

work prevents digestion of food from 7 to 25 per cent. Hence, either more feed must be consumed by the horse or the reserve power of the body must be drawn upon to meet this extra demand. As an example of how extraordinary strain may interfere with digestion, it has been proven that the trotting of heavy horses even with a light load requires from one-half to four-fifths more feed per mile covered than when walking.

The heavy horse produces the most power for feed consumed when drawing a load at the rate of two and one-half miles per hour.

More horses, heavier horses, horses better prepared for work and fed for work will go far toward increasing and cheapening production per acre or per ton of crop. With the shortage of farm help at the present time, more and better horses will enable fewer men, when using larger and better farm implements, to maintain or even increase production at a decreased cost.

At heavy work the horse should receive from 1 to 1½ pounds of grain per 100 pounds of live weight. For example, a 1,500-pound horse should at that time receive from 15 to 19 pounds of grain and 15 pounds of hay daily. The best method of feeding is as follows: 5 a.m., 6 pounds grain mixture, 5 pounds hay; 12 a.m. 6 pounds grain mixture, 3 pounds hay; 6 p.m., 4 pounds grain mixture, 8 pounds hay.

When the horses are idle for a day or so only, reduce the grain one-half.

Regularity in feeding and uniformity of feeds, both as to quantity and quality, are essential. Grain mixtures, such as oats 5 parts, bran 1 part; or oats 3 parts and barley 1 part will be found satisfactory.

One or more feeds of warm mashes per week are essential to prepare or maintain a working horse. A bran mash replacing the Saturday night grain is excellent. This might be replaced by boiled barley or other grains mixed with bran, and fed warm. If desired, saltpetre may be added as a blood tonic, and molasses as an extra laxative and appetizer.

Salt in the rock form should be in the horse manger at all times.

Water should always be given freely, provided it is given frequently. Experience has proven that horses should be at liberty to drink both before and after feeding, but the larger supply should be previous to feeding.

All changes in feed and work must be made gradually. If not, there is danger of colic, lymphangitis, and similar derangements. Gradual changes not only build up the muscles and energy of the horse but gradually strengthen the digestion in preparation for the heavy strain on these organs during the heavy work.—From Special Circular No. 5, Dominion Department of Agriculture, by E. S. Archibald.

LIVE STOCK.

On the afternoon of April 24 the Missouri Aberdeen-Angus Breeders' Association sold 59 bulls by auction in the St. Joseph sale pavilion; the offering averaged \$178. There was a surplus of bulls around 12 months of age for which the buyers were not plenty.

An outstanding sale of Hereford cattle was held at Whiting, Ia., on April 26, when E. M. Cassady & Son disposed of 60 head at an average price of \$700. The 20 bulls averaged \$479, and the 40 females \$811. Anxiety breeding was much in evidence at this sale, and it gave a good account of itself. The top for the bulls was \$2,000, which sum bought Bright Prince. Golda 2nd topped the females at \$4,250 to O. Harris & Sons.

The retirement of Cyrus A. Tow, Norway, Ia., from the ranks of Hereford breeders was marked by a wonderfully successful dispersion sale on April 25, when 154 head of cattle were sold for \$134,930; the average price was \$876. The 28 bulls averaged \$1,200, and the 126 females \$804. Disturber Jr., sold for \$9,100, and the purchase was considered a bargain; \$3,600 and \$3,000 respectively were paid for Incomparable and Standard. The top-priced female was Maple Lass 55th, which sold for \$3,200.

Owing to the dry autumn of 1916 and the consequent shortage of feed when the rams were turned with the ewes last fall, a large percentage of single lambs have resulted. While one good single lamb is better than two weaklings, shepherds usually look for an average of one and one-half lambs per ewe. It would be well to prepare for this emergency and have a field of rape or second-growth clover on which to flush the ewes this fall. When the flock is gaining in flesh at time of conception a larger crop of lambs may be expected.

In districts where corn can be grown successfully stockmen should not underestimate the value of a ton of silage. It was considered worth at least \$3 per ton in the silo when wheat was selling for \$1 per bushel and less, and when corn and millfeeds were purchased at normal prices. If a larger quantity of the 1917 wheat harvest is exported than is ordinarily the case, millfeeds will continue very high. Silage or shelled corn is splendid feed and the yield per acre runs high. Here is one department of the farm cropping system that may yet receive consideration, and it affords an opportunity to produce a very desirable class of stores for next winter's feeding.

