MINNESOTA FARM MANAGEMENT SERVICE NOTES

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COMPARATIVE COSTS AND RETURNS FROM CROPS IN PINE COUNTY

Twenty-seven farmers near Askov in Pine County cooperated with the Farm Management Department for three years, 1925 to 1927, in a study of farming costs. Some results of this study are presented on page 2. These farms were small, averaging about 56 acres of crop land per farm. The land is red clay loam originally covered with heavy pine timber. The difficulty of clearing the land of stumps and stones is an important factor in limiting the size of these farms. The principal class of stock is dairy cattle. They furnish more than half of the farm income. Some hogs and poultry are also raised.

The six crops listed in Table I occupy 95 per cent of the total crop acreage on these farms. The grain, hay and silage are raised for feed. The potatoes and rutabagas are cash crops, altho culls and any unsalable crop surpluses are fed to livestock.

In the last number of Farm Management Service Notes attention was called to the difficulties involved in obtaining absolute costs of farm production. The same qualifications apply to this study. However, the costs and returns presented are computed on a comparable basis and should provide a valuable basis for planning a profitable xxx cropping system for farms in this general locality.

The average cost for the three year period is shown except in the case of hay. The drought of 1926 resulted in such a complete failure of the hay crop that it did not seem fair to include figures for that year, hence this is a two year average. Man labor is charged at 25 cents per hour and horse work at 11½ cents in computing these costs. The returns for the feeding crops are based on the prevailing market prices at which they were charged to the livestock which consumed them during this period. The returns from potatoes and rutabagas, on the other hand, are computed on the basis of the average price of these crops at Askov during the past ten years. The price of rutabagas for the ten year period almost exactly coincides with that during the three years of the study, but the average price for potatoes for the three years was 15 cents per bushel higher than the ten year average.

Some general conclusions as to profitable cropping systems for farms in this section of the state might be drawn from these comparisons. Potatoes and rutabagas paid market price for all the other factors of production and left the farmer an average reward of 84 cents per hour for his services. On farms with a limited acreage it is important to raise an intensive crop which will provide a market for a large amount of labor in order to get a business large enough to be profitable. This is especially important on many of these farms where considerable family labor is available. These crops provide for its profitable utilization.

Feed crops, on the other hand, made an average return for labor of only 35 cents. Silage, while providing a considerable amount of feed per acre, involves considerable labor and expense.

In general, one may say that as large an acreage of potatoes and rutabagas should be grown as can be fitted into the rotation and for which labor can be supplied. Enough hay should be raised to supply the livestock necessary to provide all year employment and maintenance of soil fertility, and only enough small grain to provide a nurse crop for the hay seeding. Silage should be limited to providing the succulence needed for the dairy herd.

TABLE I

Crop Costs and Returns per Acre - 3 Year Average
Pine County - 1927

	Small grain	Silage	Tame hay	Wild hay	Potatoes	Rutabagas
Man hours	14	35	8	7	65	91
Horse hours*	23	56	11	9	68	61
Man labor	$3.50	$8.75	$2.00	$1.75	$ 16.25	$22.75
Horse work	2.65	6.44	1.27	1.04	7.82	7.02
Seed	2.00	1.55	2.25	---	10.59	.58
Twine	.35	.47	---	---	---	---
Spray	---	---	---	---	.62	---
Thresh or fill silo	1.44	1.80	---	---	---	---
Manure and fertilizer	6.72	10.16	2.64	---	8.92	8.41
Machine charge	.99	2.59	.90	.90	2.70	1.15
Rock picking	.74	.91	.02	---	.95	.56
Miscellaneous	.10	.44	---	---	.54	1.71
Operating costs	18.49	33.11	9.08	3.69	48.19	42.18
Land charge	5.00	5.00	5.00	2.50	5.00	5.00
Total costs	23.49	38.11	14.08	6.19	53.19	47.18
Credits	1.03	1.97	.20	.03	1.19	2.43
Net cost	$22.46	$36.14	$13.88	$6.16	$52.00	$ 44.75
Yield per acre	41 bu.	5½ T.	1½T.	1 T.	124 bu.	8½ T.
Cost per unit	.55	6.57	9.25	6.16	.42	5.42
Market price	.56	5.50	12.50	8.00	.75	11.50
Return per hr. for labor	.29	.08	.86	.51	.88	.80

*Tractor hours have been reduced to a horse equivalent basis.

The cost and return figures presented are averages for a group of farms for a three year period. Obviously, the data for any one year or any one farm would vary widely from this average. However, the same relative ranking of crops is apparent in a study of the individual farm figures. A study of these individual figures, however, brings out a striking difference in production costs between different farms. The cost of small grain varied during the three years from 26 to 92 cents per bushel, of silage from $3.61 to $14.47 per ton, of tame hay from $4.63 to $25.54 per ton, of wild hay from $3.00 to $14.55 per ton, of potatoes from $0.19 to $2.60 per bushel, and rutabagas from $2.11 to $15.25 per ton. The most important factor responsible for this variation is yield. This is shown for potatoes in Table II.

TABLE II
The Effect of Yield on Cost and Returns from
Potatoes - Pine County - 1927

Yield group	Number farms	Average yield	Cost per acre	Cost per bushel	Return per hour man labor
Under 75 bu.	7	58	$43.96	$0.75	$0.04
75 - 100 "	5	87	45.64	.52	.31
100 - 125 "	6	112	50.14	.45	.45
Over 125 "	7	145	54.80	.38	.64

Altho the cost per acre is greater for the higher yielding fields the cost per bushel decreases as yield increases. The cost per acre for the high yielding group is only one-fourth greater than for the low group but the return per hour is 16 times as great. This same relation between yield and cost holds for the other crops as well. The use of improved varieties of crops, better seedbed preparation, the use of sufficient manure and fertilizer, rotations that maintain soil productivity and improved cultural practices, in general are important factors in increasing the reward the farmer receives for the labor he expends on his crops.

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