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MAKING A LIVING ON A TIMBER FARM

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Fig. 1. The First Buildings Erected on One Timber Farm

A modest investment in buildings left this beginner in the farming business with necessary funds for living expenses so that he could devote most of his time to the clearing of land.

The problem confronting a farmer in the timber country is that of making a living on a small area of tillable land, usually less than 40 acres, at the same time that he is clearing additional land and making such improvements in the way of buildings and fences as go with developing a farm. In planning the farm business on a limited acreage, it is essential to keep in mind that operating a small farm is mainly a means of getting a job, and that the return depends largely on the amount of productive work that can be devised, such as caring for dairy cows or other livestock and raising crops; therefore the farmer on a limited acreage should plan to keep such kinds of livestock as provide a market for a large amount of labor in addition to utilizing feed. For

NOTE: The suggestions herein made are based on 395 records of the year's business furnished by farmers in Beltrami and Itasca counties to the Division of Agronomy and Farm Management for the years 1918, 1919, and 1920; upon a limited amount of figures from other farmers and from observations of Extension workers and county agents as to the practices of successful farmers in the northeastern section of the state.

the same reason, the rotation should include a reasonable acreage of some crop such as potatoes, that requires a large amount of labor per acre, and that holds a possibility for a large income per acre.

BUILDINGS: HOW GOOD SHOULD THEY BE

Several years ago, when we visited a new settler in the timber country, he showed us a nice new house and a nice new barn but his barn was nearly empty, as he had only five acres under plow and all that he could do with this amount of land was to secure feed for his team and cow. When we passed that way a few years later, another settler had acquired the farm at a figure that barely covered the cost of the buildings as the farmer who built the good house and barn had been left without sufficient capital with which to develop the farm.

The character of the house is a question of what one can afford for the comfort of the family, but in the case of other buildings, it is a question (1) as to whether the proposed building will each year add a sum to the farm income greater than the interest on the investment plus the repairs and the depreciation; and (2) if one is short of capital it is not only a question of whether a proposed investment will pay a profit but whether it is the most profitable use of one's limited resources. For example, the calculations might show that a new barn, by saving in labor and slight extra returns from the livestock, would pay a small profit, but possibly the same money invested in land clearing would almost double the production of the farm.

HOW MUCH MACHINERY

One of the difficulties confronting the timber farmer is that he has need at some season of the year for almost every piece of machinery required on a well-developed farm of 160 to 320 acres such as binder, drill, manure spreader, potato digger, planter, sprayer, etc. If he invests in all the machinery for which he has need at some time during the year, the depreciation, interest, and repairs on his machinery may come to a considerable part of the value of his crop.

One farmer, who was raising about 8 acres of small grain per year, made the following calculation as to the yearly cost of owning a binder costing \$175.

Depreciation @ 7 per cent of \$175.....	\$12.25
Interest on average value of \$87.50 @ 8 per cent ($\frac{1}{2}$ of \$175=\$87.50)	7.00
Taxes, shelter, and repairs, estimated.....	5.00
	<hr/>
Total yearly cost.....	\$19.25
Cost per acre.....	\$2.41

This farmer concluded that he preferred to hire his neighbor to cut his grain at \$1.50 per acre and furnish two horses until he had a larger acreage of grain, even tho there might be some risk that he could not get a rented binder on just the day that he wanted it. Before purchasing any piece of machinery the cost per year and per acre for interest, depreciation, and repairs should be calculated and set against the cost of hiring the machine or doing the work by hand. When only a few acres are farmed it is more worth while to get along with machinery that is old and nearly worn out than on large farms, as on a small farm a break that causes a loss of a day's time will not result in serious damage to the crop. Frequently two neighbors can arrange that each will own certain machines and that each will rent to the other. Potato diggers and binders require three or four horses and except for occasionally using a piece of heavy machinery only two are needed until one has more than 30 or 40 acres of tillable land. Thus two neighbors can coöperate in the use of horses as well as in the use of machinery.

