

Table 12. Estimated pasture consumption per day (as fed).

Pasture Forage	Pasture Condition			
	Excellent ¹	Good ²	Fair ³	Scanty ⁴
	----- (lbs) -----			
Bahia	70	50	30	20
Bermuda	75	60	35	25
Clovers	90	70	45	30
Millet	90	70	50	30
Oats	90	70	50	30
Rye	90	70	50	30
Pangola	75	60	35	20
Ryegrass	90	65	40	25
Sudex	90	70	50	30

¹A pasture furnishing an abundance of lush, actively growing palatable forage.

²A pasture that provides good grazing. The cows are able to get a fill easily. Most of the grasses should have a good green color.

³A pasture that has good growth but has weeds. Also a pasture that is rather dry because of lack of rain.

⁴An overgrazed pasture or where the pasture is dry and short.

The consumption values in Table 12 may be obtained where cows are allowed to graze for one to two hours per day. Cows will obtain their greatest consumption in the first 30 minutes of grazing; by the end of one hour, they will have a good fill. Cows remaining on winter or summer annual grasses beyond one hour will cause damage to the plants by trampling.

Dairy cows will usually remain on permanent pastures such as bahia, bermuda, and pangola for longer periods.

After establishing an estimated value for the quality and quantity of pasture or green chop being consumed, the formulation may be completed through computer usage or extensive hand calculations.

Formulating Rations

A number of ingredients may be used very successfully in dairy cattle rations so long as a good balance is maintained and certain limitations and economic factors are carefully considered. Several are listed in Table 13.

Relative Values

Relative values are based on prices set for corn, soybean meal, and cottonseed hulls or similar ingredients that may be used to replace them.

High producers will generally produce 2-4 lbs more milk daily when on rations containing a good balance of protein as compared to cows on rations containing mostly protein from highly soluble sources. For this reason, researchers have shown that urea and other nonprotein

Table 13. Relative values and limitations on certain ingredients.

	Relative ¹	Most	Bypass
	Value/ton	Efficiency	Values for
	(\$)	Max/ton	Protein
		(%)	(% of CP)
Alfalfa hay	120	15-30	25
Brewers, dried	146	10-20	49
Bermuda hay	81	10-15	20
Citrus pulp	99	15-30	25
Cottonseed, whole	163	10-12	25
Cottonseed meal	196	10-20	35
Distillers grains	167	20-30	47
Hominy feed	119	30-40	25
Milo grain	111	20-30	45
Molasses, cane	85	5-8	0
Oats or Barley	112	15-30	17
Soy hulls	108	15-25	25
Peanut meal	223	10-20	25
Wheat midds	130	10-25	21
Wheat, grain	123	20-35	22

¹Prices based on corn at \$110, 44% soybean meal at \$210, and cottonseed hulls at \$75 per ton.

nitrogen sources may be utilized in some rations and are of little to no value in others.

Bypass Protein Values

The optimum concentration of bypass protein as a percent of total protein for the total ration dry matter is probably between 30-40%. Rations formulated within these ranges should provide adequate protein or amino acids for absorption from the small intestine.

Understanding Dry Matter Consumption by Dairy Cows

Many factors influence the dry matter (DM) intake of high producers. Those commonly observed are body weight, health of cows, level of milk production, climate, frequency of feeding, ration balance, and palatability of the ration.

The dry matter intake for high producers varies according to type of ration and can range from 2.5 to 5 lbs of dry matter per 100 lbs of body weight.

Tables 14 and 15 contain information on DM intake for cows of various sizes producing different levels of milk.

Forages vary considerably in protein and energy. Where stored forages are used in abundance, a forage test should be conducted periodically.