

Supplementation for the Cow-Calf Producer

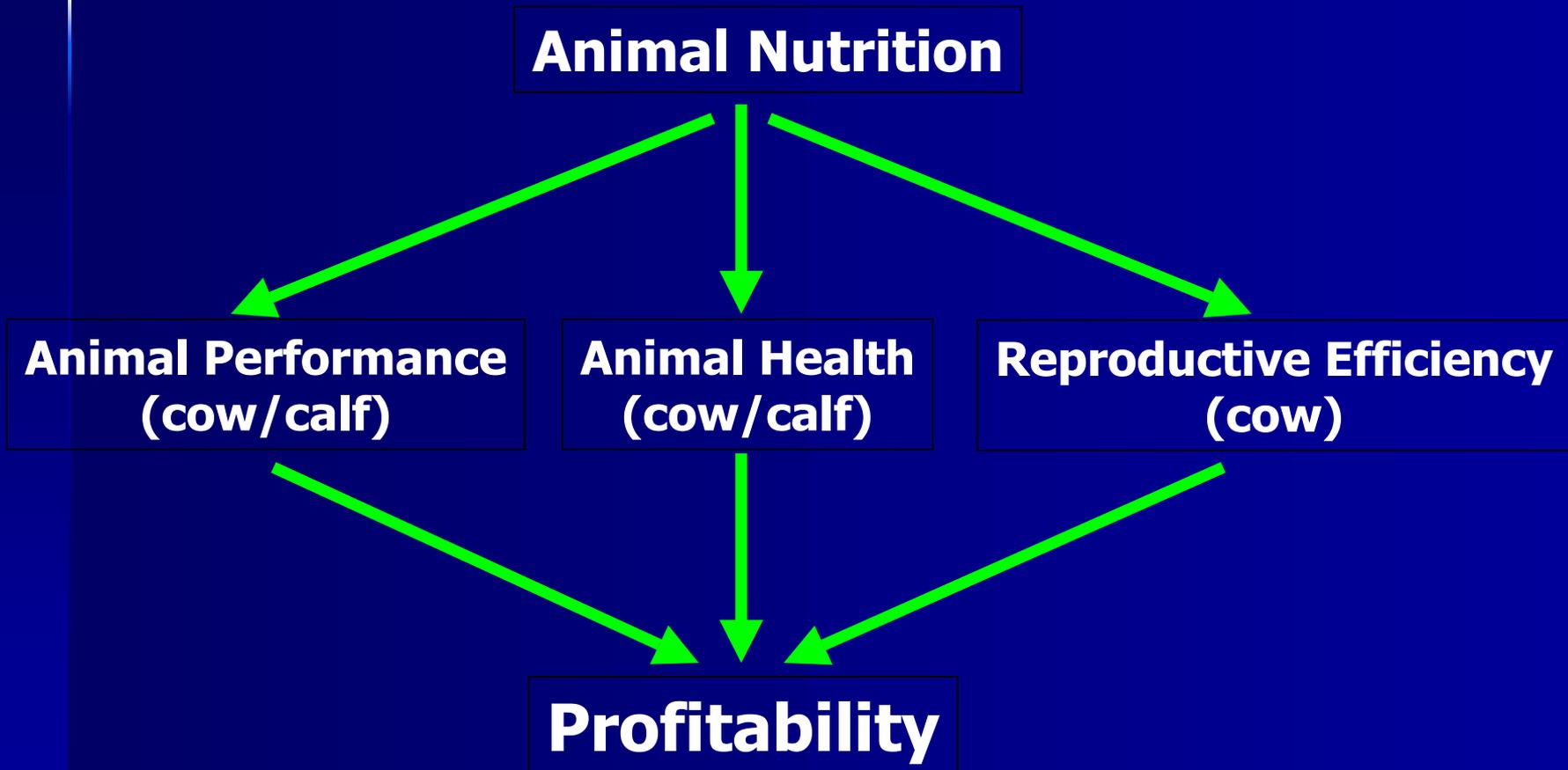


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Why is nutrition important???



