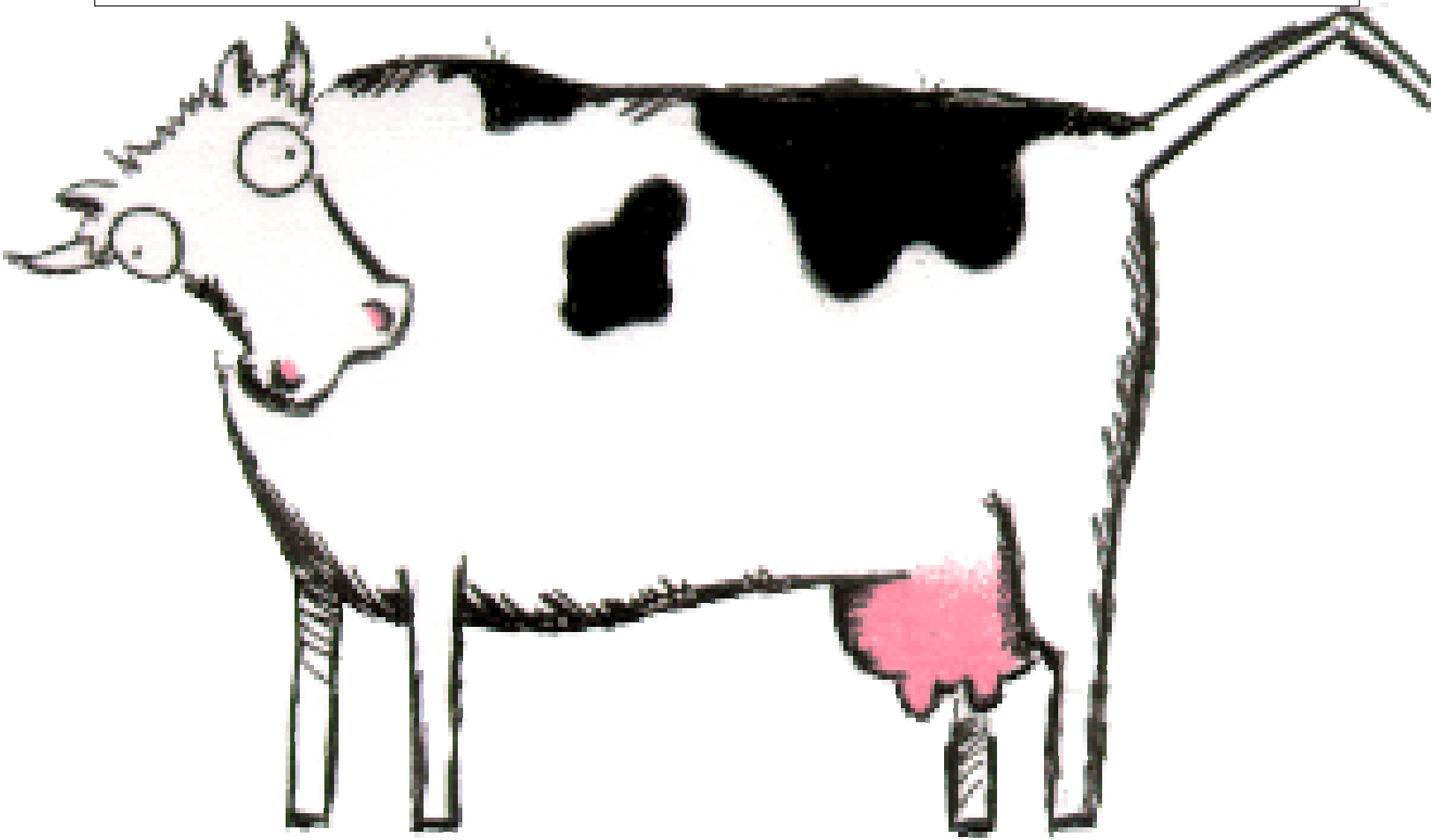
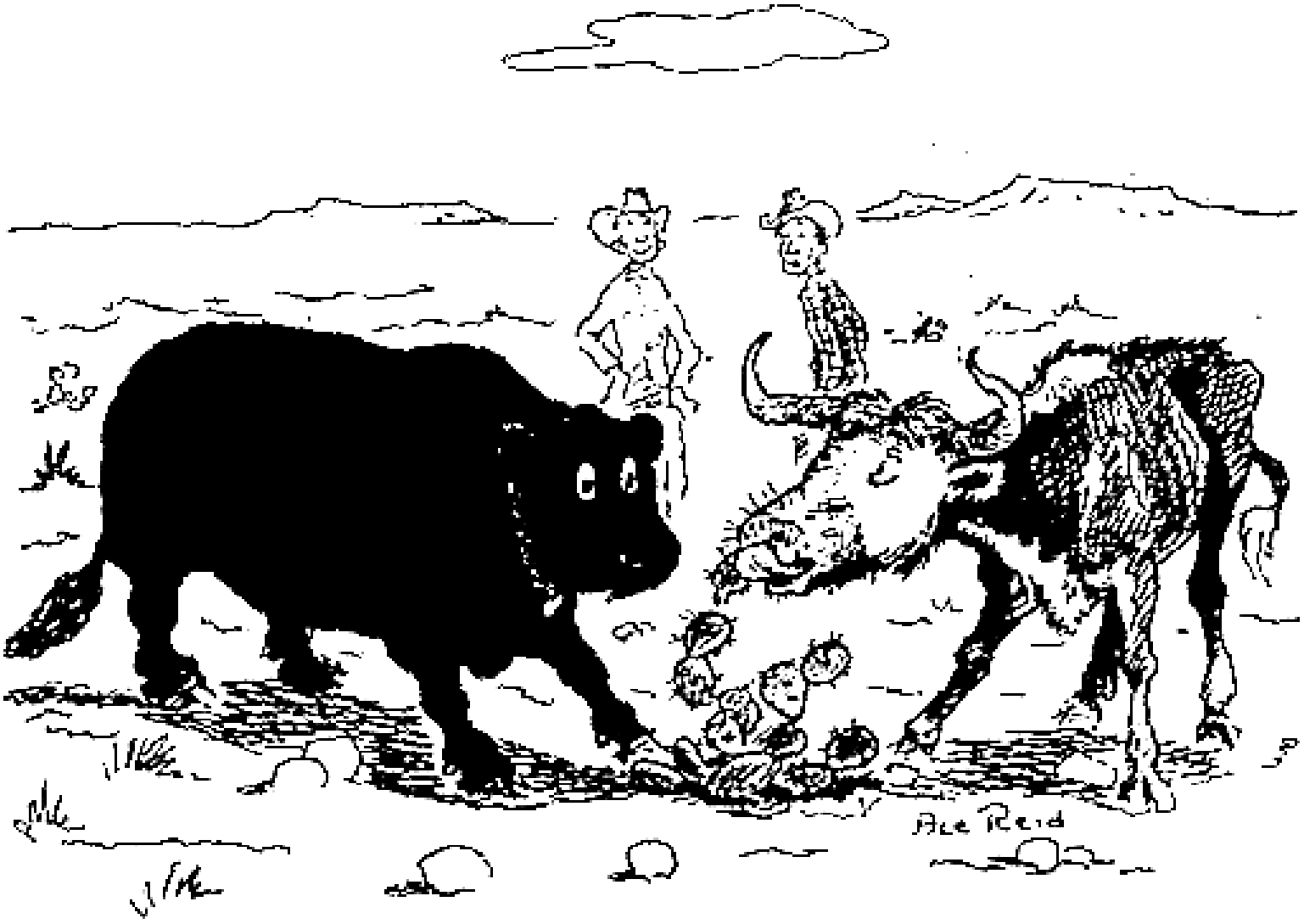
Matching the animal to the resource or “What’s for lunch?”