ADOPT A GOOD CROPPING SYSTEM

In planning the cropping system for a timber farm, one should keep in mind: (1) the need of an intensive cash crop so that the limited amount of land may give profitable employment to the farmer and his family; and (2) the need for an abundant supply of winter forage for the livestock. In practice this usually means that the cropping system centers around potatoes and hay with some corn for fodder or silage in the districts best adapted to corn growing and with sufficient small grain, usually oats, to serve as a nurse crop in seeding down for hay and to provide a part of the grain needed for feed.

Farm records for 398 farms in Beltrami and Itasca counties show that in those localities 45 per cent or nearly one half of the crop land is devoted to tame hay. In addition there were 5 acres of wild hay per farm. This would suggest a four-year rotation as follows:

First year, potatoes

Second year, small grain, mostly oats (seeded to clover and timothy)

Third year, clover and timothy

Fourth year, clover and timothy.

This plan is particularly adapted to sections where corn is not grown to any extent, as where little corn is grown a large acreage of hay is required in order to secure sufficient winter forage.

For sections where corn does fairly well, and particularly on the lighter soils, a three-year rotation is suggested as follows:

First year, potatoes and corn

Second year, small grain, mostly oats (seeded to clover and timothy)

Third year, clover and timothy.

Potatoes are particularly adapted to the needs of the timber farmer as they give an opportunity of applying a large amount of labor to each acre. One should remember that the pay from farming is usually somewhat in proportion to the time put in, just as when one is working out by the day. Each acre of potatoes will require from 50 to 100 hours of man labor or about five times the amount required by an acre of oats. Thus five acres of potatoes will give one man the equivalent of a job for one to two months while the same land devoted to oats would give him a job for only 8 or 10 days. Potatoes also have the advantage that they use the manure produced by the livestock to better advantage than any less intensive crop. A plan that is becoming increasingly popular is to apply the manure to the new seeding or hay meadow a year previous to the planting of the potatoes. This gives a big crop of hay with plenty of clover and grass roots to supply vegetable matter to the soil. As a result the potato crop is almost as large as if the manure were applied directly to the potatoes. The timber farmer should always remember that while potatoes are a desirable crop to include in the cropping system, they are highly speculative, as the price varies greatly from one year to another. The only way to have potatoes to sell when they are high is to grow a certain acreage each year. Those who expand their acreage when potatoes are high frequently have a big quantity to sell when potatoes are cheap, and few to sell when the price is high. In some localities where there are special markets, cabbage, berries or other truck crops may be substituted for potatoes. Rutabagas require even more labor than potatoes. Where there are not sufficient cattle to warrant a silo, enough rutabagas should be raised to provide at least 50 bushels per year for each dairy cow.

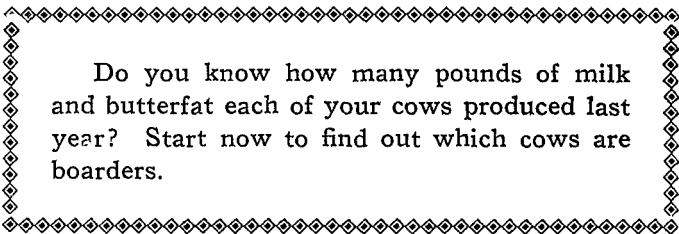
CHOOSE THE RIGHT TYPE OF LIVESTOCK

A frequent mistake of the new settler is to equip the farm with more livestock than can be well fed. This usually results in high feed bills and a discouraged farmer. Another common mistake is that a type of livestock is chosen that is not well adapted to local conditions. The following paragraphs are intended to give suggestions that will help farmers, particularly new settlers, to avoid these costly mistakes.