Priorities of a Lactating Cow

Calf



Cow's Body Condition



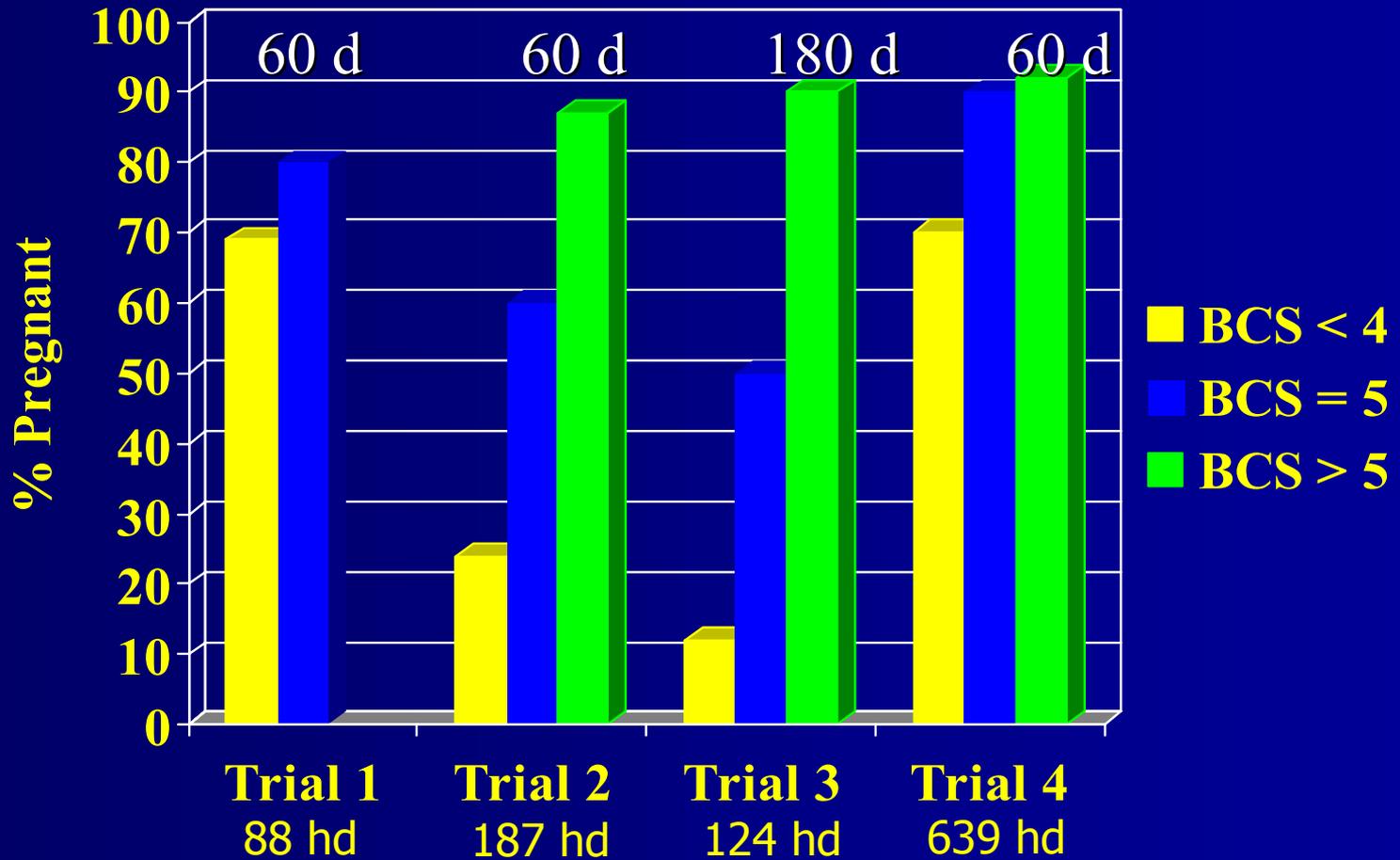
Reproduction

Reproductive efficiency

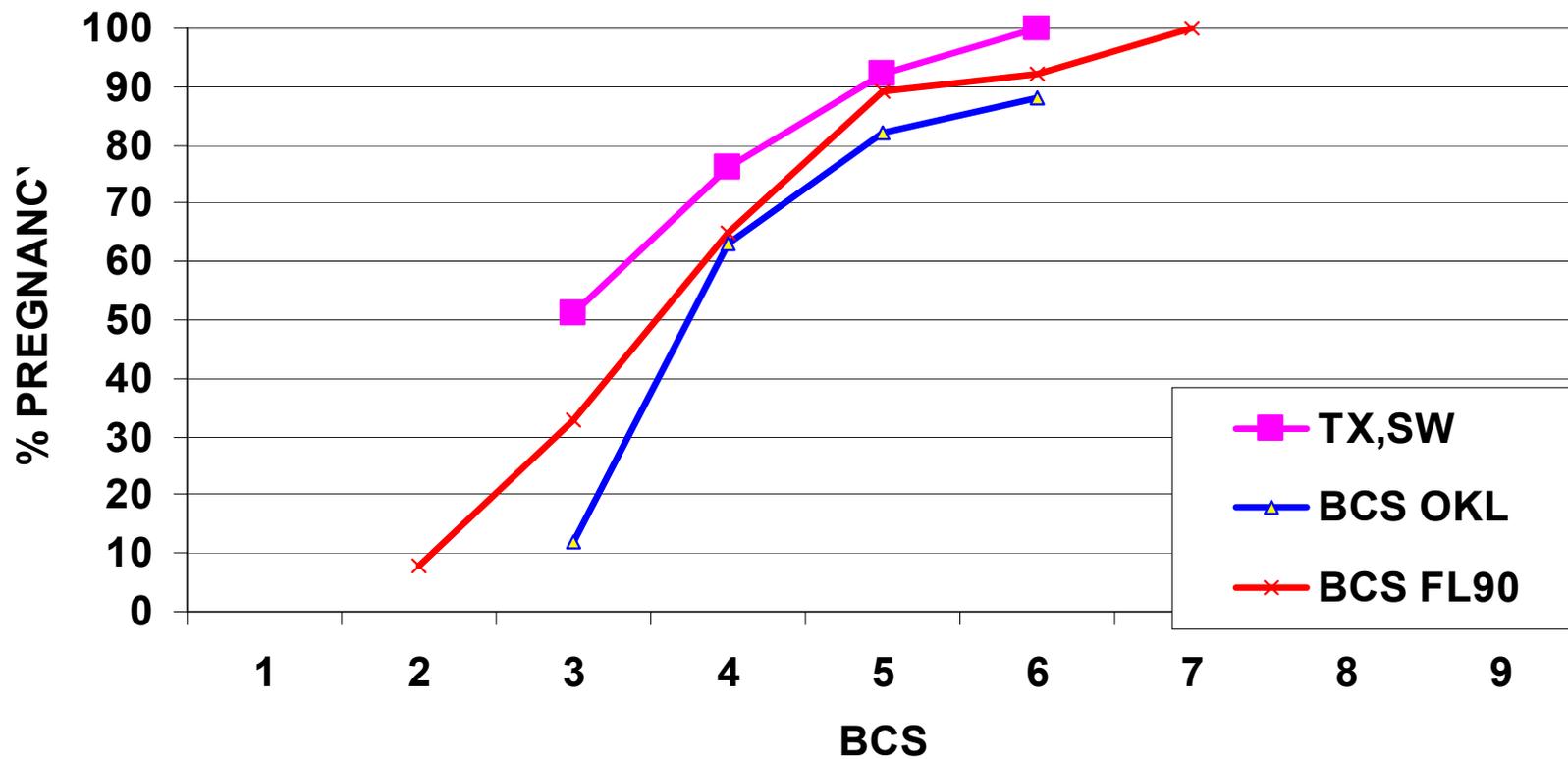
- We know that cattle should be at least a Body Condition Score of ≥ 5 at breeding



