



Not All Backgrounding Is Created Equal

Why Some Programs are better than
Others!

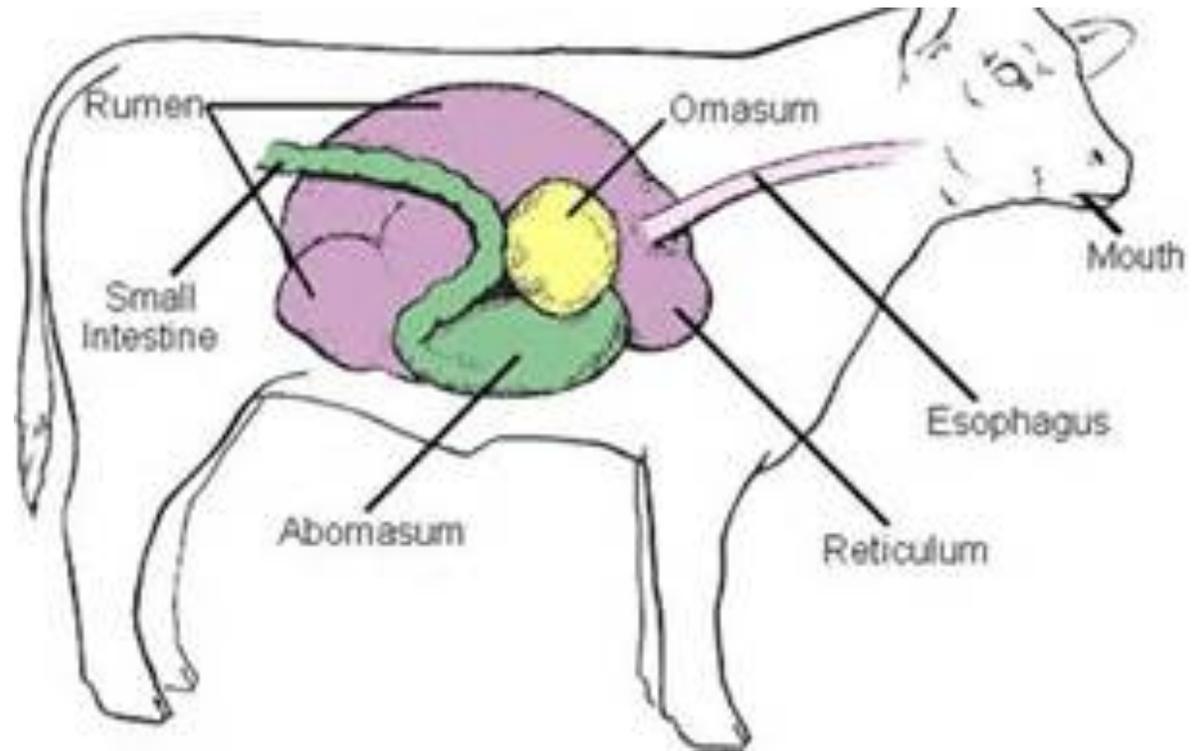
Purpose of Backgrounding

- Weaning
- Aging
- Growing
- Improving Health
- Marketing Commodities
- Marketing Cattle
- Increasing Pounds Marketed
- Understanding your Genetics

