for 5 days (in milk) and 2g per head per day thereafter)		

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