Reproductive efficiency



EFFECT OF BODY CONDITION SCORE (BCS) ON % PREGNANCY



Supplementation

- Forages should be the main source of nutrition for cow-calf or stocker producers
 - Economical source of protein and energy



Supplementation

- However.....

- there are times when forages fail to provide an adequate supply of nutrients to meet your production goals

Supplementation strategies

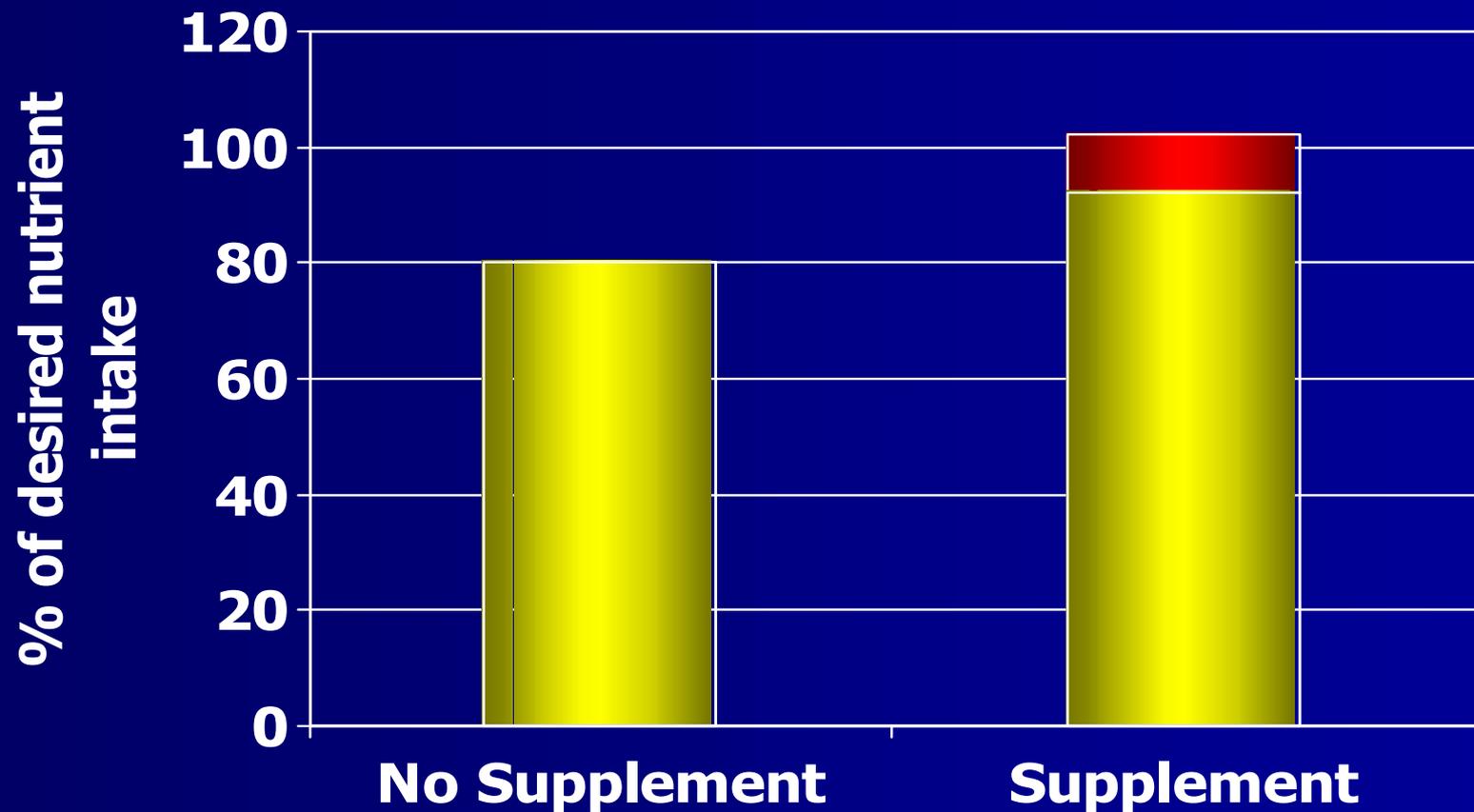
- To provide nutrients deficient in forages that limit forage intake and digestion