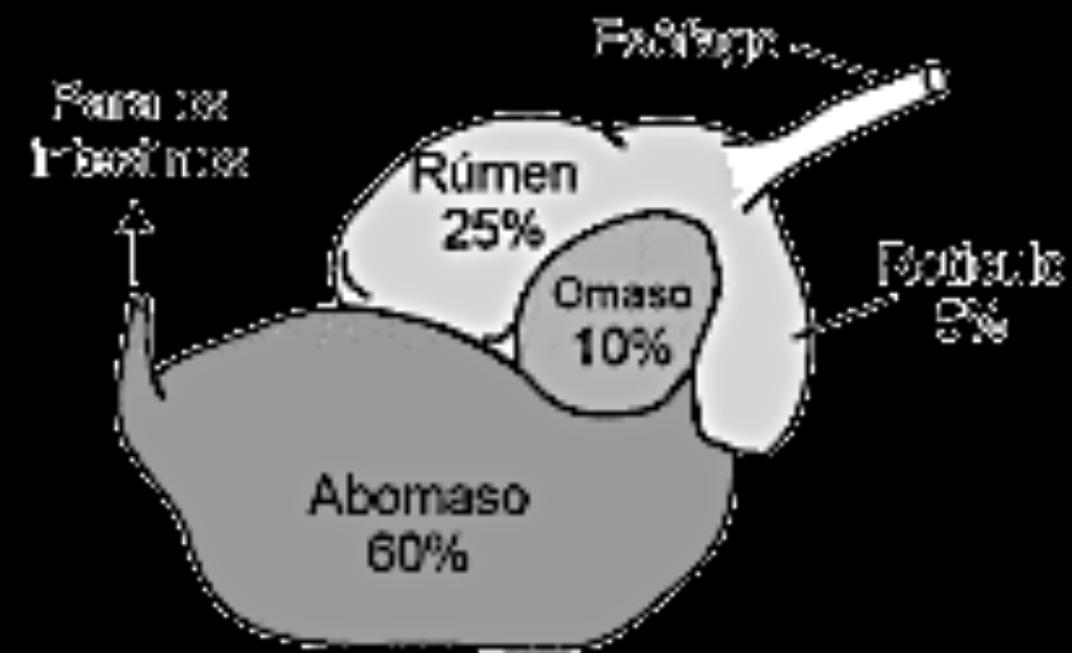


Understanding The Dynamics of Growing Calves

- Rumen Development



Novilha pré-ruminante ao nascimento



Novilha após desmama



Understanding The Dynamics of Growing Calves

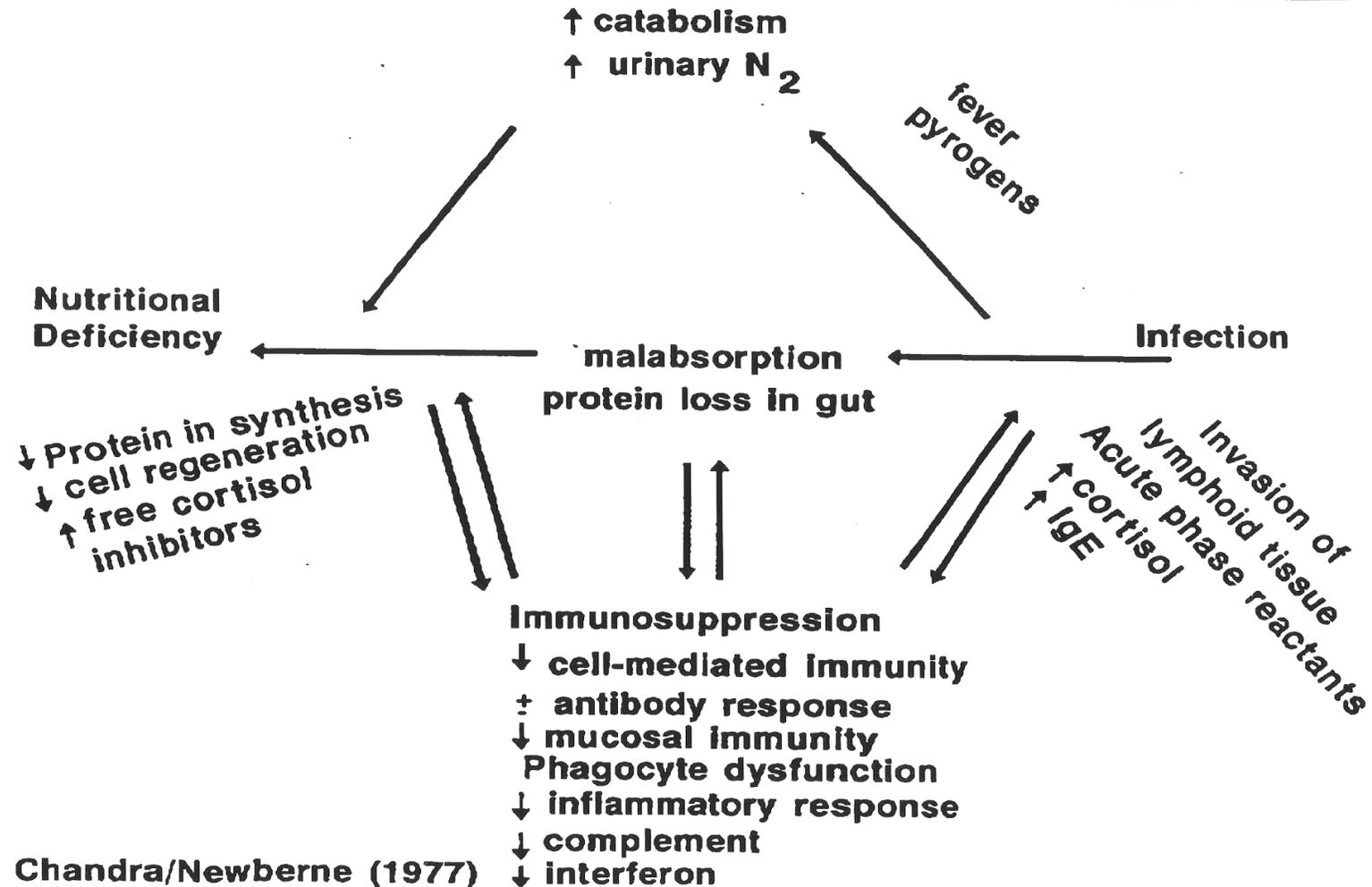
Rumen Development



Understanding The Dynamics of Growing Calves

- Minimize Stress

INTERACTION BETWEEN INFECTION, NUTRITIONAL DEFICIENCY, AND IMMUNOSUPPRESSION



Chandra/Newberne (1977)

Understanding The Dynamics of Growing Calves

- Minimize Stress
- Nutritional Stress

Results Of Stress (Ruminal) After 48 hour Fast

- Almost complete lack of Protozoa
- Bacteria reduced 10 to 25%
- Number of bacteria species reduced
- Fermentation essentially zero
- Response to carbohydrates less than 10% of normal

