

To facilitate matters and accomplish the work more quickly at a slight sacrifice of effectiveness, slake  $7\frac{1}{2}$  pounds of lime using hot water, if necessary, to start action. Mix to a creamy consistency and make up to five gallons by adding water. The proportions in this recipe and the previous one have been given, and any quantity can be made at one time simply by using multiples of these amounts.

It now becomes necessary to select a disinfectant. Some that are practicable and within the reach of stockmen as to price are: chloride of lime, formaldehyde, crude carbolic acid, cresol, compound solution of cresol, and Zenoleum. The latter is a patented product and full directions accompany the preparation. Cresol (commercially known as liquid carbolic acid) in a two or three per cent. solution is an efficient disinfectant for stable work, but it is somewhat difficult to dissolve. However, if warm water is used and the substance well mixed this disadvantage can be overcome. It retails in the neighborhood of twenty-five cents per pint, but a better rate can usually be obtained by the gallon if that amount is required. The strength of this material varies according to its content of cresylic acid which ranges from 90 to 98 per cent. Cresol containing less than 90 per cent. cresylic acid should be rejected. Compound solution of cresol is composed of equal parts of cresol and linseed-oil-potash soap. It has the advantage of mixing readily with water.

Enough whitewash can be prepared at one time to complete the job and into it the disinfectant should be poured while the preparation is still warm, for then the different substances can be mixed more satisfactorily. If cresol is used add one gallon to every forty or fifty there will be of the total product. This, as before stated, is best accomplished by adding the cresol to the whitewash while it is still warm. If a spraying apparatus is used the material can be applied more satisfactorily while warm.

A barrel spraying outfit with rod and hose is very handy for this work. A coarse nozzle will do and sufficient pressure should be maintained to spread the mixture and force it into the cracks and crevices. With a convenience such as this, disinfecting and whitewashing is a simple job and need cause no great amount of worry. When a sprayer is not available the whitewash brush can be brought into service. More time is required with this method but it is effective.

At Weldwood it requires between fifty and sixty gallons to disinfect the stable, part of the horse-barn and henhouse. The recipe commonly used there is a modification of the one given previously containing lime, salt, rice, glue and Spanish whiting. The glue and rice, however, are omitted and the results have been satisfactory. About three bushels of lime are required each time. Zenoleum was used as a disinfectant; one gallon of the preparation to between fifty and sixty gallons of the entire mixture. It was applied with a common barrel-spraying outfit and was first strained through wire similar to that commonly found in screen doors or windows. Very little difficulty was experienced from clogging nozzles.

Stalls or pens used by animals during parturition should be thoroughly disinfected, particularly after being occupied for such purposes. Contagious diseases which affect the health, strength and numbers of the herd are often communicated through these stalls being dirty or infected with germs. Joint ill in horses, and contagious abortion in cattle should be rigidly guarded against by thorough disinfecting.

#### More Light and Ventilation.

Sometimes the stable could be flooded with light if the windows were only kept clean. Often, however, there is too little space devoted to glass in stable walls. This article is not intended to elaborate on methods of lighting and ventilating, only those things which can be done quickly and at little cost are being mentioned. Nevertheless, one can easily hinge the windows at the bottom so some of them can be opened into the stable at the top and pure air deflected over the cattle. To complete the system some provision should be made to carry off the foul air from the top and bottom of the stable. A galvanized iron pipe, 18 inches in diameter, opening at the ridge board, is an effective outlet. It should be left open at the bottom and another exit for impure air should be cut near the ceiling and covered in such a way that it may be opened and closed at will. Any tinsmith can prepare these and install them. Keep the windows clean so the sun can bathe the stable with germ-killing, purifying light.

#### As For the Barnyard.

Readers may, at first thought, consider that the barnyard has little to do with the feeding and care of live stock, but anyone who has had experience with a wet, miry barnyard will at once know that it means considerable. No live stock will do as well as they should when forced to wallow about in mud and manure up to their bellies, during fall and spring. Nevertheless cattle should be outdoors for exercise and pure air, and only in a dry, hard run are they comfortable. Wet barnyards are a fertile source of "foul in the foot" and other diseases that will set the cattle back in gains and production. It is very unpleasant to have dairy cows come in with their flanks and udders smeared with mud and manure.

First of all, drain the yard and use nothing smaller than four-inch tile. If the soil is clay the tramping over the tile is likely to render it useless and prevent the water from reaching the tile at all. In a case like this the efficiency of the tile can often be increased by first placing a few sods about the tile to keep it in position and then filling the trench with broken stone,

brickbats, and on top of this, coarse gravel to the surface. Concreting in barnyards is now becoming a common practice. Five or six inches of concrete in depth, mixed one to five or six, makes a firm, lasting bottom. In preparing the foundation, level off the ground and fill all spongy or soft places with broken stone. It is the water beneath concrete that destroys it, and the better drainage provided, either through

tile or foundation of stone or brickbats, the more lasting and satisfactory will be the work. When the yard is large a part near the stable can be handled in this way, and it should be large enough to permit all the cattle to stand or walk about on it. Keep the manure in a well-built pile and as far from the doors as is convenient and practicable.

