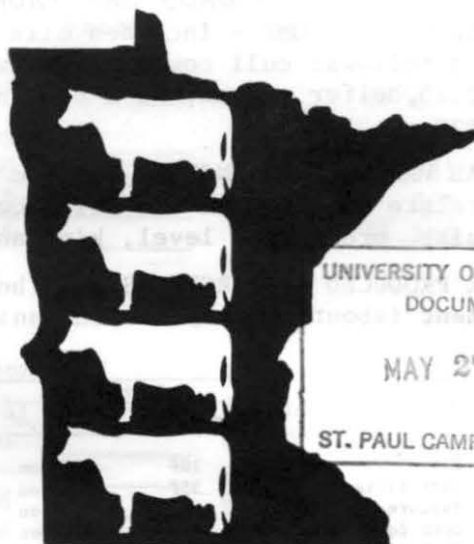


Dairy Herd PLANNING GUIDE



Even with current concerns with stable milk prices and increasing operating expenses, a well-managed dairy enterprise is still profitable. But, just as in any other period, some dairymen are not doing too well. They are asking: Should I continue in dairying? Others are doing very well and are considering expansion. Still other farmers are considering entry into the dairy business. This guide is designed to provide planning information and procedures for use in these situations.

SHOULD I CONTINUE IN DAIRYING?

To continue in the short-run, a dairyman should at least cover feed and other cash costs. Estimated costs and returns on page 3 (this year) would indicate that most Minnesota dairymen are more than covering these costs and should continue unless they have better alternatives. For the longer-term, dairymen with herds below State average will likely be receiving below average returns for labor or will be depleting their facilities or both.

SHOULD I GET INTO DAIRYING? - SHOULD I EXPAND?

Generally, dairying can compete with other enterprises for the use of resources on many Minnesota farms given the following locational, resource and management conditions:

- LOCATION** - Access to a stable milk market (preferably Grade A) and situated in a densely settled dairy area.
- RESOURCES** - An ample supply of labor, limited land.
- Land better suited to forage than to feedgrains.
- A skilled herdsman able to achieve production management goals, such as 13,000 pounds plus herd average, handle a 35-40 cow herd, and raise the necessary forage and grain; or, with an additional man, manage a 75 cow herd including forage and grain production and maintain a 13 month calving interval.

The table at the bottom of page 3 indicates that a production level of 14,000 pounds per cow or better is typically necessary to justify investing in new facilities, give desired returns to labor and capital, and repay debt on a timely basis.

The entering or expansion-minded dairyman should also consider several other factors such as: Do you like to work with cows? How old are you? How is your health? How good are your facilities? What is your financial situation; labor situation?

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PLANNING INFORMATION

TOTAL CASH INCOME - Includes milk sales plus short and long run cull sales calculated as follows: cull cows, 1,300# x 30% x \$52 and \$45/cwt; bull calves, 42% x \$70 and \$125, heifer calves, 4% x \$80 and \$120; non-breeding heifers, 5% x 900# x \$60 and \$70.

TOTAL VARIABLE EXPENSES - Include only those cash costs and home raised items which relate directly to the dairy cow and her replacement. These costs will vary by herd size, production level, kind and amount of technology used, etc.

HOME PRODUCED RESOURCES USED - The annual feed requirements per cow and normal replacement (about 1.0 replacement animals per dairy cow) used in the example are:

	11,000# Milk Cow				15,000# Milk/Cow			
	High Hay		High Silage		High Hay		High Silage	
	Per Day ^{1/}	Per Yr. ^{2/}	Per Day ^{1/}	Per Yr. ^{2/}	Per Day ^{1/}	Per Yr. ^{2/}	Per Day ^{1/}	Per Yr. ^{2/}
Hay	20#	5.5 ton	12#	4.0 ton	20#	5.5 ton	12#	4.0 ton
Corn Silage	35#	8.0 ton	55#	11.5 ton	35#	8.0 ton	55#	11.5 ton
Pasture, Hay Eq. ^{3/}	--	0.8 ton	--	0.8 ton	--	0.8 ton	--	0.8 ton
Corn Equivalent	9#	80 ton	6#	60 bu.	14#	110 bu.	11#	90 bu.
Soybean Meal	1/4#	300 lbs.	1/2#	400 lbs.	3/4#	700 lbs.	1#	800 lbs.

^{1/} Average amount of feed fed per day to dairy cow only. ^{2/} For annual totals, multiply daily ration times 365 days and add 1/2 of feed required by heifer replacements as shown on page 4. ^{3/} For replacement heifer only. If no pasture is used, add this H.E. requirement to hay and/or corn silage tonnage.

Purchased Feeds - Example assumes 35 lbs. of milk replacer at \$40/cwt. Protein supplement is priced at \$12 & 13/cwt. See table (above) for amounts of protein recommended.

Health - Medicine, spray and veterinarian expenses: \$20 to \$35 per cow.

Breeding - This might be artificial insemination at \$15 to \$25 per cow unit or the prorated costs of raising and/or maintaining a herd sire. The latter would fall in the same cost range but would not be a direct cash cost each year.