Dairy Cows

Usually dairy cows are the principal livestock on a timber-land farm. This is indicated by the 398 farm records from Itasca and Beltrami counties, which showed the average livestock per farm to be 4 cows, 4 other cattle, 5 sheep, 1 hog, 32 chickens, and 2 or 3 horses. Each dairy cow will usually require about 180 hours of labor per year for milking, feeding, and other chores, aside from

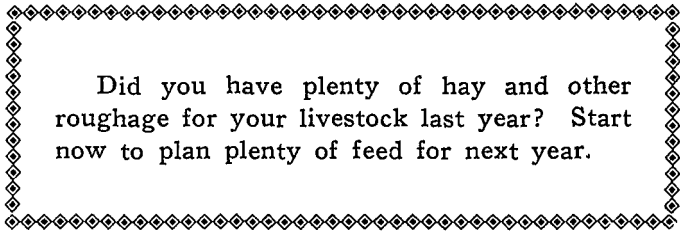
raising the feed. This amounts to about half an hour a day for an average of winter and summer, including the time that the cow is dry. Farmers in well-developed sections usually work from 3000 to 3600 hours per year, so that a family that cares for 10 cows has the equivalent of over half a year's employment in caring for the dairy herd. The pay per hour will depend on their skill in feeding, the price of feeds, the natural productivity of the cows, and the available market. The pay for these hours in one locality in Southeastern Minnesota for 1920 and 1921 has been found to vary from about 50 cents per hour to 12 cents less than nothing, according to the skill in feeding, the breeding, and care. In general, cows must produce about 200 pounds of butterfat per year in order to pay hired man's wages. A farmer in Koochiching County, who keeps 5 cows that produced an average of 330 pounds of butterfat in 1921 gives substantially the following as to his methods. "In 1914 I was induced to buy a pure-bred dairy sire by a representative of the College of Agriculture who attended a Farmer's Institute here, and by the grading up process I now have a herd that is from three-fourths to fifteen-sixteenths of the blood of the breed selected. Along with the grading up process, I have made it a practice to weigh the milk daily from each cow and to get a fat test once a month. I do not keep any heifers that do not produce 250 pounds of butterfat during their first milking year. For feed, I aim to provide for each cow all the good clover hay that she will eat, or about 2½ tons, 100 bushels of roots, and about 1200 pounds of grain." It is probable that the average cow in the timber country produces about 160 pounds of butterfat, but nearly every farmer in a few years could nearly double that production by following the methods adopted by this Koochiching County farmer.



Do you know how many pounds of milk and butterfat each of your cows produced last year? Start now to find out which cows are boarders.

When a farmer has plenty of help for milking cows and is short on feed, the young stock should be limited to the raising of dairy cows from well-bred dairy bulls that are needed to maintain the dairy herd at the desired size. Other calves may be killed at birth or fed on whole milk or skimmilk until old enough to sell for veal, according to which is the most profitable practice at any given time. In feeding whole milk, it is well to remember that the profit is secured from the

increase in value of the original weight of the calf. A calf may at birth weigh 80 pounds and be worth nothing. If by feeding it until old enough to be sold for veal the original 80 pounds may be sold for from 6 to 10 cents a pound, one can afford some loss in putting on gains. Ordinarily about 10 pounds of whole milk may be expected to make a pound of gain. The maximum profit will be secured by selling the calf as soon as the original 80 pounds have been made marketable. The state law requires that veal calves be at least three weeks old before they are offered for sale.



 Did you have plenty of hay and other roughage for your livestock last year? Start now to plan plenty of feed for next year.

In many sections in the timber country, hay is shipped in every year. In such a locality the price of hay is usually high and it is especially important to keep only the best producers. Under such conditions a poor cow may eat more dollars' worth of hay than her product is worth. Even where hay is usually abundant, it is always well to keep the number of livestock down to a point where one will have sufficient roughage even in a poor crop year. If one is located within easy hauling distance of lumber camps or cities that regularly ship in hay, it may be more profitable to sell some of the hay crop each year. Of course if any great number of farmers should follow this practice the local hay market would be over-supplied and hay would sell at the same prices as in other surplus sections.