By Jim Waggoner





"Sumpin' tells me that high-bred bull is gonna' need a little time to adjust to the natural feminine beauty of our native cows."

COW POKES By Ace Reid

"There ain't nothin' the matter with that bull . . .
he jist ain't ever seen them kinda gals!"

Annual Feed Requirement for a 1000 vs 1300 Pound Cow

Cow Weight in Pounds	Pounds of Feed Fed Daily	Days in Period	Total Pounds of Feed fed during the period
Middle Pregnancy:			
1300	20	90	1830
1000	16	90	1480
Difference	4		350
Last 90 Days of Pregnancy:			
1300	23	90	2030
1000	18	90	1650
Difference	5		380
Early Lactation, Average Milker: (11 pounds of milk a day).			
1300	27	100	2489
1000	23	100	2278
Difference	4		211

Annual Feed Requirement for a 1000 vs 1300 Pound Cow (con't.)

Cow Weight in Pounds	*Pounds of Feed Fed Daily*	*Days in Period*	*Total Pounds of Feed fed during the period*
Early Pregnancy, Late Lactation: (Based on 800 lbs. Forage per Animal Unit Month - AUM).			
1300	**35**	**90**	**3120**
1000	**27**	**90**	**2400**
Difference	**8**		**720**

TOTAL POUNDS OF FEED DIFFERENCE IN A 365-DAY PRODUCTION YEAR WHEN A 1000 POUND COW IS COMPARED TO A 1300 POUND COW

1662

IF FEED COSTS $ 100.00/TON ($0.05/LB.), THEN IT WOULD COST AT LEAST,

1662 FEED X $0.05/LB FEED=83.10, MORE PER YEAR JUST FOR FEED FOR

THE 1300 POUND COW. WILL HER CALF BRING THAT MUCH MORE AT SALE TIME?

DAILY FEED NEEDS AND COSTS

MATURE COWS FIRST THREE-FOUND MONTHS OF LACTATION

		AVERAGE MILKER (11 lb. milk/day)		**SUPERIOR MILKER (22 lbs. milk/day)**	
COW WT (POUNDS)	**FEED**	**LB. FEED/DAY**	**COST/DAY**	**LB. FEED/DAY**	**COST/DAY**
882	Grass hay	22.75	1.02	14.21	0.64
	Supplement	1.50	0.17	10.04	1.10
	Total	24.25	$1.19	24.25	$1.74
992	Grass hay	26.45	1.19	19.32	0.87
	Supplement	0.85	0.09	7.98	0.88
	Total	27.3	1.28	27.3	1.75
1323	Grass hay	36.40	1.64	31.00	1.40
	Supplement	0	0	5.40	0.59
	Total	36.40	$1.64	36.40	$1.99

Grass hay 6.5% CP and 42% TDN. Valued at $90/ton.
Supplement 20% CP and 75% TDN. Valued at $220/ton.

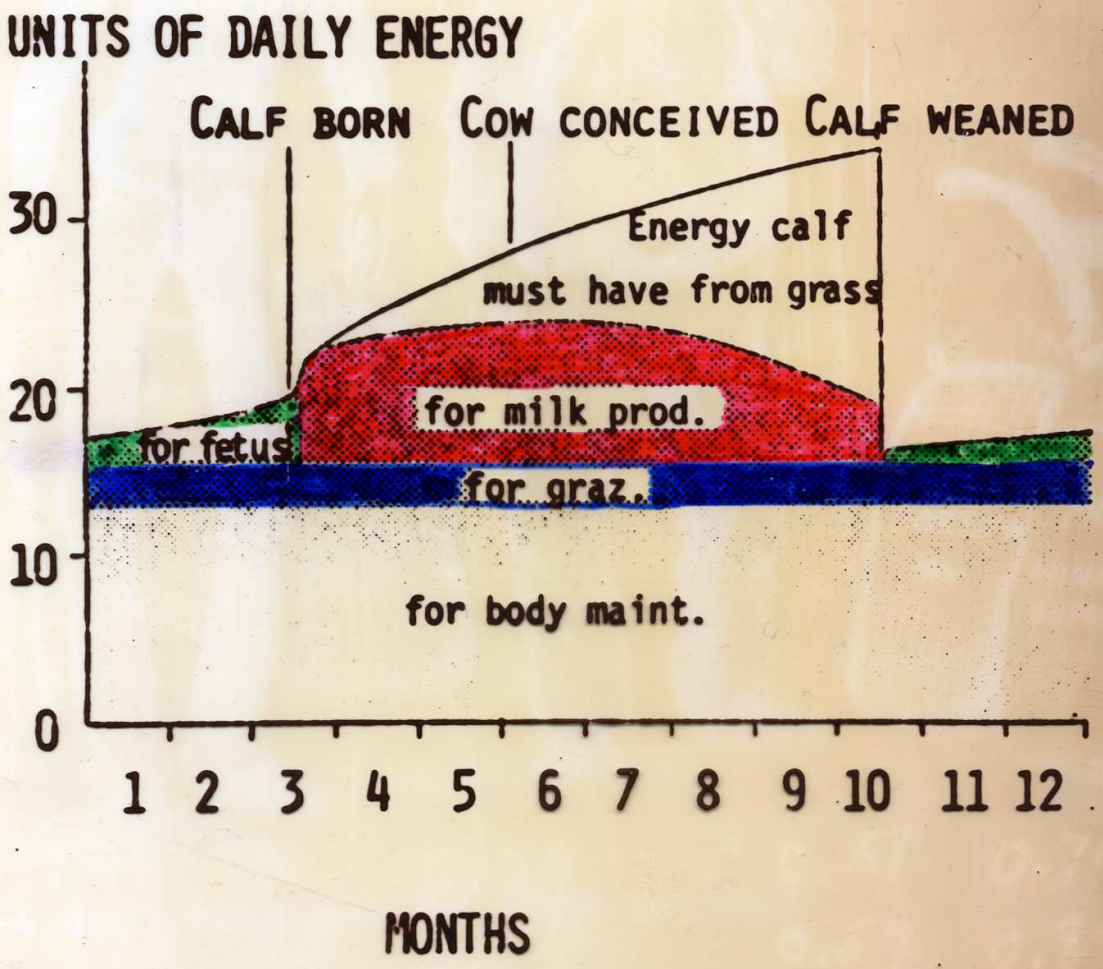
Intake and digestibility of grazed range forage during the winter