## Winter Feeding Under Present Conditions

An abundant crop of hay but a shortage of corn and coarse grains are the factors that must influence feeding operations throughout the greater part of Ontario this winter. Millfeeds are high in price, so anyone who ordinarily would purchase concentrates to balance or augment the home-grown feed must first count the cost and decide whether his investment will return him interest with profits. The problem would not be a difficult one to solve if corn and roots, like hay, had yielded well, for then young stock and dry cows could have been wintered in a thrifty condition, and the feeders could receive what grain there happened to be available with some millfeed added. There are farmers who will not really appreciate the significance of these remarks, for their grain bins are heaping and their silos full. Even they, in many cases, we fear, will allow themselves to sell grain in spite of the pleadings of their own consciences to hold it and feed it on the place. There was a fair crop of fall wheat, but it, at time of writing, is moving at \$1.50 f.o.b. With a small crop of coarse grains and a full stable a man should think twice before selling his wheat even at that price, unless he turns around and puts it into some other kind of feed which he thinks will give better results. Of late years many stockmen have fed dollar wheat to cattle and hogs, claiming it paid them well to do so.



Young Leroy

Senior and grand champion Aberdeen-Angus bull at Toronto and London for Jas Bowman, Guelph, Ont.

Fewer steers are being fed this winter than for several years, and, furthermore, many feeders are being slaughtered at the present season. Naturally this will result in a scarcity of good butcher cattle next spring, and from all appearances there will be no large supply of pork or mutton to satisfy the increased demand these conditions must bring about. With no exceptional numbers of other meat animals to be consumed in the place of high-priced beef, and if the law of supply and demand be unhampered nothing now visible stands in the way of high-priced butcher-cattle in the spring of 1917. There will be a large number of two-year-olds wintered on meagre rations, but they will probably be so thin in the spring that not until late in the summer will they be in any way ready for the block, and it is not outside the realm of probability that some may be carried over as store cattle to be finished during the winter of 1917-18. It is the spring and early summer cattle that should meet with the most remunerative demand. Will it not pay well then so to feed that the surplus stock can be finished in the spring, or, with a little grain, on the early grass? If wheat is sold, and the cash received is not urgently needed to meet outstanding obligations, we believe the money should be invested in feed of some kind. We are laboring under abnormal conditions with regard to prices, but if the value of a finished bullock, a finished hog, or one hundred pounds of milk, is such that production has not been accomplished at a loss, things are not so different after all.

We cannot overlook the fact that swine are not only being disposed of in an unfinished condition, but the brood sows, upon which we must depend for future stock, are moving in significant numbers. Pork, at the present time, is so high that it can be used only in a limited way as a substitute for beef. What then will be the state of affairs after this season

has drawn to a close? Farmers are disposing of their young pigs also, explaining in a light-hearted manner that "hogs won't eat hay." If the war should terminate during the coming winter or early summer some readjustment of the markets would take place, but if conditions now prevailing continue to exert their influence over next season's buying and selling, we believe it is not outside the bounds of reason to hazard the guess that prices for meat animals will rule high indeed.

Many farmers will remember 1907 as a lean year. Hay as well as coarse grains and millfeeds were high in price. During the week ending November 2, 1907, quotations on the Toronto market ranged at \$17.50 to \$18.50 per ton for baled hay in car lots on the track. At the same time baled straw was quoted at \$9.50 to \$10.50 per ton; number 3 yellow corn was 72 cents; number 2 white oats were 54 cents; barley was 95 cents; bran was \$25 per ton, and shorts \$28. For the sake of comparison with conditions that exist now and which may extend their influence over next spring's operations, we may state here that during the spring of 1908 butcher cattle sold at Toronto at prices ranging between \$5 and \$6 per cwt. During the same period hogs sold at varying prices, ranging between \$5.25 and \$6 for selects, fed and watered.

The fall of 1907 presented difficulties similar to those we must face again this year, but the spring market of 1908 was apparently not in sympathy with the conditions under which the offerings had been fitted, for prices in 1908 were only a few cents higher than for the same period of 1907. Now we have a world-wide shortage of meat animals; the greatest war in history has increased the demand, and if stockmen are not compensated for their heavy investments in high-priced feed used in this winter's feeding, it will be due to some manipulations of the market that are neither fair nor just.

There is another matter that must be weighed carefully. Can anyone afford to farm the land without the customary coating of manure this coming spring and summer? Crops must be produced in 1917 and in years to come. Will it profit one to sacrifice future yields for present monetary gains? This is the question each must answer for himself according to the fertility of his soil, available capital, and outstanding obligations.

#### Avoid All Waste.

In our winter operations, conditions demand that all leaks should be stopped. The grain should be dispensed in the most profitable manner, and roots or silage should be fed in small quantities at least to the young stock and dry cows, which will probably have their grain rations materially reduced. Some saving of grain can possibly be accomplished in the swine department by boiling roots and mixing them with chop or millfeed. This makes a very palatable mixture for hogs and one on which they do well. By utilizing every particle of waste material, or by-products, and putting them up in a tasty manner for the swine, considerable saving can be made. Skim-milk will take the place of a certain amount of grain; kitchen refuse also has some value, and this all combined with a few roots and some tankage, if the skim-milk is scarce, will tend to liberate for the cattle oats and barley that would ordinarily go to the manufacture of pork. On the other hand it would be folly to skimp the hogs. They should have sufficient grain or meal, over and above the by-products and refuse supplied to keep them thrifty and growing. Farmers should remember it is not five-cent pork they are producing in these days. Ten, eleven, twelve or even thirteen-cent hogs, such as we have had, are a different proposition and these values warrant the feeding of high-priced meal. However, the object should be to make everything count to the very best advantage.

Turning to the stable we meet several alternatives.

Those who market ample food for their cattle of good quality keep the manure in such a way as to make it available for use.

Against some few of these conditions this season will find of animal unless it is worth they can will need can winter them over With the next spring that the finishing or millfeed of hay at the first and at about two of hay a fairly fed twice of hay. back to be entire month u per day, method stock, w better f

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