

the principal feeds. It can be silaged or used as fodder corn. In order to have the cows maintain their flow of milk during the winter it is necessary to supply them with plenty of succulent and nutritious feeds. For the amount of feed per acre, the corn crop is one of the cheapest, and the silo is the best place in which to save it.

Another and very necessary crop for the dairyman is the clover crop. Peas and oats mixed also make a very good milk food. These three should form the main bulk of the coarse feed. The oat and pea crop should be cut when in the milk stage, and if properly cured make a very good milk feed. In connection with the coarse feeds the cows should be fed a liberal supply of grain feeds mixed so as to form a well-balanced ration. This ration should be arranged to give the cows at least  $2\frac{1}{4}$  lbs. of protein, 13 lbs. carbohydrates, and  $\frac{3}{4}$  lb. of digestible fat. The best feeds for the production of a large milk flow are those which contain the largest amount of protein.

Cows must be well fed in order to give profitable returns. The feeding should be regular, as the dairy cow is a creature of habit, and when a change is made in her food it should be done gradually. One point in feeding dairy cows should always be borne in mind that it takes a certain amount of feed to maintain the cow, and what is fed in excess goes for profit. The milking should be done at a regular time, and the intervals between milking should be as nearly alike as possible. The labor problem is one of the most difficult the dairyman has to contend with. All of the work with the cows must be done faithfully and well. If the cows are not milked clean it does not take long to decrease the flow of milk. So it does not take long to cut off the profits. Also one great necessity is to have a warm, airy, well-lighted and well-ventilated stable, and warm enough so that nothing will freeze in it in the coldest of weather. Last but not least is the watering of dairy cows, which should be done at least twice each day, at regular intervals, with water not colder than  $45^{\circ}$  Fahrenheit. The cows should also be salted three times each week at least, or better still a little each day.

## Raising Horses for Profit

By Alex. McCaskill

I want to impress upon the minds of farmers and breeders the great importance of producing the two following classes of horses: First, the carriage or coach horse with size, action, and all of the qualities that the market demands at the present time. And, second, the heavy draught horse, with all the shape, quality, style and action that can possibly be produced. These are the leading horses in our markets to-day; they are the most saleable, are in the strongest demand in all markets, and are the most profitable kinds to raise. In all American markets there is a strong demand for them, and with the revival of business throughout our country the demand for good horses is increasing, and we believe will continue to do so for many years to come. These kinds are also the classes that are demanded by the export trade, and this trade is the life and leading feature of our market. It has been increasing every year for the past four years, and has already become larger than the supply. And I believe from every indication that this export trade will continue to grow for many years to come.

These two classes have already advanced very much in price, and will sell for double the amount of money to day than they did in 1895. In the first place a breeder needs to get a good brood mare to begin with, whether it be for carriage or draught purposes. If he is going to raise carriage horses let him get a good carriage mare and then use the services of a carriage stallion. If he is going to raise draught horses get a good draught mare and use the service of a draught stallion. By raising the draught colt well the first winter and by keeping it growing right along, when it is three years old it can be broken to work. It should then do any ordinary work on the farm, and after

that its work will pay for its keeping until it is fit for the market. Sell off the older horses when they are four or five years old; they will then be ready for the market. I think a person could raise draught horses on a farm with as much profit as any other kind of live stock. I think there will always be a demand for draught horses. The lumbermen want them, the city trade needs them, and they are wanted in the British market. I saw a report a short time ago where McDonald, Fraser & Co., Glasgow, Scotland, sold 50 Canadian horses at prices ranging from 20 to 44 guineas each. If a farmer gets \$90 to \$100 for a horse it will pay him all right. We cannot do without the horse on the farm, as most of the farm work is done by machinery and horses. We must then keep on raising them.

## Some Fallacies in Pig Feeding

Sanders Spencer, in the Transactions of the Highland Agricultural Society of Scotland, emphasizes the use of common sense in pig-feeding. Because for young pigs the best single food is shorts, and for pigs in the fattening stage, barley-meal, the belief exists that no combination of foods is more profitable than this. He points out that with the pig, as with human beings, a variety of food is not only appreciated by, but is also beneficial to it. The question of a mixture of foods is of, perhaps, the most importance to those pig-keepers who have at their disposal dairy offal. As is well known, skim-milk is a valuable food for both young and fattening pigs. Some pig-feeders, therefore, argue that it is not possible to give pigs too much skim-milk. It has, however, been demonstrated that a far greater return can be obtained from a comparatively small quantity of skim-milk when mixed with other foods than if fed alone, or even if it forms the major portion of the pig's food. This limited amount of benefit derived from feeding skim-milk in large quantities to pigs has led some to express the opinion that its value has been greatly overrated, when put at  $1\frac{1}{2}$ d. per gallon. Mr. Spencer, in contradiction of this opinion, quotes the experiments carried on at the Wisconsin Experiment Station by Prof. Henry, which showed the great difference in the value of separated milk when used skilfully or otherwise in combination with other foods.

These experiments clearly proved that skim-milk, in varying proportions of from 1 to 3 lbs. to 1 lb. of corn-meal, was of nearly twice the value of the separated milk when mixed with one-eighth of its weight of corn-meal; or, in other words, that by using an undue proportion of milk to corn you reduced the feeding value of the separated milk by one-half. This explains the great divergence of views of different persons as to the feeding value of skim-milk.

As regards the question of separated milk being of less value for pigs than skim-milk, Mr. Spencer points out that in the latter there would be more butter-fat, owing to the fact that the separator extracts it more completely than hand-skimming, but he also states, what should need no demonstration, that butter-fat is too expensive a food to be fed to pigs. If fat is needed, other and cheaper kinds can easily be added to the milk.

### PIG-FEEDING EXPERIMENTS.

Experiments have been conducted at the Midland Dairy Institute Farm, Kingston, Eng., into the much-investigated question of the relative value of separated milk and whey, respectively, when fed to pigs along with corn-meal; whether it is more profitable to sell the whey and separated milk at the dairy, at prices of  $\frac{1}{3}$ d. per gallon for whey, and 1d. per gallon for separated milk, or to use these products for fattening pigs; and which of the following rations are most profitable for feeding pigs: Corn meal and water, corn-meal and whey, or corn-meal and separated milk, when the same money value of the three mixtures were used?

The rations given at first per head per day were for lot