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UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

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SOME RECORDS OF GRASSLAND FARMING IN WISCONSIN AND MINNESOTA

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SCS-TP-94

WASHINGTON 25, D. C.

July 1950

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Grassland farming has been described¹ as "a system of farming involving the use of grass as a major production element in the cropping system." As used in this report, it consists of following a rotation in which hay or pasture is on the land at least two-thirds of the time. A typical rotation meeting this requirement is one of corn, grain, and 4 years of hay. Grassland farming does not exclude the growing of corn on the gentle, less erodible slopes of the farm. The length of rotation followed will depend partly upon the erosion hazard of a field. Its principal aim, however, is "more land in grass more of the time--some land in grass all of the time"² (fig. 1, p. 2).

In order to obtain information about the results of grassland farming, a survey was conducted in Wisconsin and Minnesota during the winter of 1949 and 1950. Soil Conservation Service workers assigned to soil conservation districts obtained the views of farmers in their districts who had experience in grassland farming. Figure 2, page 3, shows the location, by counties, of grassland farmers and of the farmers interviewed. Each farmer had practiced grassland farming for at least 3 years, many for 5 to 10 years or longer. This report presents information on the results of grassland farming on these farms. It does not imply that the farmers were following the system best adapted to their particular farms.

RESULTS OF THE SURVEYS

The views expressed by the farmers included in the detailed survey provided valuable information on the results of grassland farming.

¹Bell, F. G. The Relation of Grassland Farming to Soil and Water Conservation. Agr. Engin. 23: 247-248. 1942.

²University of Wisconsin, College of Agriculture, Grassland Committee. Grassland Farming for Wisconsin. Wis. Agr. Expt. Sta., Stencil, Bul. 4, 15 pp. Rev. 1949.

FIGURE 1.--An improved, well-managed, Wisconsin pasture.

Figure 2.- GRASSLAND FARMS IN WISCONSIN AND MINNESOTA

② Number in circle indicates the number of grassland farms in each county from which detailed reports were obtained.

4 Uncircled number indicates additional grassland farms in each county, farmers not interviewed.

1. Reasons for changing to grassland farming

Twenty farmers changed to grassland farming in order to control erosion. Those who had farms on hummocky land considered that strip cropping and terracing were impractical for such land. Ten farmers thought that there would be less work. Fourteen thought that grassland farming would be less expensive than short-rotation farming.

2. Changes made in crop rotations

Farmers engaged in grassland farming have about one-third as much corn, two-thirds as much grain, and nearly twice as much hay as they had before. The amount of land in corn is usually small, and some farmers do not grow any of this crop. Those who still grow corn have generally shifted production from the hill land to the more gently sloping land. Most of them have some land that is in hay all of the time except when reseeding is necessary.

On the basis of 100 acres of crop land, the average amount of land in different crops before changing to grassland farming was 24 acres of corn, 32 of grain, and 44 of hay. After the program was fully established, the average amount of land in corn, grain, and hay was 5, 19, and 76 acres, respectively.

3. Quality of hay

Sixteen farmers stated that the quality of hay now was much better than before, eight observed no difference, and one thought that the hay was now of poorer quality than before.

Haying is now the major harvest since the farmers have nearly twice as many acres in hay as before. They clip and pasture some of the hayland early in order to control maturity. This permits them to mow at the best time to get hay of high quality. Corn cultivation does not interfere with hay making. Several thought that they had poorer quality hay under the old system due to the fact that they would "lay by" the corn before starting to mow the second crop.

4. Pasture program now being followed

Eighteen farmers renovated their pastures, and the average area of good, productive legume-grass pasture on these farms is 20

acres. Twenty of the 25 farmers practice controlled or rotational grazing on their pasture land. Most of them have temporary electric fences for internal fencing. They find it easy to control grazing by this means. These farmers definitely see the need of pasture renovation and controlled grazing.

5. Changes in livestock

Dairy

Twenty-one farmers increased, two decreased, and two did not change the number of dairy cows. On the average, there were 21 milking cows per farm before changing to grassland agriculture and 31 afterwards. It might be expected that these farmers would be changing to breeds capable of consuming more roughage than the smaller breeds. Only one farmer reported a change of dairy breed--from Jersey to Holstein. Of the 19 reporting on changes in livestock, 9 have Guernseys and 10 have Holsteins.

Beef

Only four of the farmers have beef cattle. Two sold their dairy stock and changed to beef, and the other two have both beef and dairy cattle. One farmer increased his dairy herd from 17 to 40 cows and his beef herd from 23 to 40 head. His change in rotation was from corn-grain-hay to corn-grain-2 years of hay-2 years of pasture.

Hogs

Twenty of the 25 farmers raised hogs before changing to grassland farming and 10 continued to raise them afterward. The average number of hogs on the 20 farms was 29 head before the change and 10 after. Evidently, although grassland farming may reduce the hog enterprise, it does not necessarily eliminate it.

Sheep

Sheep-raising is a relatively minor enterprise on these farms. Before grassland farming, four raised sheep; of these, three went out of the sheep business and one decreased his flock to one-third the former size. One farmer who had no sheep now has 40 head.

