

consists of a cement silo, 12 1-2 x 30 feet inside measurement or the home farm, one 12 1-2 x 35 feet on the 900-acre farm and a smaller silo on the farm purchased three years ago. These silos allow of ample provision for winter feeding. Summer feeding is more of a problem on this somewhat light soil. It takes a heavy soil or lots of rainfall to ensure good pastures and in the average year the Groh pastures must be supplemented for a couple of months at least. This year provision was made for pasture shortage with 10 acres of the Zavitz pasture mixture. Better still, when the cows went out to grass, there were a few feet of silage left in each of the three silos. Between the two the cattle would not have suffered even had the summer been a dry one.

The Dairy Herd

The Groh farms are primarily devoted to dairying, but of the dairy herd itself I will say little at this time. The herd is worthy of more extended mention than I can give it here and the feeding and breeding methods followed by Mr. Groh and his son, will be dealt with fully in a later issue of Farm and Dairy. For 15 years they have been endeavoring to improve their herd by means of individual records and the use of the best pure bred sires obtainable. Just lately they have been combining feed records along with production records and are now weeding their herd on the basis of their ability to produce net profits. Half of the milk cows are pure bred Holsteins and the other half, good Holstein grades. The pure breeds will increase only in proportion as they prove themselves more economical producers than the grade animals in the herd. Briefly, the progress that has been made in this 15 years of work may be summed up in the statement that with one exception the poorest cow in the herd to-day is as good a producer as the best cow in the herd 15 years ago. The exception is an old cow with bad teeth, that is kept for breeding. Last year the 21 head milked averaged 8,145 lbs. of milk.

During a part of the year cream is sold to two ice cream parlors in the town of Preston. This cream must test 20 per cent. and be perfectly sweet. The price is \$1 a gallon. During the balance of the year, milk is sold to dealers in neighboring towns at 15 cents a gallon on the farm. Another important source of income is hogs, of which 50 are turned off annually. Practically everything grown on the farm except the wheat and sugar beets, are fed to live stock on the farm and the fertility returned to the soil. Even in the case of the sugar beets the pulp comes back from the factory.

The Buildings

The size of the barns that Mr. Groh erected almost a quarter of a century ago would lead one to suspect that even then he had overdone eyes on the land of his neighbors. This barn is 94 x 54 feet, surely very commodious for a farm with only 50 acres of workable land. An unusual feature of its construction, to me at least, was the covered manure pit occupying a space in the basement, 54 feet long and 40 feet wide. This manure shed, however, serves a double purpose. It makes a well sheltered exercising ground for the cows and the constant tramping back and fourth of stock beats the manure down solid and preserves a maximum quantity of the fertilizing ingredients.

The feed room is so arranged that the silo and root cellar empty into it. The granary is just above and the chaff is thrown through a chute into the same room. A large feed cart simplifies the distribution of feed to the herd. Litter carriers have not been installed because the ceilings are too low, but the Grohs have them in another barn and find them most convenient. The concrete cement manglers have been divided off by

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Feeding Value of Sprouted Wheat

NO reliable statistics have yet been made of the amount of wheat damaged by sprouting this year. Trade estimates have varied all the way from 10 per cent. to 25 per cent. of the Ontario wheat crop. Probably the truth is somewhere between the two. Even if the lower estimate is the correct one, there will be an immense amount of inferior wheat to be disposed of this fall and winter. The question that has to be decided is, can the wheat be disposed of to best advantage by marketing as grain or by feeding to stock and marketing on the hoof or in the milk can? Already grain dealers have established a lower price for smutty or sprouted wheat. Last week, for instance, good Ontario wheat was quoted at \$1



A Good Example of Tree Surgery.

If a tree house can be built in a season; but the venerable old tree that shades it cannot be replaced in 40 seasons if it is allowed to die because of damages sustained at one time or another. Hence the importance of tree surgery. The illustration herewith gives an idea of this new science; the holes in the tree have been properly treated and then filled with cement and its age extended indefinitely.—Photo, courtesy Forestry Branch, Ottawa.

to \$1.02, while sprouted or otherwise inferior wheat was quoted down as low as 70 cents, the latter quotation making the profitable feeding of wheat easily possible. Certainly it looks like "feed" to many farmers.

Wheat damaged by frost has practically the same feeding value as marketable wheat. That that has sprouted, however, loses in feeding value in proportion to the amount of growth, the proteins being changed to the amide form which is inferior for flesh production, and the starches being changed into sugar. The average loss from germination is probably between five and fifteen per cent., but very seldom reach the higher figure.