Intake pounds per day	Intake pounds per 100 pounds of body weight	Digestibility percent	Temperature degrees Fahrenheit
25.5	2.3	55.4	5
26.2	2.4	59.6	4
20.9	1.9	55.9	10
19.1	1.7	52.5	-22
15.0	1.3	38.2	-17
19.1	1.7	43.0	32
16.9	1.5	36.5	15

Roughage capacity of beef cows (900 to 1,100 pounds)

Roughage type	Class of cattle	Dry matter capacity percent of body weight	As fed capacity pounds
Low-quality roughage	dry cows	1.5	17-18
(dry grass, straw, etc.)	wet cow	2.0	23-24
Average-quality hays	dry cows	2.0	22-24
(meadow, native, etc.)	wet cow	2.3	25-28
High-quality forages	dry cows	2.5	28-30
Alfalfa hay	wet cows	2.7	30-32

FIG. 1. RELATIVE ANNUAL ENERGY REQUIREMENTS OF A RANGE COW.



Nutrient Requirements of Mature Beef Cows (1000 lbs)
(No allowances are made for cold weather stress.)

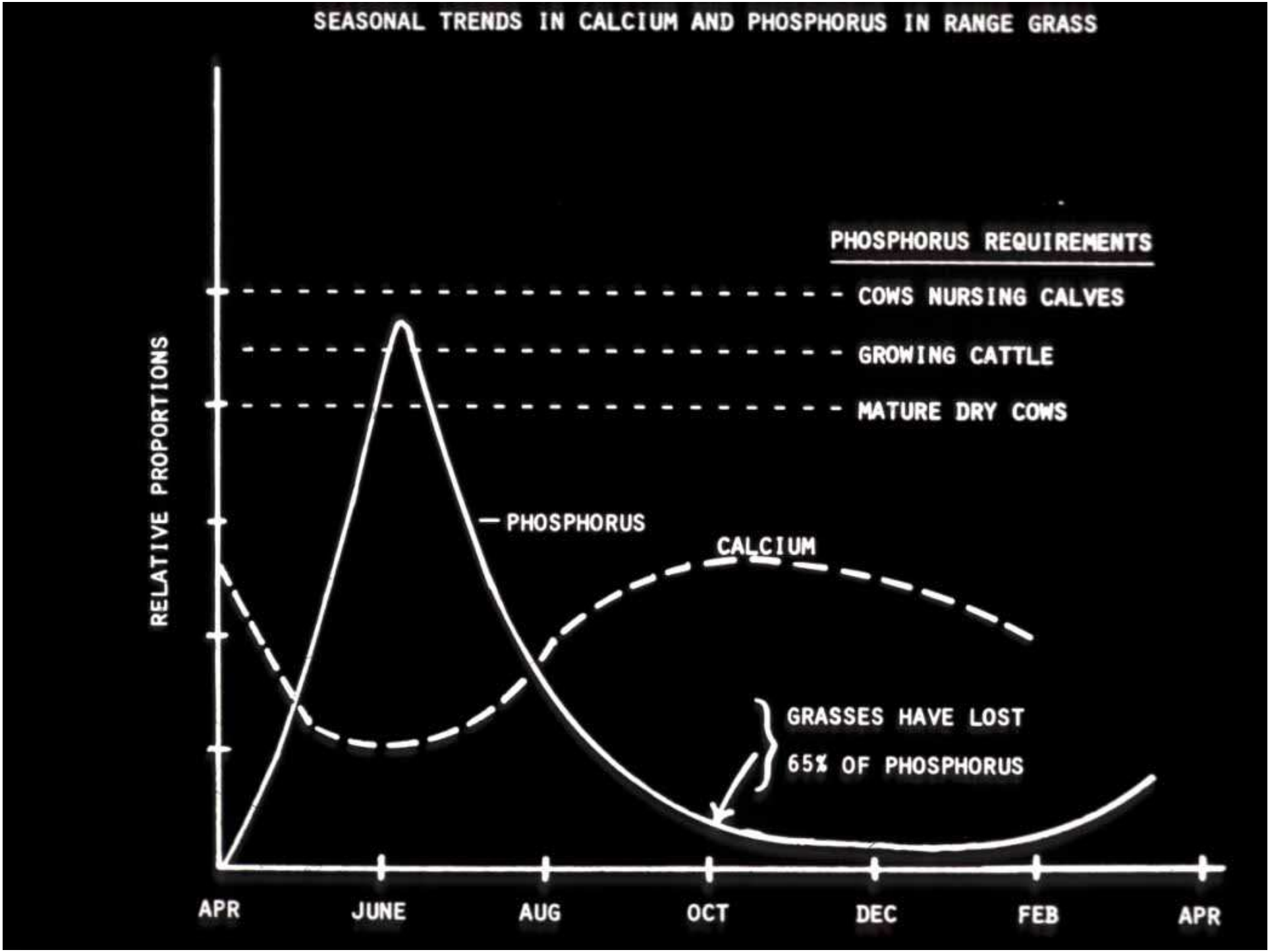
Daily gain (lbs)	Crude Protein (lbs)	TDN (lbs)	Ca (gm)	P (gm)
		Middle Third of Pregnancy		
0	0.86	7.9	12	12
		Last Third of Pregnancy		
1.0	1.06	9.4	15	15
		Cow nursing calves - First 3-4 months post-partum Average Milking Ability (11.0 +/- 1.0 lb/day)		
0	1.89	11.0	26	26
		Superior Milking Ability (22 +/- 1.0 lb/day)		
0	2.70	14.1	45	42

