

Nutritional considerations for preconditioning weaned calves

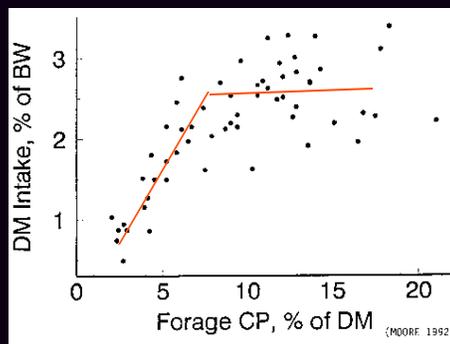
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What's the objective?

- *Early:*
Get the calves to consume some feed
provide protein and minerals
- *Later:*
Provide nutrition to promote some gain, but maintain health status

Nutrition program - Feed

- **Minimize** use of purchased mixed rations
- the cost is generally higher than can be justified
- Use **good quality** forage
- Supply **adequate** amounts of **protein**
- Feed in **troughs** - adapt calves to troughs
- If feeding **antibiotics**, feed at a **therapeutic level or forget it**



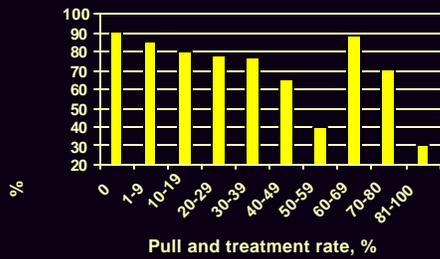
Nutrition program - Feed

- As seen in the previous chart, as the concentration of crude protein (CP) increases, forage intake and therefore energy intake increases
- Make certain protein requirements are met to stimulate feed intake, improve immune system development

Nutrition program - Minerals

- Supply a **complete** mineral supplement **pre- and postweaning**
- What is a complete supplement?
Macro- and trace minerals -
Ca, P, K, Cu, Zn, Se
In adequate amounts

Feedlot pull rate and use of mineral supplement - Ranch to Rail 1995-1996



R. Gill, unpublished

Nutrition program - Minerals

- In the previous slide, as the sickness rate (% pulls) increased, the number of ranches feeding a complete mineral to the cowherd and calves decreased

Nutrition program - Minerals

- Rule-of-thumb -
Supply at least 1/2 of daily trace mineral requirement with supplement
- Deliver free-choice or in hand-fed supplements

Feed Intake by Newly Arrived Calves, % BW Dry Matter

Days post arrival	Healthy	Sick
0 - 7	1.6	0.9
7 - 14	1.9	1.4
14 - 28	2.7	1.8
28 - 56	3.0	2.7

Hutcheson and Cole, 1986

Nutrition program - Feed Intake

- It takes about 2-3 weeks before healthy calves will consume enough to gain weight, unless the feed has a relatively high concentration of nutrients
- mixed feeds are most appropriate early in the weaning period
 extended weaning periods means more sale weight

Nutrient requirements of calves gaining different amounts of weight

Weight	ADG	CP, lbs	TDN, lbs
500	0.5	.98	6.2
	1.0	1.2	7.2
	1.5	1.3	8.1
	2.0	1.5	8.8
600	0.5	1.1	7.2
	1.0	1.3	8.2
	1.5	1.4	9.3
	2.0	1.6	10.1

Protein Intake Required to Correct a Protein Deficiency

%Protein in Supplement	Protein Deficiency, lbs/day		
	.20	.40	.80
16	1.25	2.5	5.0
20	1.0	2.0	4.0
24	.83	1.67	3.33
28	.71	1.43	2.86
32	.63	1.25	2.5
38	.53	1.05	2.10

Dry matter costs (\$/ton) at varied feed moisture levels and As-fed costs (\$/ton)

%	As-fed price, \$/ton				
	30	60	90	140	170
10	33	67	100	156	189
20	38	75	113	175	213
30	43	86	129	200	243
50	60	120	180	280	340
70	100	200	300	467	567

Pricing Supplemental Nutrients vs. Pricing Supplemental Feed

	20% CP 75% TDN	32% CP 75% TDN	38% CP 75% TDN
\$/ton feed	180	215	240
lbs CP/ton	400	640	760
\$/lb CP	0.45	0.34	0.32
lbs TDN/ton	1500	1500	1500
\$/lb TDN	0.12	0.14	0.16

First week

- Feed intake will be depressed
- Provide fresh hay and also some high protein cubes or a milled feed
- Get the cattle used to a trough or feed wagon
- Minimize weight loss

Example ration for 300-600 lb calves

Ingredient	% as-fed
Cottonseed hulls	14.4
Alfalfa pellets	19.6
Rolled corn	51.1
Molasses	4.6
Supplement pellet	10.3
40% CP, 3%Ca, 2% P Vit E, Vit A, Coccidiostat	
CP, %	14.5
TDN, %	81

Example ration for light calves

Ingredient	% as-fed
Cottonseed hulls	29.5
Rolled corn	46.6
Cottonseed meal	17.8
Molasses	4.1
Supplement - minerals, vitamins, coccidiostat	2.0

Second through Seventh Week

- Use medium to high quality forages preferably grazed
- Supplement as necessary to provide the proper nutrients
- Milled feeds must be accompanied by higher daily gains in order to offset the higher costs
Higher gains may be detrimental in marketing later