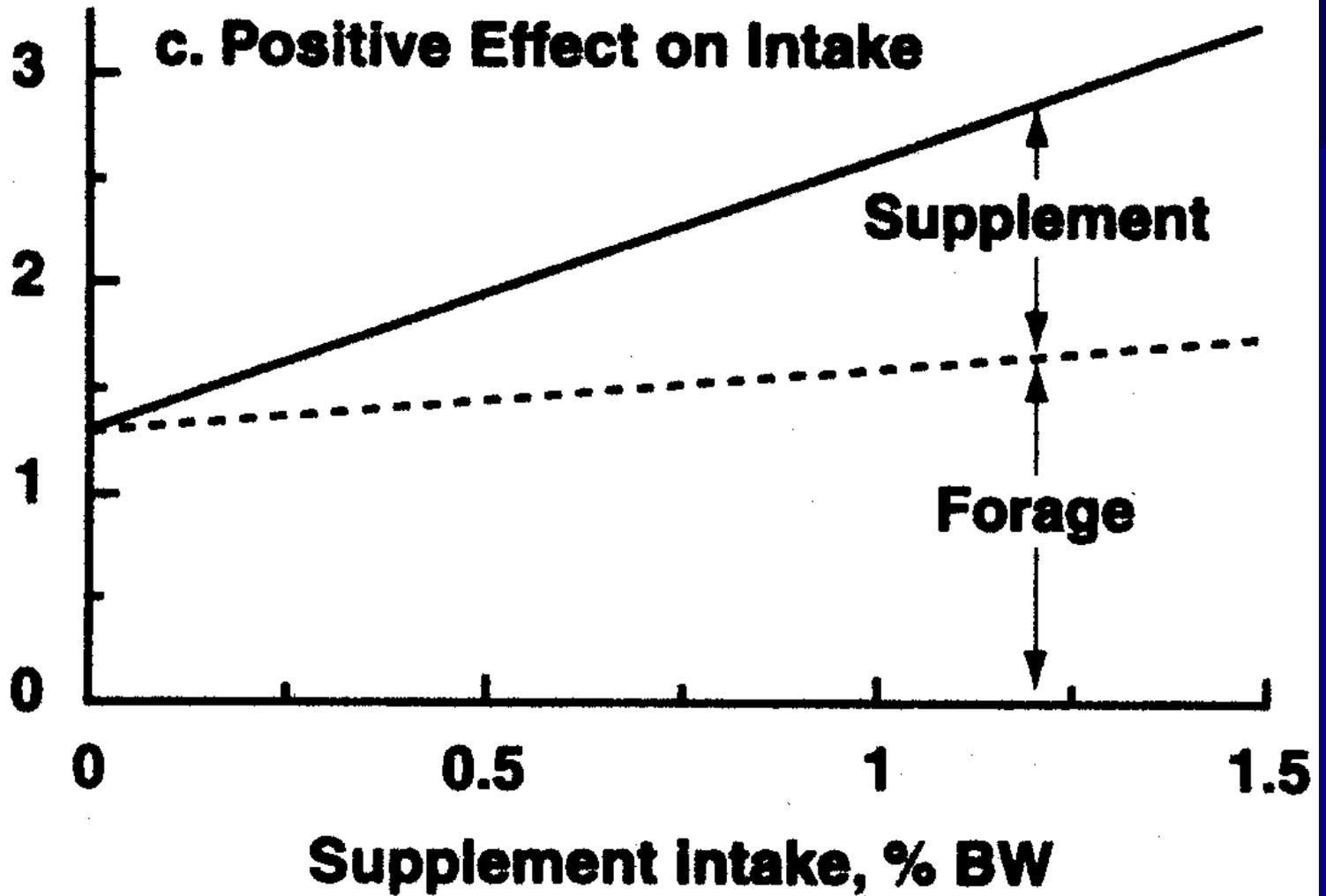


Supplemental Feeding



A small amount of supplement stimulates forage intake and digestibility

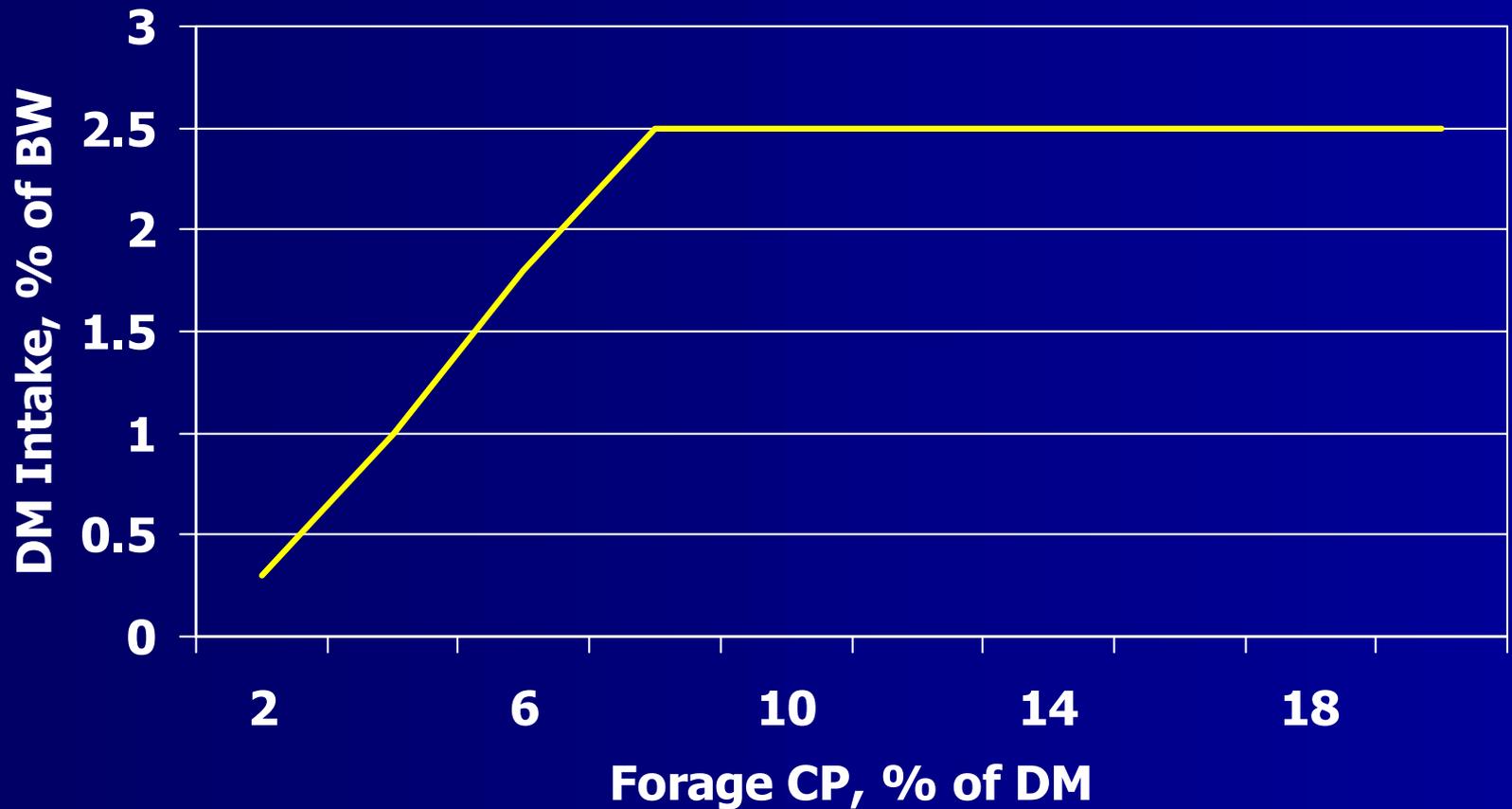




Supplemental Feeding

- Animal intake is usually the limiting factor associated with nutrient deficiencies on dormant forages or poor quality hay
- When the protein content of a forage drops below 7 to 8 percent dry matter intake will decline rapidly

Forage intake in relation to crude protein content in the forage



Impact of protein supplementation on the energy status of a 1,000 lb cow

	Unsupplemented	Supplemented	% change
Forage CP, %	5	5	
Forage TDN, %	45	45	
Supplement CP, %		42	
Supplement TDN, %		76	
Supplement intake, lb	0	1.8	
Forage intake, lb	16	20.8	+30
Total daily intake, lb	16	22.6	+41
% CP in total diet	5	7.9	
TDN intake, lb	7.2	10.7	+49

Supplementation

- Thus, if a forage (or hay) contains less than ~7 percent crude protein
 - Feeding a protein supplement will improve the **protein and energy** status of cattle by improving forage digestibility and intake



Note.....

- Adequate forage is necessary when supplementing protein
 - If not, the protein source becomes an **expensive** source of energy
 - Re-group and explore other alternatives to meet the energy requirements of the animal