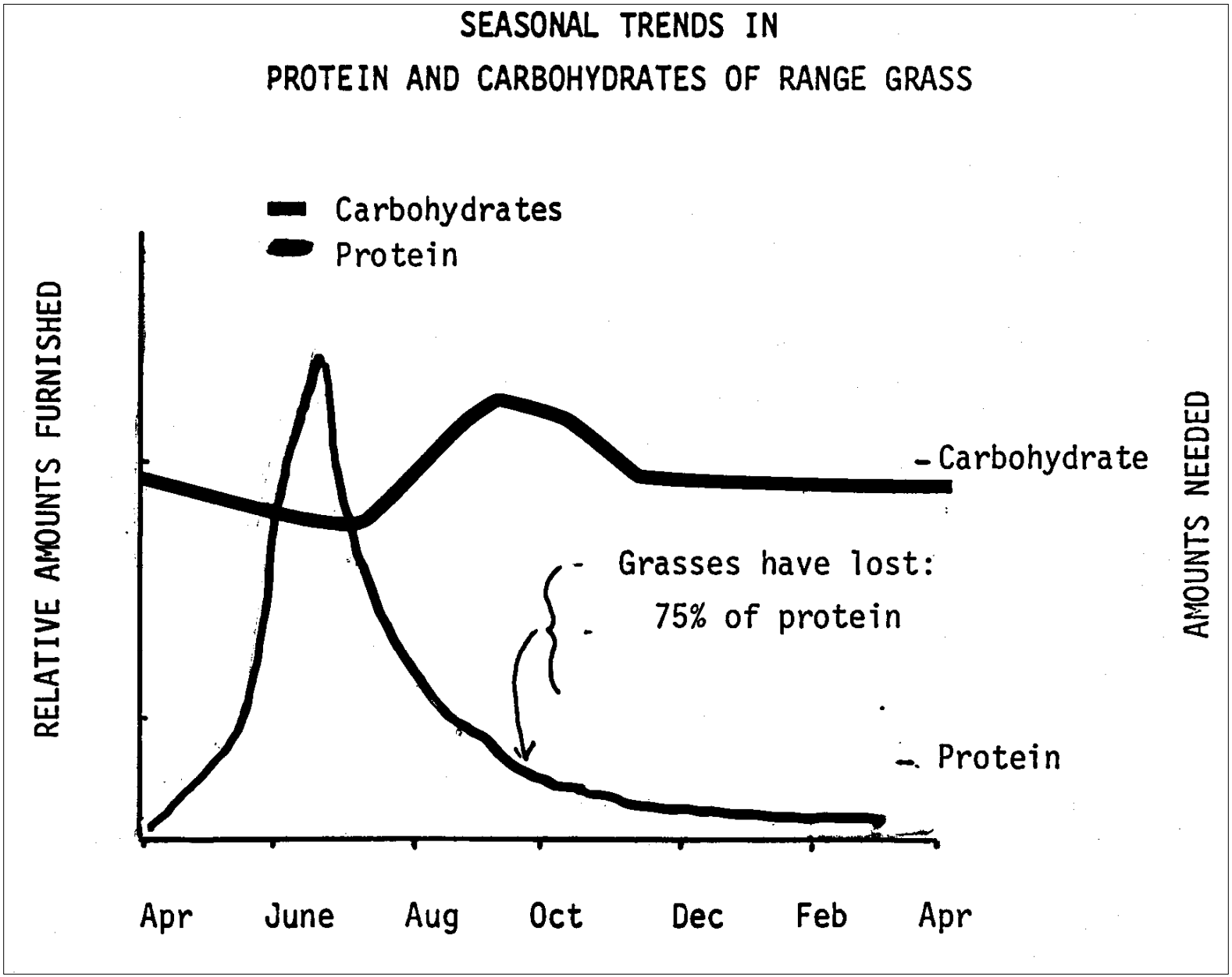
Allocation of Grazed Forage

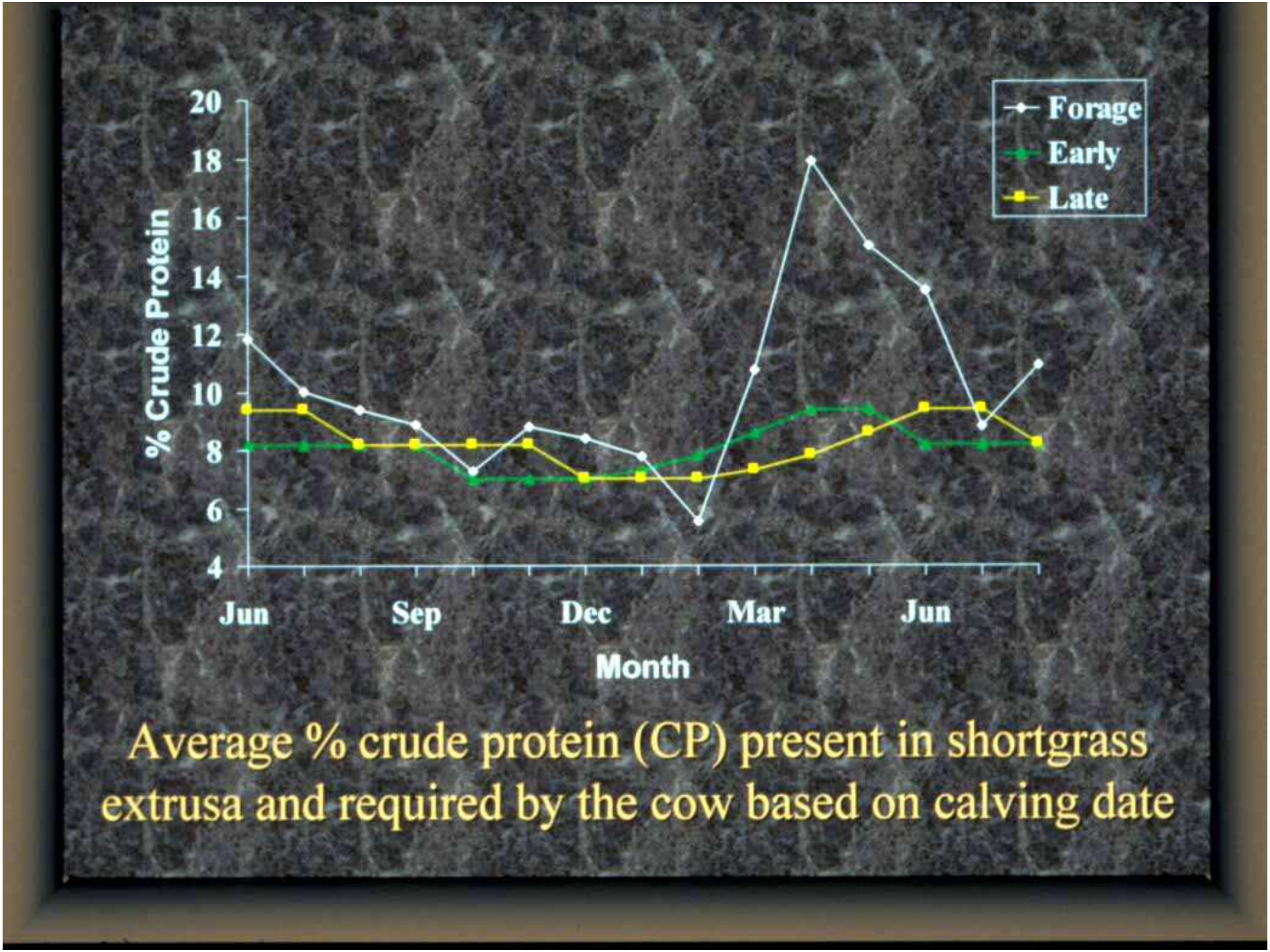
[a] Animal Unit (AU) 1000 lb cow or equivalent	= the amount of forage consumed (by a 1000 pound cow or their equivalent) during one year. This includes the suckling calf up to 6 months (365 day period)
[b] Animal Unit Month (AUM)	= the amount of forage required per month by a 1000 pound cow or their equivalent (1 AU) (~26 lbs/day).
AUM	= 800 pounds of forage
Five sheep	= 1 AU
One mature horse	= 1.25 AU
One mature bull (1500 lb.)	= 1.5 AU
273,972 average sized grasshoppers	= 1 AU

[a] AU equivalent is generally equal to body weight times 0.001.