Power and Fuel - The dairy share of electricity, fuel and oil: \$40 to \$75 per cow.

Insurance - Insurance on cow and replacement: \$8 per cow.

Repairs - Repair costs on dairy buildings and equipment, tractors, trucks and cars that would not be incurred if items were not used for dairy: \$30 to \$40 per cow.

Bedding - Requirements vary with the waste management system from about 500 lbs. per cow in a liquid manure system to 1.5 tons in a solid manure handling system.

Miscellaneous - Supplies of \$20 to \$30 per cow, plus herd testing expenses of \$12 per cow on a 14,000 lb. cow.

RETURN TO LABOR, FACILITIES AND LIVESTOCK - These returns remain after paying direct cash costs and market value for home raised feeds and bedding.

FIXED COSTS - Include those costs which tend to continue regardless of whether production takes place.

CAPITAL INVESTED - Includes \$1,500 per head for cow and replacement plus the following assumptions regarding buildings (including feed storage) and equipment.

	Old	New Low Cost	New Mod. Cost
Buildings	\$500	\$1,200	\$1,500
Equipment	600	800	1,000

LABOR AND MANAGEMENT CHARGE - Annual labor hours required to care for cow and replacement times desired hourly rate. Typical hourly labor requirements per cow unit are:

	40 Cows	75 Cows	100 Cows
Stanchion, Conventional	85	--	--
Stanchion, Mechanized	75	65	60
Free Stall	65	50	40

RETURN PER DOLLAR INVESTED - Divide returns to capital (after paying noted labor charge and depreciation, taxes and insurance on buildings and equipment at 7% and 11%, respectively) by noted investment.

YEARS TO REPAY DEBT - Divide noted debt by cash available after paying noted labor charges, taxes and insurance on buildings and equipment at 1.5% and .5% rates, respectively, and 8% interest on debt (16% on 1/2 debt).

ESTIMATED COSTS AND RETURNS - SHORT AND LONG RUN
(per cow unit with replacements at 1:1 basis)

<u>CASH INCOME</u>	<u>This Year</u>		<u>My Farm</u>	<u>Next 3-5 Years</u>	
Milk sold, pounds	11,000	15,000	_____	11,000	15,000
Milk price (\$12.75 & \$13.50)	\$1,400	\$1,910	_____	\$1,485	\$2,025
Cull cow and calf sales	215	215	_____	265	265
Total Cash Income (1)	\$1,615	\$2,125	_____	\$1,750	\$2,290
 <u>VARIABLE EXPENSES</u>					
Feed costs (high silage)					
Corn equiv. - 60 & 90 bu. @ \$2.40	144	216	_____ @ \$2.80	168	252
Corn silage - 11.5 tons @ \$18	207	207	_____ @ \$20	230	230
Hay - 4.8 tons @ \$70	336	336	_____ @ \$55	264	264
Pasture	--	--	_____	--	--
Protein @ \$12	48	96	_____ @ \$13	52	104
Milk replacer	6	6	_____	7	7
Salt and mineral	10	10	_____	12	12
Total Feed Costs (2)	\$751	\$871	_____	\$733	\$869
 <u>OTHER VARIABLE COSTS</u>					
Hired labor	--	--	_____	--	--
Health	27	30	_____	30	35
Breeding	20	30	_____	25	35
Power and fuel	50	50	_____	65	65
Insurance on livestock	8	8	_____	10	10
Repairs	35	35	_____	40	40
Bedding	30	30	_____	30	30
Supplies, testing, misc.	20	30	_____	25	35
Total Other Costs (3)	\$190	\$213	_____	\$225	\$250
Total Variable Costs (2 + 3) (4)	\$941	\$1,088	_____	\$958	\$1,119
Return to Labor, Facilities and Livestock (1 - 4) (5)	\$674	\$1,037	_____	\$792	\$1,171
 <u>FIXED COSTS</u>					
Buildings (\$1,200 @ 10%)			_____	120	120
Equipment (\$1,000 @ 15%)			_____	150	150
Livestock (\$1,500 @ 12%)			_____	192	192
Labor & management charge			_____	300	300
Total Fixed Costs (6)			_____	\$762	\$762
Return Over All Costs (5 - 6) (7)			_____	\$30	\$409

PROJECTED PROFITABILITY & DEBT REPAYMENT UNDER VARYING LABOR CHARGES & PRODUCTION

<u>With Labor Charge Of And Production/Cow</u>	<u>Return To Facilities And Livestock</u>	<u>Return/Dollar Invested</u>		<u>Years To Repay Debt</u>	
		<u>Invest./Cow-Facilities & Livestock</u>		<u>Level Of Debt/Cow</u>	
		\$2,500 (percent return)	\$5,000	\$2,000 (years required)	\$3,500
<u>\$250 per cow</u>					
12,000	\$ 653	13.7	7.0	4.4	11.6
14,000	832	17.1	10.5	3.2	7.3
16,000	1,003	23.7	14.0	2.5	5.4
<u>\$350 per cow</u>					
12,000	\$ 553	10.9	5.0	7.1	17.2
14,000	732	14.3	8.5	3.8	9.2
16,000	903	20.9	12.0	2.8	6.3

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