Supplementation strategies

- To add to the value of low-quality forage and increase diet quality



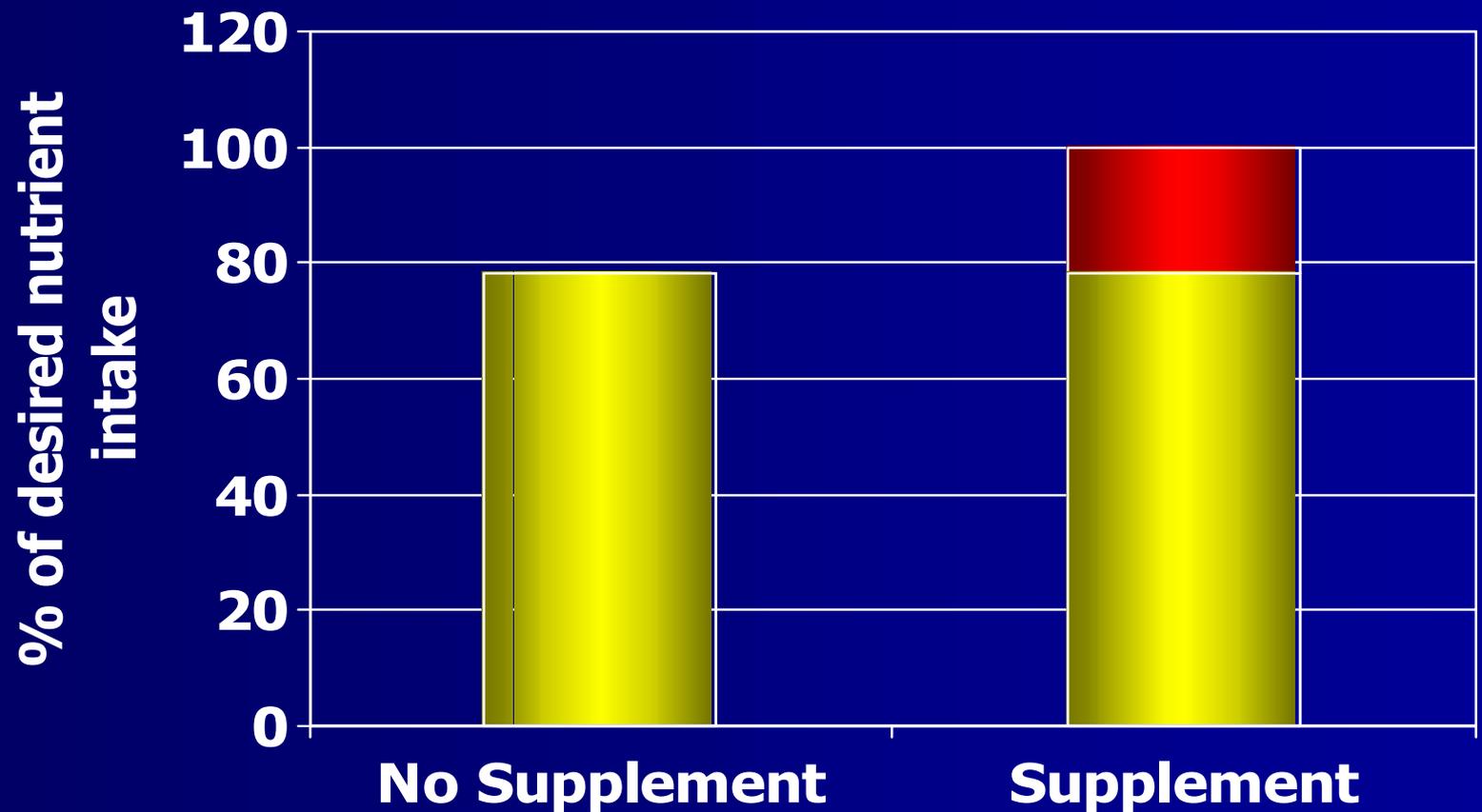
Enhancement Feeding

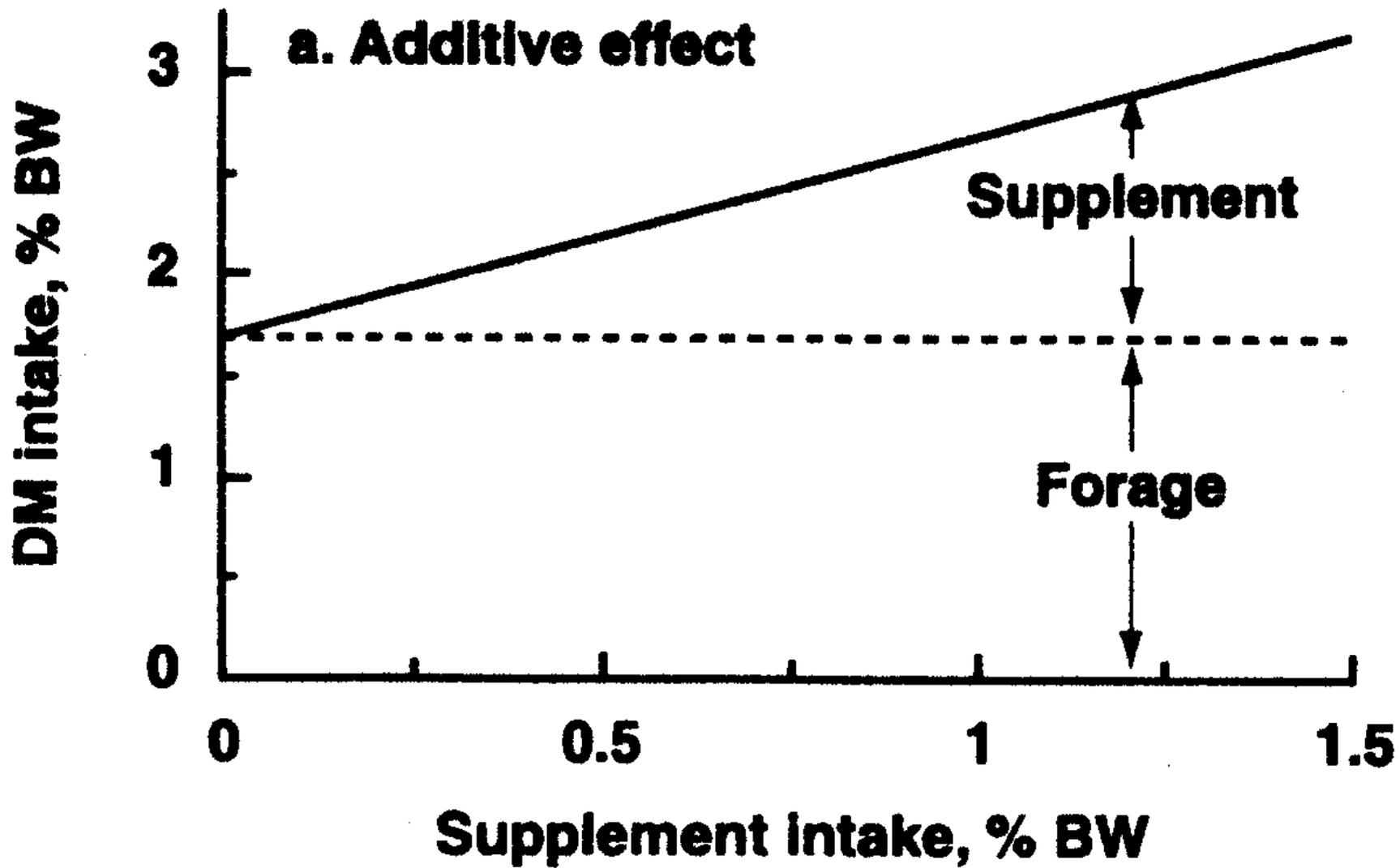


Enhancement Feeding

- Cattle performance falls short of production goals
- Production goals are higher than can be achieved from the forage resource
- Consider a supplement that will sustain forage intake and digestion at the present level