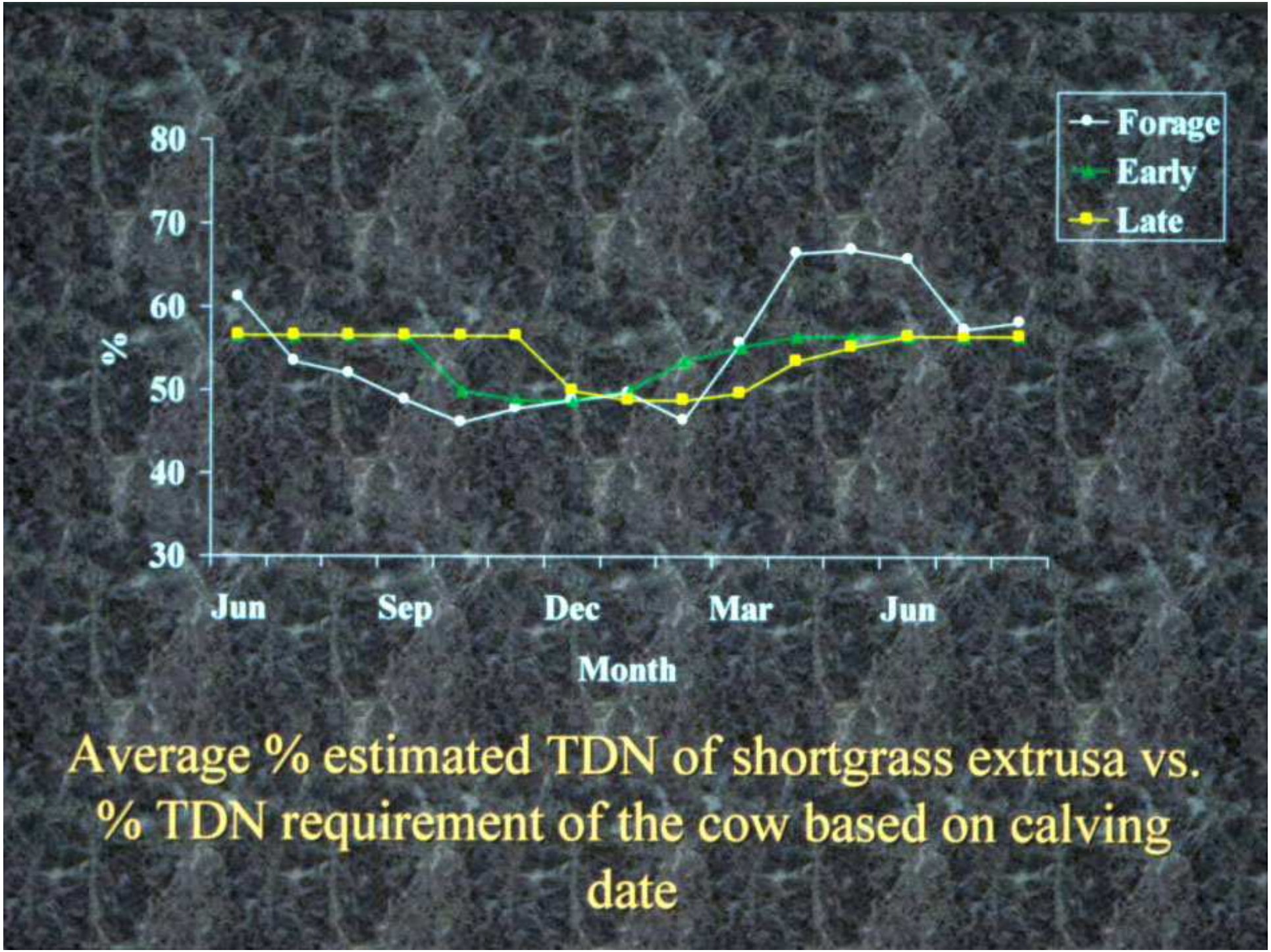
[b] The term AUM is commonly used in three ways: (a) Stocking rate, as in "*X* acres per AUM"; (b) forage allocations, as in "*X* AUMs in Allotment A"; (c) utilization, as in "*X* AUMs taken from Unit B." Does not consider forage quality or production status of the animal. Not synonymous with *animal month.*


SEASONAL TRENDS IN CALCIUM AND PHOSPHORUS IN RANGE GRASS
PHOSPHORUS REQUIREMENTS
COWS NURSING CALVES
GROWING CATTLE
MATURE DRY COWS
RELATIVE PROPORTIONS
PHOSPHORUS
CALCIUM
GRASSES HAVE LOST
65% OF PHOSPHORUS
APR
JUNE
AUG
OCT
DEC
FEB
APR


SEASONAL TRENDS IN
PROTEIN AND CARBOHYDRATES OF RANGE GRASS
Carbohydrates
Protein
RELATIVE AMOUNTS FURNISHED
AMOUNTS NEEDED
Carbohydrate
Grasses have lost:
75% of protein
Protein
Apr
June
Aug
Oct
Dec
Feb
Apr



Average % crude protein (CP) present in shortgrass extrusa and required by the cow based on calving date



Average % estimated TDN of shortgrass extrusa vs. % TDN requirement of the cow based on calving date