Beef Cattle

Beef cattle are profitable where there are large quantities of cheap roughage to be utilized. Northern Minnesota has cheap pasture, but hay is usually high in price and a larger quantity is required than in regions farther south or west, as the snow is usually too deep for winter grazing. Furthermore, the problem of most farmers is to find a market for spare hours rather than for surplus feed. The labor required in caring for from 5 to 10 dairy cows would be ample to care for from 50 to 100 beef animals.

Hogs

The Itasca and Beltrami county farm records previously referred to, indicate that only one mature hog was kept per farm. This means that hogs were raised largely for home consumption. Corn and barley

in the timber country are usually from 50 to 100 per cent higher than in the sections of Minnesota having a surplus of these grains, while the hogs from both sections are largely marketed at the same price at South St. Paul. Even when one raises his own feed, it is worth the same as neighbors are paying for shipped in feed. Hogs are a profitable sideline if they can be fed largely on unmarketable potatoes or other unsalable feed, or on skimmilk not needed for calves to be raised for the dairy herd or for the family flock of chickens. Some grain may be purchased in order to supplement the skimmilk, as hogs do not make the best gains on skimmilk alone. In many places in northern Minnesota there is a good local market for pigs from 6 to 8 weeks old, and where it is desired to raise hogs for sale the most profit is sometimes secured from keeping several brood sows and selling the offspring largely as weanling pigs. However, it is obvious that only a few farmers can engage in this business without over-supplying the local market. Even with high priced feed, it usually pays well to fatten sufficient hogs to furnish the family with an abundant supply of meat, as hogs used in the family replace meat that would be purchased at the retail price of ham, lard, bacon, and shoulders. Unless fall pigs are to be raised, the most profit will usually be secured by keeping young sows as breeding stock and fattening them for market after weaning the pigs.

Poultry

The average number of chickens per farm in Beltrami and Itasca counties, as shown by the 398 records, was thirty-two. Several cases have come to our attention where flocks of from one hundred to five hundred birds have been profitable, but one should assure himself that he is adapted to the business by succeeding with a small flock before attempting the business on a larger scale. The large flocks are usually kept in communities that have been able to establish a special market for fancy eggs. The more successful flocks produce from 90 to 120 eggs per hen per year and each hen of the Leghorn or similar breeds requires about 60 pounds of grain and 6 pounds of meat scrap per year when kept in a yard. The meat scrap may be replaced by feeding them all the clabbered milk they will consume. Plymouth Rocks and similar breeds will require about 80 pounds of grain per hen and 10 pounds of meat scrap. On large farms a flock of 100 chickens will pick up a large part of its living, but on small farms raising but little grain and keeping but little livestock, the feed picked up is a relatively small item as is indicated by the few chickens kept per farm. Where feed is high priced, the chicken business should largely be centered around egg production,

chickens being raised only as a means of securing needed pullets. Where there is a special market for broilers from summer resort people there may be some profit in this phase of the business.

Sheep

Sheep are helpful as a means of subduing brush and utilizing pasture but as in the case of beef cattle, the profits from the summer pasture are frequently eaten up by high-priced hay in the winter. Farmers who are raising more hay and fodder than is required by the cows that can be milked by family labor and who do not have lumber camps or nearby cities competing for their surplus hay, may find a flock of sheep a good means of utilizing hay and forage and making more rapid progress in subduing brush than would be possible without them.

Land Clearing

The big handicap of the timber farmer is usually lack of tillable land and the only way that he can overcome it is to get his land under cultivation as rapidly as is possible and still do his clearing economically. Experience and experiments both agree that usually the economical method of clearing is to cut the brush, get the land into pasture grasses, and pasture for several years until the roots have rotted and the grass roots have put humus into the soil. There are some areas covered with brush and having only occasional stumps. In these the brush may be plowed under with a breaking plow after cutting brush that is too large to be broken down.