Its Feeding Value

The average value of wheat is best indicated by its analysis. In 100 lbs. of average wheat there are the following quantities of digestible nutrients: Protein, 10.2 lbs.; carbohydrates, 69.2 lbs.; and ether extract, 1.7 lbs. Compare this with the analysis of Indian corn: Protein, 7.9 lbs.; carbohydrates, 66.7 lbs.; and ether extract, 4.3 lbs. We see that wheat is considerably richer in protein, the flesh forming ingredient, slightly richer in carbohydrates, and decidedly poorer in fat. Wheat, therefore, furnishes a better balanced ra-

tion for farm animals than does corn. Especially is this true in the feeding of young and growing animals, a statement which is corroborated by the experience of feeders. Henry, in his "Feeds and Feeding," summarizes wheat as follows:

"What may be regarded as a satisfactory feed for all kinds of farm stock, in the hands of intelligent feeders. Mixed with corn, oats or bran it is superior to either alone for work horses. For fattening cattle and dairy cows, it not only furnishes abundance of nutrient, but through variety gives edge to the appetite. When on a visit to William Watson, the prince of American feeders, some years since, the writer found him feeding wheat of fine quality to sheep in preparation for a fat stock show. For sheep, this grain alone or mixed with others, may be fed in the entire range of whole condition; for other stock it should receive some form of preparation, either grinding, boiling or soaking. During mastication wheat and wheat flour adhere to the gums forming a pasty mass. This can be prevented by munging bran, corn meal or some such substance with the wheat or flour. Though a feed of great palatability and healthfulness, wheat does not equal corn for fattening purposes, yielding perhaps ten per cent. less nutrients."

Sprouted Wheat For Pigs

It is as a feed for pigs that Ontario farmers will most seriously consider the feeding value of their sprouted wheat. So important is this subject in the United States, that at least five stations have experimented carefully with the value of wheat meal as compared with corn meal. Summarizing the results of these experiments, Henry says: "The difference being so small, we may conclude that wheat meal and corn meal are practically of equal value for fattening swine." If what is of such a grain that it must be sold for 70 cents to 80 cents, it is a more economical feed than corn at its present price of 86 cents, or corn meal at \$2.25 a cwt.

In feeding wheat to dairy cows best results can be obtained by feeding a small quantity of wheat with a larger quantity of other grain, such for instance as oat chop with a small proportion of cottonseed or oil cake. The same is true with horses. In feeding sheep, good results have been obtained by feeding the wheat grain.

Many practical feeders assert that wheat is worth \$1 a bushel. Poultry men are willing to pay this much and more for good sound wheat, and probably the hens will pay more per bushel for wheat than any other class of farm stock. Where wheat is sound and in good condition, it will be marketed through the regular channels. Where damaged, it had better be fed at home where fully as much per bushel can be realized on it, and the holding back of damaged wheat will create a better market for the sound wheat that we have to market.

Diameter of the Silo

THE diameter of a silo should be determined by the amount of ensilage to be fed. If less than 1 1/2 inches of ensilage are removed daily, moulding is likely to start. The warmer the weather, the greater the depth of ensilage that should be removed. In winter 12 dairy cows would require 40 pounds a day will use up the right amount for a 14 foot silo, while in summer it would require 18 cows to use up the amount of ensilage that should be removed daily. For the 12 foot silo, cows in winter and 18 in summer; for the 16 foot silo, 17 cows in winter and 25 in summer. In the amount of ensilage fed daily determine the diameter of the silo and let the height determine the capacity.—North Dakota Experiment Station

Diversify Your

THE one-crop system is not dangerous in no region should the crop. The old saying, "It is not in one basket," is "The Rotation of Crops" farm practice which different food require a definite cycle of crops in order. This, if it is fertility, works for weeds, insect enemies, it also prevents the soil. This latter trouble is growing of the same as a given piece of

Plants feeding at the food elements, absorption of these particular can render them available, there comes a time when these plants naturally fed and harvested. All crop the soil. They manure, or feed on the root depths. When plough the deeper feeding ploughers without serious should they use the eventually, the available, and that soil

The depositor who from the bank with time to time, will, a turned market "Should continued overfits, withdrawals, with no "banks," we will soon Nature marks our check by giving us a "crop" does not pay profitable plant food bringing

What a Rotation

The successful expression general crop farm important facts:

1. The farm rotation cash or money crop.
2. It should also be or hoad crop.
3. It should have a feeder crop.
4. It should have a crop.
5. These crops should be as to most cost labor throughout the
6. The farmer should bulky feeds into milk meat products.
7. Each farmer in a



A Herd Number

Here we see at pasture of Farm and Dairy, 1915