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no. 102
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dairy guidelines



Series 102 - October 1980

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FEEDING GUIDELINES FOR DAIRY REPLACEMENTS

OCT 30 1980

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Calves and heifers on a dairy farm are non-income producing animals, and are cost items that set up a situation of neglect of the animals. The result is a small heifer, calving at 28-32 months of age and not performing well during her first lactation. It is more economical on most farms to feed and care for these important future-herd members in a way so they will calve at the proper size at 24-26 months of age.

Dairy replacements are the most nutritionally neglected animals on many dairy farms. Often they are fed properly through weaning, but then are fed rations inadequate for normal growth. Consequently the level of feeding prevents them from being in condition for breeding at the desired time (14-18 months of age and 750 lbs weight for Holsteins). The result is average age of first calving in DHI herds is 30 months, size is under 1100 lbs, and production, especially lifetime production, is reduced. In most herds, it is more profitable to feed adequately to freshen at 24-26 months of age.

The suggested rations (Table 1) offer several options for feeding each of four different age groups of Holstein replacement heifers. The amounts may be reduced to 75% to 90% for Jersey, Guernsey, Ayrshire, or Brown Swiss breeds, respectively. Average quality silage (35% DM; 7% CP; 31% ADF), and hay (85% DM; 15% CP; 44% ADF) were used in calculating these examples. The amounts of various feedstuffs should be adjusted if your forages have test values that widely differ from these levels. Pasture was considered adequate with both new growth and ample quantity available. If the pasture is short and dry from the lack of rain, or when it gets tough in late summer and early fall, a shift to higher amounts of a higher protein concentrate or to one of the other rations is suggested.

Dairymen who are feeding complete rations to their dairy herd with a mobile mixer wagon or truck, may feed either the high production group ration, or, if grouping is not practiced, the milking herd ration to the 2 to 5 month age group of heifers. For other age groups, the dry matter in the complete ration should contain between 10 to 12% crude protein and between 29 to 34% acid detergent fiber (24 to 27% crude fiber). Rations in Table 1 containing only concentrate and silage, if mixed together, would be examples of complete rations.

Table 1. Suggested rations for dairy replacements through calving

Age (mo)	Size (lb)	DM Intake (lbs)	Feeding Options (lbs) [†]			
			Conc. (% CP)	Corn Silage	Hay	Pasture
-----lbs-----						
2-5	150-300	4-8	4 (20%)	7	-	-
			4 (20%)	5	1	-
			4 (16%)	3	2	-
			4 (16%)	-	3	-
6-9	300-500	8-13	3 (24%)	24	-	-
			3 (16%)	19	2	-
			3 (16%)	12	5	-
			5 (10%) [‡]	-	8	-
			5 (10%) [‡]	-	-	F.C. [§]
10-16	500-800	14-18	3 (32%)	38	-	-
			3 (24%)	31	3	-
			5 (16%)	19	6	-
			7 (10%) [‡]	-	12	-
			3 (10%) [‡]	-	-	F.C. [§]
17-24	800-1100	18-19	3 (32%)	44	-	-
			3 (24%)	34	4	-
			5 (16%)	20	8	-
			7 (10%) [‡]	-	14	-
			-	-	-	F.C.

[†]Select one combination under each age group that fits your feed source.

[‡]May be grain only, such as cracked corn, ground barley or oats.

[§]Free-choice (F.C.) continuous grazing of excellent pasture.

^{||}Springing heifers should be moved onto the milk cow ration about 2 weeks prior to freshening.

Table 2. Nutrient requirements for Holstein heifers[†]

Age Wks	Mo.	Wt. Lbs.	DM Intake		Total Protein		TDN % DM	CF % DM	ADF % DM	Ca % DM	P % DM
			Lbs.	Body Wt. (%)	Lbs.	% DM					
3	.7	100	2.8	2.8	.5	17.9	91.1	8	9	.86	.54
9	2.1	150	4.1	2.7	.7	17.1	83.4	12	14	.76	.41
14	3.3	200	5.4	2.7	.8	14.8	79.1	18	22	.70	.37
23	5.4	300	7.9	2.6	1.0	12.7	72.2	24	29	.51	.32
32	7.5	400	10.5	2.6	1.3	12.4	67.5	24	29	.43	.29
41	9.6	500	12.7	2.5	1.5	11.8	66.0	26	31	.39	.28
50	11.7	600	14.7	2.5	1.6	10.9	65.0	27	32	.35	.26
59 [†]	13.8	700	16.4	2.3	2.0	12.2	67.0	22	26	.33	.24
68 [†]	15.9	800	18.0	2.3	2.2	12.2	67.0	22	26	.31	.23
78	18.2	900	19.2	2.1	1.9	9.9	60.0	28	34	.30	.22
88	20.5	1000	18.7	1.9	1.8	9.6	55.9	30	36	.30	.22
98	22.9	1100	18.3	1.9	1.7	9.3	56.0	30	36	.29	.22
110	25.7	1200	19.4	1.6	1.8	9.3	56.0	30	36	.26	.22
130	30.3	1300	20.5	1.6	1.9	9.3	56.0	30	36	.26	.20

[†] Calculated from 1978 N.R.C.

[‡] Increasing the energy and protein during breeding age and weight may improve conception rate, and extra concentrate feeding will make heifers easier to handle.

Nutrient requirements for Holstein heifers are shown in Table 2. These values were calculated from the 1978 National Research Council with modifications made in converting crude fiber to acid detergent fiber. Also, percentages of various nutrients were calculated from the dry matter intake after combining several age groups. If heifers eat more or less than shown, make adjustments in quantity fed according to the appetite of the heifers.

"Unthrifty calves make unthrifty cows." This may account for the reason the 2-year old heifers don't perform well. If a calf is "stunted," had a severe respiratory infection, or was underfed and grew too slowly, she will show delayed heat cycles, and will not milk well after freshening. To raise a heifer fitting this description will cost as much as a healthy, well-grown animal. A dairyman may be doing himself a favor to cull these "stunted" animals at an early age.

A well-fed, growthy heifer, bred at 15 months of age (750 lbs for Holsteins), calving at 24 months and weighing in excess of 1100 lbs, but not fat, will have an opportunity to express her genetic capability during the first lactation.

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