

## Big Operations on Small Farms

Though the Farm Magazine prefers to use articles that deal particularly with the Northwest, the following, by Earl W. Gage, of New York, should be of interest to our readers.—Editor.

THE man who lives on a small farm must carry on intensive farming operations to make a profit that will show well alongside the man who has several hundred acres. There is probably no region of the United States where this has been found more true than in New England, which is pre-eminently a section of small farms, due largely to the generally broken character of the country, the farming land being located in small areas scattered among the hills. Since the farms are small a unique method of intensive farming has followed which makes a place of 40 to 50 acres very profitable, and which serves to point out to farmers in other portions of the country the most advisable methods of succeeding with a small farm.

Inasmuch as this land has already been tilled longer than good land will bear an exploitive system of farming, live stock has been found a necessity. And the most intensive form of stock farming is dairy farming. Taking the northern states of the union as a whole, owing to climate and topography, the land is in general adapted to the growth of grass and trees. The fact that grass is so much at home in these states has led to a serious fault in northern dairying, namely, mismanagement of grass lands. Closely associated with poor management of grass lands is the failure to utilize other crops available for the northern regions, especially corn. What is most needed is that sufficient attention be given to the selection of seed in order to develop strains of corn fitted to the requirements of the different sections.

One dairy farmer, one a forty-acre farm, raises all the roughage and some of the grain for forty head of cattle, two teams of horses, and twenty head of sheep. He is also able to produce from three to four acres of potatoes each year, which are sold to the nearest city market for highest prices, delivered direct to consumers. About twelve acres of corn are grown each year for silage, nearly as much grain, a mixture of oats and barley, while the remainder of the forty acres, aside from the potato patch, is devoted to the hay crop. The rotation on this farm comprises one year of corn, one of small grain, and one of clover hay, while part of the land is run for mixed hay a second year. The land is seldom left in hay more than two years before it is again plowed up for corn, making either a three-year or a four-year rotation.

The manure is mostly applied in the late summer and fall with a spreader, both as a top-dressing to the new seeding or other grass land, and to the land to be used for corn the next season. This is applied at the rate of ten tons to the acre for either purpose. The seeding is done with the grain in the spring. Mammoth clover is seeded at the rate of twelve to fourteen pounds to the acre, with two to three pounds of redtop and four quarts of timothy. The result of the short rotation, the frequent manuring, and the heavy seeding is a crop of three tons of hay to the acre at one cutting. Other crops yield in proportion, so that this farm furnishes feed for so large an amount of stock that it seems unreasonable to the average experienced dairyman.

Another man who farms on ninety-six acres, of which a scant thirty is tillable, about thirty more being in pasture and the remainder in woodland, is making wonderful headway for the size of his farm, and is putting the way to farmers everywhere. This farm produces all the coarse fodder for twenty-five milch cows, fifteen young cattle, and three teams of horses. About six acres are put in corn for silage each year, two acres in peas and oats for hay, and

the remainder is in hay. Hay is raised on any field two years only, as a rule, but part of the land sometimes runs a third year. The first crop of hay is cut very early, usually beginning about June 25, and a second crop is cut at the early end of August. The annual yield per acre averages very close to four tons. The newly seeded fields often produce three tons at the first cutting and two the second, of the finest quality of hay, mostly clover.

Commercial fertilizer is used only on the corn crop, 200 pounds to the acre being used. The manure from the relatively large herd is applied to all crops, on the corn land during winter or spring and as a top-dressing on the grass. Back in 1892 this farm could not support more than twelve cows and a yoke of oxen. It has been raised out of this condition into the present by first applying commercial fertilizer, especially that high in potash, to all the land until a good clover stand was obtained. Then the further increase was accomplished by the use of the clover in increasing the number of live stock as well as the humus in the soil, and the increase of live stock was further aided by the additional manure. After the clover was once established the use of commercial fertilizer, with the exception of that used on the corn, was discontinued.