Performance as Affected by Diet

Kercher (1969)

Item	55% Conc	Alf Hay	Grass Hay
In Weight	427	412	393
14 d ADG	2.6	1.6	1.5
28 d ADG	2.7	1.7	1.9

Response to Diet

Totusek and Stephens 1969

Item	Conc:	90%	35%	0%
14 d ADG		.36	2.14	2.36
28 d ADG		.25	1.46	1.43
F/G		29.6	10.4	10.1

Response to Diet To Diet
Hutcheson 1984

	<u>Hay</u>	<u>Milled Feed</u>
Morbidity%	58.7	42.5
Death Loss%	13.7	2.5

The affect of Concentrate Level

Lofgreen (1983)

Item	20 Conc	50 Conc	75 Conc
Head	175	170	172
In Wt.	369	370	368
Trt. Days	2.5	2.7	3.3
Mortality	8	4	8
DMI	9.5	9.9	9.0
ADG	1.25	1.40	1.47

Morbidity as affected by Concentrate Level

Lofgreen (1983)

Week	20 Conc	55 Conc	90 Conc
1	.55	.65	4.02
2	.62	1.06	7.62
3	.68	1.05	8.12
4	.46	1.03	11.69

Affects of Ruminal Acidosis

- **Founder**
- **Polioencephalomalacia (PEM)**
- **Ruminitis**
- **Hoof problems (laminitis, sole ulcers, sole abscess, etc.)**
- **Poor immune function**
- **Sudden death syndrome**
- **Reduced feed intake**
- **Reduced nutrient absorption**
- **Liver abscesses**
- **Bloat**
- **Clostridial infections**
- **Transient diarrhea (light colored with sweet/sour odor)**
- **High un-explained death loss (or cull rates)**
- **Milk fat depression and poor milk production**
- **Lameness**
- **Moderate rumen distention**
- **Lung hemorrhages**

Item			Corn Silage Treatment		
			0	21 d	42 d
In Wt		664	664	664	
Days on Feed		120	120	120	
Final Wt		1037	1016	1001	
Daily Gain		3.11	2.93	2.81	
Feed/Gain		6.51	6.73	6.89	
Back Fat		0.49	0.46	0.44	
Goedeken et. al. 1989					

			Corn Silage Treatment	
Item		15	45	75/15
In Wt		700	700	699
Days on Feed		153	181	181
Final Wt		1321	1393	1374
Daily Gain		4.02	3.82	3.73
Feed/Gain		5.88	6.18	6.17
Back Fat		0.53	0.60	0.55
Ovinge et. al. 2019				

Intake as Affected by Disease

Dry Matter Feed Intake of Newly Arrived Calves (% of body weight)

Age, days	Healthy (SD)	Diseased (SD)
0-7	1.55 (0.51)	0.90 (0.75)
0-14	1.90 (0.50)	1.43 (0.70)
0-28	2.71 (0.50)	1.84 (0.66)
0-56	3.03 (0.43)	2.68 (0.68)

NOTE: SD, standard deviation. SOURCE: Hutcheson, D.P., and N.A.Cole. 1986.

J. Anim. Sci. 62:555-560.

Affect of Respiratory Treatment on Performance

Gardner (1999)

Item	0	1	>1
Number	102	89	13
In Wt	645	633	645
Final Wt	1151	1128	1095
ADG	3.4	3.3	3.0
HCW	731	719	686
Standard	12.8	12.4	23.1

Item	0	1	>1
21 d Shear Force	2.8	2.9	3.0

Factors Influencing TM Requirements

- Age
- Breed
- Level of production
- Water quality
- Condition of pasture/range

Level of Zinc

- 35 ppm ZnO
- 35 ppm Zinpro
- 70 ppm Zn sulfate
- 70 ppm Zinpro
- Morbidity was reduced by 52% for the 70 ppm treatments.

Galyean et al. (1995)

Timing of Supplement

- Engle (1995) reported that performance is less for Zinc deficient cattle. Immune response measured by skin swelling response to PHA was decreased when cattle were Zinc deficient. Performance and immune function returned following 22 days of repletion. There were no difference between the source of Zinc.

Feedyard/Health/Mineral Status

- Data indicates that Trace Mineral fortification has no effect on cattle that have no deficiency.
- A minimum of 14 to 42 days are required to reestablish needed minerals when deficient.
- Immunity is established during the first several weeks in the feedyard.
- Without proper Trace Mineral supplementation prior to arrival health and performance will be compromised.

Deficient Minerals

- Zn- 63.4% of forage samples from 327 producers from 18 states were deficient (Corah 1996).
- Cu- Over 50% of these samples were marginal to deficient.
- Se- Deficient in the Southeast United States.

Summary

- Stress negatively affects health and performance
- Roughage Level is important in minimizing health issues.
- Acidosis is an issue with starting cattle
- Healthy cattle perform better
- We need to make the feed program and health program work together
- Mineral status and supplementation is important

% of Calves
Eating
Wagner
(1991)

Day	% Eating
1	21.7
2	36.7
3	56.7
4	61.7
5	66.7
6	68.3
7	70.0
8	71.7
9	73.3