Each few acres added to the crop area usually greatly increase the net income, as any farm needs two horses, but two horses usually are sufficient for 40 acres of crops. In the same way any farm needs a wagon, plow, cultivator, drag, mowing machine, etc., but one of each of these tools is usually sufficient regardless of the size of the clearing, up to 40 acres. Thus if the size of the clearing is increased from 20 to 30 acres, the work is practically all done by the same men, horses and machinery as would have been on the place anyway, so that anything raised on the extra 10 acres above cost of seed and threshing is that much added to the farm income. When as much as 60 acres is under cultivation, one man usually does most of the work by using a three-horse team, and replacing his two-horse machinery with three-horse machinery. Again, at a later date the clearing becomes big enough to justify four horses and four-horse machinery, and one man covers twice as much ground as was covered with two horses and works no harder except for the extra chores connected with the added two horses. When this state is reached, the problems of the timber farm become the same as those of any general farm having similar soil, climatic, and market conditions.



Fig. 2. One Settler's Supply of Fuel

At the same time that one clears land he gets his fuel.

GET MOST OF THE LIVING FROM THE FARM

The records from Itasca and Beltrami counties show the wholesale value of farm products used in the family in 1918, 1919, and 1920 to have been \$422. The retail value of these products would have been much greater. Under present conditions, the wholesale value would be materially smaller than the figure given. The largest items in order of importance were dairy products, \$157, fuel \$75, poultry and eggs \$61, meat \$57, miscellaneous \$72. In addition to the foregoing items the farm furnishes a house to live in. In cities this item frequently requires from a fifth to a third of the family income.

A farmer usually sells his products at wholesale prices and buys his farm and household supplies at retail prices. As a result, his best opportunity to sell a part of his products at retail prices is to make every effort to have the farm provide as much of the family living as possible. This is particularly important on small farms where the cash income is likely to be quite limited.

If the farm is made to provide all the fuel, all the dairy and poultry products, all the vegetables and the meat, a family can live well on a very limited cash income. With this end in view particular attention should be given to having a farm garden of generous size and to preserving its products by canning, drying, or other means for winter use. Likewise in the winter particular attention should be given to preserving pork or other meat for summer use.

COMPUTING THE RETURNS

When one is developing a farm cash is always scarce, as a large part of one's time and money goes into the clearing of land and the erection of buildings and fences and in purchasing new pieces of machinery. Farmers sometimes feel that they have made little or nothing when as a matter of fact they have saved from \$300 to \$600 per year. The following figures show the calculation that one farmer made in order to determine the financial progress that he made during the year.

Resources:	Jan. 1, 1921	Jan. 1, 1922
Farm	\$6300	\$6300
Livestock	1506	1460
Machinery	385	418
Cash on hand and in bank.....	50	40
Total	\$8241	\$8218
 Deduct Debts:		
Mortgage	\$800	\$800
Note at bank.....	600	300
Total deductions	\$1400	\$1100
Net worth.....	\$6841	\$7118
Gain in net worth.....	277	

This farmer, according to his figures, has supported his family and saved \$277 during the year. This doesn't sound big but it is probable that not many mechanics and laborers in cities save that much per year, especially those who have a family of five children to support, as had this farmer. During the last eight years this farmer has had an annual increase in net worth of about \$400. Every farmer who makes a yearly calculation of this kind is likely to derive some encouragement from the fact that he may be gaining in net worth altho he is short of cash.

What has been your average increase or decrease in net worth for the last five years?

MINNESOTA BULLETINS OF VALUE TO FARMERS IN NORTHEASTERN MINNESOTA

Experiment Station Bulletin 180, Experiences of Northern Minnesota Settlers.

Bulletin 189, Forced vs. Delayed Systems of Clearing Stump Land.

Bulletin 196, Farm Development Studies in Northern Minnesota.

Special Bulletin 10, Care and Management of the Dairy Herd.

Special Bulletin 11, Dressing and Curing Meats on the Farm.

Special Bulletin 59, Planning the Farm Business.

Special Bulletin 60, Simple Steps in Land Clearing.

Special Bulletin 64, The Dairy Cow as a Market for Labor.