The supplement has an additive effect on the forage





Enhancement Feeding

- Feeding a 20% protein breeders cube to lactating cows during the winter

Supplementation strategies

- To partially replace forage in the diet



Substitute Feeding



Substitute Feeding

- Performance is currently meeting production objectives, but forage availability is anticipated to limit performance in the future
- Your objective is to maintain the current level of performance but extend the forage supply into the future

Substitute Feeding

- Feeding a 10 to 18 percent crude protein supplement containing grain

Supplementation strategies

- To provide nutrition during a shortage of forage



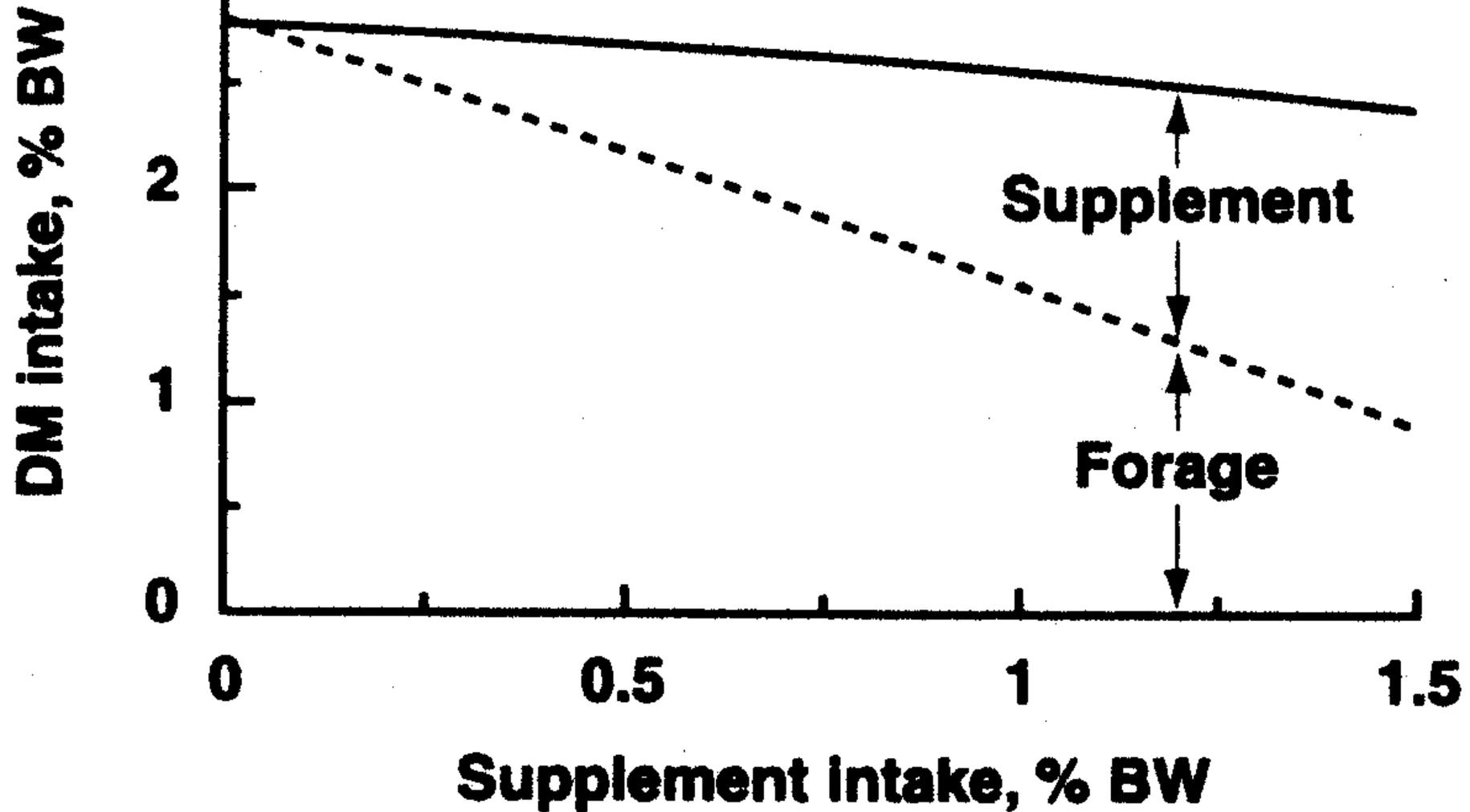
Supply Feeding



Supply Feeding

- You ran out of forage!!!!
- Your objective is to find the most economical replacement for forage and hope for rain or warm weather!!!!

f. Negative Effect on Total Intake



**How much do we
supplement them???**

Supplementation

- We know what they need, but the question is what are they already receiving from the forage
 - Can utilize historical data on the forage you are using
 - Have the forage tested
- On dormant forage cattle will usually consume 1.5-2.5% of their body weight

How much CP do the cows need???

