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EMERGENCY MAINTENANCE RATIONS FOR DAIRY CATTLE

by

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There is considerable interest among dairymen at the present time in maintenance rations for dairy cattle. With the low price of butterfat, many dairymen are finding it difficult to buy feedstuffs which are maintaining a fairly high price level. Also, there is a slow demand for milk cows, and beef prices are very low. The situation is more difficult in the Willamette Valley where practically all of last year's oats and vetch hay crop was destroyed by winter freezing.

It is certainly logical for every dairyman to cull his herd closely at the present time rather than purchase feeds for them. Old cows, poor producers, and unhealthy animals such as abortion reactors, difficult breeders, and animals with udder disorders should be disposed of. Similarly young heifers should be carefully considered, and only the choicest ones retained. It would be much more desirable to cull out one-fourth or even one-half of the herd and to feed those remaining somewhat better than to attempt to maintain all the herd if the feed supply is limited.

Animals require a definite amount of digestible protein, total digestible nutrients, or energy, and minerals in order to be maintained; therefore, in order to discuss maintenance rations for dairy cattle, it would seem desirable to indicate the digestible crude protein and total digestible nutrient content of the common feedstuffs found on the market and their cost per ton at the present writing (December 19, 1933). These figures are given in the following table. The cost per pound of digestible crude protein and per pound of total digestible nutrients for the indicated price are also given.

Feedstuff	Digestible	Total	Cost	Cost Per Pound	
	: Crude Protein	: Digestible Nutrients	: Per Ton	: Digestible Protein	: Total Digestible Nutrients
	: %	: %	: \$	: Cents	: Cents
Mill Run	12.9	67.0	18.00	6.98	1.34
Wheat Bran	12.5	60.9	18.00	7.20	1.78
Ground Barley	8.4	77.3	23.00	13.62	1.49
Ground Oats	9.4	70.0	28.00	14.80	2.00
Ground Wheat	7.3	79.6	28.00	19.15	1.79
Linseed Oil Meal	30.2	77.9	38.00	6.29	2.44
Cottonseed Meal	37.0	78.2	38.00	5.14	2.43
Soybean Meal	38.1	83.2	38.00	4.98	2.28
Peanut Meal	40.3	83.5	38.00	4.71	2.27
Cocconut Meal	18.8	78.0	24.00	6.38	1.53
Dried Beet Pulp	4.6	71.6	23.00	25.00	1.60
Blackstrap Molasses	1.0	59.2	25.00	125.00	2.11
Alfalfa Hay	10.6	51.6	17.00	8.01	1.64
Clover Hay	7.6	50.9	17.00	11.19	1.66
Sterilized Bone Flour			42.00		
Salt			19.00		

A considerable number of other feedstuffs are important inasmuch as they are available on many Oregon farms at the present time. A few of the more important with their average feeding value are indicated below:

Feedstuff	Digestible Crude Protein	Total Digestible Nutrients
Cheat Seed	6.2	70.2
Dent Corn, No. 2	7.1	81.7
Corn and Cob Meal	6.1	78.1
Field Peas	19.0	76.1
Skimmilk	3.6	9.1
Corn Stover	2.2	52.2
Common Millet	5.0	55.0
Cheat Hay	3.0	40.1
Rye Grass Hay	4.4	47.0
Oat Hay	4.5	46.4
Oats and Vetch Hay	6.9	47.1
Oat Straw	1.0	45.6
Wheat Straw	0.7	36.9
Carrots	1.0	10.6
Potatoes	1.1	17.1
Beets	0.9	10.2
Mangels	0.8	7.4
Turnips	1.0	7.4
Kale	1.9	7.3
Corn Silage	1.1	17.7
Oats and Vetch Silage	2.8	17.6

The daily requirements for maintenance of the mature dairy cow are based directly on the weight of the animal and must be met if the cow is not to lose weight. The production of milk and the putting on of flesh, of course, calls for additional requirements. The requirements for growing dairy heifers depends on the size and the age of the heifers, the younger heifers having a higher requirement per 100 pounds of weight than the larger and older heifers.

The daily requirements are as follows:

	Digestible Crude Protein #	Total Digestible Nutrients #
For maintenance of 1000 lb. cow	.70	7.93
For 200# growing dairy heifer	.54	3.50
For 400# growing dairy heifer	.85	6.20
For 600# growing dairy heifer	1.08	8.40
For 800# growing dairy heifer	1.28	9.92

The most economical ration to feed depends directly on the feed stuffs available on the particular farm. A good quality of legume hay meets the requirements of growing heifers fairly well. If only grass or a cereal hay, such as oat hay, is available then it would be economical to supplement the ration of a growing yearling heifer with three quarters to one pound daily of a high protein concentrate such as peanut meal. It would cost about \$2.00 to feed a protein supplement to a growing heifer until pastures should be available. The expenditure is justified if the animal is to be retained as a future dairy herd replacement.

The question has been frequently asked recently whether dairy cattle can be maintained on straw. A good quality of straw will supply much of the energy requirements of cattle if they can be induced to consume enough of it, but a glance at the previous tables will show that it is too low in protein to maintain even the cow, and a 600 pound heifer would have to consume approximately 100 pounds of straw daily to meet her protein requirements. The problem of straw feeding resolves itself, then, into the two considerations of getting cattle to consume it and supplying additional protein.

Molasses has long been used as an appetizer by diluting with water and pouring over unpalatable roughage to induce cattle to eat it. By pouring 2 to 3 pounds per animal daily of diluted molasses over straw, corn stover or a poor quality of hay the cattle may be induced to eat a sufficient amount to meet most of their nutritive requirements except for digestible protein and minerals. The protein requirement can be most economically met from purchased feeds by feeding from one to one and a half pounds daily of high protein concentrates, cottonseed meal, linseed meal, soybean meal or peanut meal.

It is recommended that minerals be supplied in the form of salt and sterilized bone meal to all dairy animals. The best method of feeding salt and bone meal is to place them in separate boxes in the exercise lot when they will consume what they require. Animals being maintained on straw, poor quality hay, etc., would especially need bone meal.

It should be pointed out that we are not recommending the feeding of straw and other poor quality roughage as a general practice, but merely offering suggestions during the present situation. Animals can possibly be maintained on poorer rations than those indicated, but the desirability of the practice would be questionable. Similarly the feeding of better rations to growing heifers so that they may attain the maximum size of their inheritance should be more profitable over a period of years.