Chickens

Grassland farming apparently had very little effect on the chicken enterprise. Two farmers went out of poultry, whereas 4 now have chickens who had none before. The average number of hens reported for 17 farms was 180 before changing to grassland farming and 190 afterward.

6. Changes in farm buildings made necessary by changes in livestock enterprise

Barns

Of the 21 who reported, 9 either had to build a new barn or build additions to existing structures; and 5 made changes within the barn, such as eliminating horse stalls or using the corn crib and hog house for young stock. Five reported that no changes were necessary.

Silos

Before grassland farming, 19 used corn silage, 2 grass silage, and 4 none. Now 4 are using corn silage, 13 grass silage, and 8 none. These changes in type of silage and numbers of livestock resulted in certain silo adjustments. Fifteen farmers built new silos to replace old silos or to assure having silos strong enough for grass silage. Two added to existing silos, 8 reported no change.

Several are using other buildings such as hog houses and corn cribs for storage or for young stock. Several report that no changes were required, probably indicating that the buildings that were not fully utilized with the smaller numbers of livestock before grassland farming are now adequate.

7. Amount of commercial fertilizer used

Fifteen farmers report that they are using more fertilizer in grassland farming than before. Ten of these are using at least twice as much as before. Most of the fertilizer is being used on grain and as top dressing on hay. Some have not increased the amount of commercial fertilizer. Six report no change in rate, and 4 used no fertilizer before and are not applying any in grassland farming.

8. Changes in machinery

Nine of the group now own a forage harvester or have a part interest in one. Eight sold their corn equipment and three are using a field cultivator in place of the plow. Several believed their machinery expenses to be less, now that they are concentrating largely on hay.

9. Labor requirements

Seventeen reported that less labor was required in grassland farming. Nine of these reported that the labor required now was about one hired man less than before. Five reported no noticeable change as far as help was concerned but were of the opinion that the work is now easier.

10. Problems in grassland farming

Bedding

Bedding is the principal problem for seven of these farmers. Eighteen report, however, that this is no problem on their farms. Those who follow a definite rotation and harvest grain have no bedding problem. They also have enough concentrates and use a minimum of purchased feed.

Adequate feed production in dry years

Several reported that during dry years they were short of feed. This was apparently due to the low yield of hay when rainfall was low. They were of the opinion that some corn would be necessary to insure against low hay yield. A better method, perhaps, would be to carry over feed from surplus years to guard against inevitable periods of low rainfall.

Changes Resulting from Grassland Farming*

		Before	After
Dairy cows, average number		21	31
Hogs, average number		29	10
Chickens, average number		180	190
Barn		Adequate	9 built more room
Silo		Adequate	15 built new silos
Grass silage.	No. of farms	2	13
Corn silage	do.	19	4
No silage	do.	4	8
Fertilizer		-	15 using more
Labor		-	17 report less needed

*Compiled from data obtained from 25 grassland farmers in Wisconsin and Minnesota.

LA CROSSE STATION FARM AND HERD RECORD

This ridge-land farm, consisting of 50 acres of crop land and 35 acres of pasture land, was purchased by the State of Wisconsin in 1932. At that time, the productivity of the land was low and several fields were severely eroded. The productive capacity during the period 1932-47 is shown in figure 3, page 9. From 1939 to 1940, the land was cropped to about a corn-grain-hay-hay rotation. One-hundred and twenty-five pounds per acre of 4-12-4 fertilizer were applied on the corn and 200 pounds per acre of 0-20-20 on the grain. Some pasture renovating was started in 1937.

Beginning in 1940, longer grassland rotations were established on the fields so that for the period 1940-47 the average crop land rotation was about corn 1, grain $1\frac{1}{2}$, and hay 4. The rotation followed on the steepest slopes was grain 1 year, hay 4 or 5 years. Fertilizer practices were changed to the use of 0-20-20 on grain at the rate of 350 pounds per acre, and only barnyard manure on corn. The pasture renovation program was greatly expanded so that two-thirds of the pasture land was renovated and is growing the much more productive alfalfa-brome grass mixture instead of the relatively unproductive bluegrass.

During the period 1933-35, in order to maintain the 9 milk cows on the farm, it was necessary to supplement the home-grown feed by the purchase of \$27 worth of feed per cow. For the period 1945-47, on the other hand, enough home-grown feed was produced to maintain 21 milk cows by purchasing only \$8 worth of feed per cow. During the same period, butterfat production increased from 2,400 to 5,900 pounds per year. The amount expended for feed purchased is the actual cash outlay for all purchased feed. The milking cows are fed at the rate of 1 pound of concentrate to 4 pounds of milk produced, or about 1,600 pounds per cow per year. Normally, since 1940, the only feed purchased has been protein supplement. There has been no problem of having sufficient bedding from the straw produced in the $1-1\frac{1}{2}-4$ rotation.

This increase in carrying capacity on the La Crosse Station farm was obtained by using longer rotations, applying liberal amounts of commercial fertilizer and lime, and following adequate conservation practices including crop residue, contour strip cropping, terracing, and pasture renovation.

FIGURE 3:- LA CROSSE STATION HERD RECORD