- Cow weight = 1100 lb
- Estimate a 2% of BW hay consumption
 $1100 \text{ lb} * .02 = 22 \text{ lb/d}$
- Estimate hay to be 6% crude protein
 $22 \text{ lb} * .06 = 1.32 \text{ lb/d CP}$
- A 1100 pound (dry) cow needs about 1.6 lb of CP per day
- Thus, there will be a .28 lb deficit
(1.6 lb required – 1.32 lb intake = .28 lb/d)

How much CP do the cows need???

- We decide to supplement them with 20% cubes
 - $.28 \text{ lb} / .20 \text{ lb} = 1.4 \text{ lb cubes/hd/d}$

Or..... Estimate

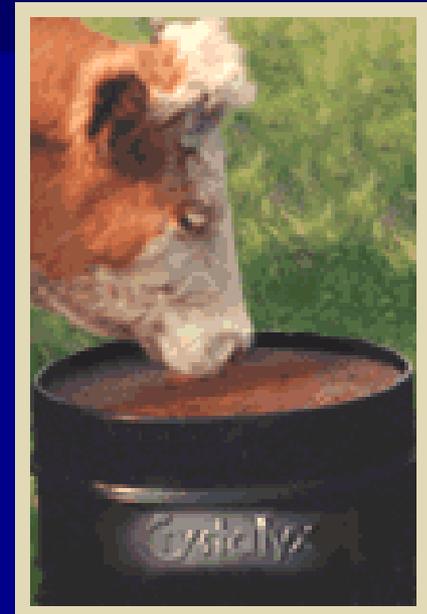
Feeding for Forage Protein Content

Grass Hay		Dry Cow			Wet Cow		
CP, %	TDN, %	Hay Intake, lb	CSM, lb	20% Cubes	Hay Intake, lb	CSM, lb	20% Cubes
2-3	33-37	20-22	2-3	4-6	20-22	4-5	7-9
4-5	36-40	22-24	1-2	2-4	22-24	2-3	5-7
6-7	39-43	25-27	0-1	1-2	25-27	1-2	2-4
8-9	42-46	24-25	--	--	28-29	0-1	1-3
10-11	45-49	23-24	--	--	27-28	--	--
12-13	48-52	22-23	--	--	26-27	--	--
14-15	51-55	21-22	--	--	25-26	--	--

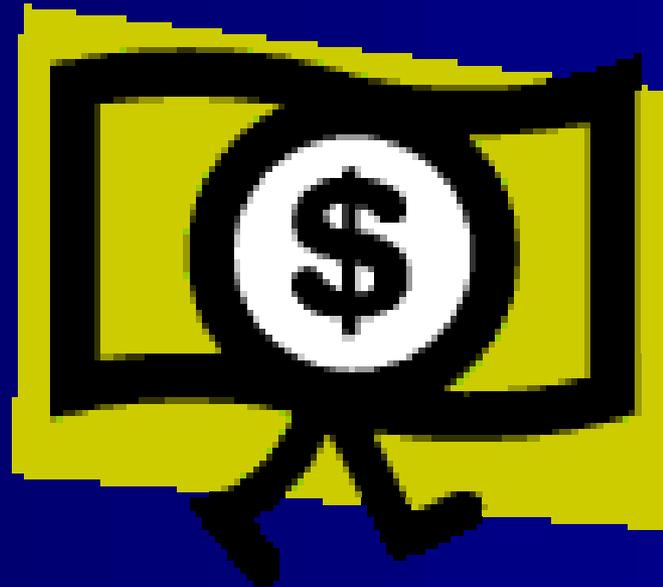
Hammack

So...Which one do I use?

- Cottonseed meal
- Soybean meal
- Cubes
- Cottonseed cake
- Protein blocks
- Liquid
- Good quality hay
- Personal supplement mix



**The most economical and
convenient one for you...**



Cutting Costs without Sacrificing Performance

- Appropriate stocking rates
- Winter pasture
- Limit grazing winter pastures



Cutting Costs without Sacrificing Performance

- Restrict feeding frequency to 3 days per week for protein supplements
- Use high % CP supplements
- Calculate the cost per pound of CP
- Avoid the “bag”
- Byproducts
 - Poultry litter, etc.

Urea???

Mineral Supplementation

→ It is essential for optimal animal maintenance, growth, lactation, reproduction and health!!!!



Mineral Supplementation

- A 12% Ca : 12% P mineral fed free choice should prevent a mineral deficiency
 - A 15:6 mineral may be best for cattle grazing fertilized Bermuda pasture or hay
 - 2500 ppm copper
 - Use a high Magnesium mineral for cattle grazing lush winter forages
 - Salt can be used to adjust consumption
 - ~2.2 oz/cow/day
 - 50 lbs/cow/year

Feeding Broiler Litter

■ Benefits

- Can be used as an inexpensive protein and mineral supplement for cattle
 - 5 to 10 lbs/day of broiler litter should be sufficient to meet the protein and mineral requirements of beef cows consuming average quality hay or pasture
 - Dry cows 5 lbs
 - Wet cows 10 lbs



Feeding Broiler Litter

- Disadvantages
 - Management and feeding
 - Nutrient and mineral variability
 - Herd Health Problems
 - Hardware disease
 - Milk fever
 - Dystocia
 - Breeding problems
 - Copper toxicity

Winter Supplementation



Thank You



East Texas Beef Cattle Science

Striving to improve the efficiency of beef cattle operations in East Texas

Texas Beef Quality Producer Program, Overton, Texas, October 10, 2003



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