Within the city limits of Providence, R. I., there is a worthy example of what a man may do with a small farm if he works and thinks. On sixty acres are grown silage, soiling crops, and hay sufficient for three teams of horses, a saddle horse, and sixty cows the whole year and forty additional cows for nine months. The first year the cropping system was established, four carloads of hay were purchased, the next one carload, but today none is purchased, but two carloads were purchased because it is deemed advisable to keep the forty additional cows for the winter months. Enough hay was furnished from oats and peas, millet and other crops, to supply that needed for the original number of cows, and enough mixed clover and timothy was grown for the horses.

The system carried on on this farm is adapted to the man living near the city, where the demand for milk delivered at the consumer's door is good, so good that the farmer needs a greater proportion of silage or other succulent feed, even at the cost of buying additional hay. The method calls for crops which furnish green feed from the middle of May to November 1. So much of each crop as may be is fed. When a crop reaches the stage of maturity where it would no longer be fit to feed green, it is made into hay or put in the silo. This allows of increasing the quantity of succulent feed without using all of the land for corn, and thus distributes the labor of men and teams through the season in a way which could not be done in growing the same acreage of corn alone.

Rye sown in September is ordinarily fit to cut for feed by the middle of May and lasts until June 10. Winter wheat and vetch sown September 20 is fit to feed from June 10 to July 1, and any left over is used for hay. Oats and peas sown first April 18 will be fit to feed July 1, and successive seedings, even up to July 1 on low lands, will furnish green feed until September 1. If the later seedings must be omitted for suitable lands, sweet corn is planted May 15 and will fill the gap until a frost comes. Barley sown from June 20 to August 15 in successive lots will furnish feed for September and October. Under any other circumstances it would not seem economical for these men to follow this system, for summer feeding of silage saves the daily labor of cutting and hauling a green crop on any farm where there is land enough to use for growing good clover hay in a rotation with silage corn.

Another dairy farmer has a farm comprising 74 acres of tilled land, on which he keeps 70 head of grown

cattle, 25 young stock, and three teams of horses, and all the roughage for this stock is provided for the entire year, except that some of the young cattle are kept on hired pastures during the summer. The pastures on the farm are considered only as exercising land for the 70 head of cows.

The rotation is usually one of three years, but is sometimes extended to four. Corn for silage is grown one year. As soon as the crop is off in September the land is harrowed thoroughly and sown broadcast to rye. As early the next spring as a team can be put on the land, the rye is gone over four or five times with the smoothing harrow and seeded broadcast before the last harrowing with 15 pounds of clover to the acre. The harrowing is done entirely regardless of the rye and with the sole purpose of preparing a good seed bed for the clover. The rye is so hardy that it soon recovers from the harrowing and make an excellent crop for green feed or other uses. Some of it is cut and fed green, but the greater part is made into hay or chopped into one of the silos, which by this time is empty. A little of the rye, sufficient for seed the next year, is left to ripen. When the season is not too dry two crops of clover are cut after the rye is cut green, and one after the rye cut for grain. Then the clover is cut two or three times the second year, according to the season.

In most instances this ends the rotation and corn is planted. In some lots, however, this rotation is varied by planting corn two years in succession before seeding clover. In that case the corn stubble of the first year is sown to rye just the same, and the rye is plowed under for the second crop of corn. Rye follows the corn again the second year and the clover is seeded in this the next spring.

The several sources of silage give sufficient succulent food to take the place of the scanty pasturage, and the variety of crops used no doubt makes the silage the more palatable. The manure is hauled from the barn every day in the year, for at most seasons there is some place to spread it. About 800 loads a year are produced, and this covers all the land once over. Canadian hardwood ashes have been applied to each field in succession for the purpose of improving the clover stand. This has insured two and three crops a year.

The essentials of the dairy farm is growing feed for the cows by use of the short rotation wherever possible; producing all the clover hay and corn possible; liming the land for clover when needed; better management, especially in the use of manure, of land which is adapted to short rotations, and utilizing various catch crops which give succulent feed during the summer season.

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