The stock farmers of the United Kingdom are now laboring under a proclamation enjoining them to put live stock on restricted rations. The Order prohibiting

the slaughter of calves has been withdrawn, and it is suggested that calves should not be fed prime fat. Horses are to receive no more grain than is absolutely necessary to keep them in good health and to enable them to do their daily work. Even dairy cows must not be fed "cake" while on grass. Similar requests are made in respect to sheep, pigs and poultry. The

acute problem is to make the shortened supply, that is in sight, last during the next three months, and the people are enjoined to be very moderate in the use of necessities and to observe total abstinence in regard to everything else; or as The Scottish Farmer puts it, to remember the great Divine injunction: "Gather up the fragments that nothing be lost."

Crippling or Rheumatism in Swine.

EDITOR "THE FARMER'S ADVOCATE":

In northern latitudes an increasingly common affection of swine is what is often known as crippling. This condition is usually a forerunner of rheumatism in the acute or chronic form. Swine of practically all ages are subject to attacks and the condition, in general, is easy of diagnosis.

Symptoms.

At first, stiffness or lameness of one or more legs, with frequent swelling of the joints, will be noticed, usually the hind quarters being affected first. This lameness increases, the animal lying buried in straw, if possible, all of the time, until finally, locomotion is practically impossible. When compelled to move, the pig squeals with pain. The appetite gradually disappears until finally from weakness and the decomposing effect upon the muscles of continuous lying, the animal dies or is put out of misery by the attendant. Occasionally the affection remains localized in some one of the joints, inflammation and pain being evinced. From the fact that the foregoing symptoms will generally show themselves in one individual after another in the same pen or building, the disease is frequently thought by the feeder, to be contagious. Such is not the case. Where several animals are housed under similar predisposing conditions it is but logical to expect a similar reaction in each case.

Causes.

Some authorities claim that there is no well-founded or proven cause for rheumatism, claiming that the condition may show in swine, under all systems of management, good and bad. While this may be to a certain extent true, the presence of crippling in a herd, in the management of which certain well-indicated methods have been followed, is so rare as to become the exception.

In brief,—rheumatism (and kindred complaints in swine) is caused by poorly insulated and therefore damp buildings; poor ventilation causing impure, clammy, damp air and damp surroundings; drafts; overheating and sudden chilling; too much food; too rich food; too little exercise; filthy, damp floors; etc. While one of the above predisposing factors might not be sufficiently powerful to cause trouble, anyone familiar with common winter swine-feeding conditions will know that in many cases several of the causes enumerated may be found combined. A combination of damp quarters and heavy feeding of a rich meal ration may almost invariably be looked upon with suspicion. Damp quarters, alone, to swine in particular, form a condition leading sooner or later to serious loss.

Preventive Treatment.

Diseases affecting swine should be treated, where at all possible, by the prophylactic or preventive method. The sick hog is truly a discouraged and discouraging animal, offering his would-be physician less moral and mechanical aid than even the proverbial sick dog.

Adult Breeding Stock.

While crippling may appear under the best of conditions with the heavily fed, closely confined, fattening hog, there is no justification for more than an occasional case in a large herd, where proper emphasis is laid upon the following health essentials with breeding stock—fresh air, dry quarters and exercise. With these should be included moderate feeding of a light meal ration and the constant use of roughages. Applied practically this would mean the use of a cheap portable shelter or cabin for winter and summer use, for both boar and sows, housing four or five of the latter in each cabin, and supplying bedding liberally. Aside from the time spent in a warm stall during farrowing, for a week or so previous, and for a certain length of time afterwards, depending upon the season,—the sow lives practically out-of-doors the year round. Somewhat similarly, many sows are wintered with a straw stack for shelter. While this would appear much more comfortable for the sow, crippling and rheumatism may appear. The sows burrow deep into the straw, frequently become overheated, with the ensuing danger of chills, predisposing further trouble. The single-board cabin is even in temperature, dry, and being open, requires no ventilating arrangement. It should be placed in a protected site and may further be covered over with straw.

Growing Breeding Stock.

For the sow under one year, ideal winter conditions have been found to consist of a well-ventilated shed or box-stall open continually to a small yard. Inside should be built of rough boards, a small, low sleeping-berth. Place a few boards over the top and cover with straw. Tack an old sack over the door and a comfortable, well-ventilated, dry bed will be the result. Such a housing arrangement will be found much better for the developing animal than the more rigorous treatment successfully accorded to mature sows.

FEEDING.—To prevent crippling and rheumatism with the aged breeding stock during winter the following methods of feeding are suggested: Use a light meal mixture, say bran 2 parts and shorts 1 part, making the proportion equal parts, with the sow nearing farrowing. Ground oats or ground barley might replace either. Roots are excellent; raw, pulped sugar beets or mangels or cooked potatoes or turnips, 5 to 10 pounds daily. Supply in racks at all times during the winter, well-cured alfalfa or clover hay. It is surprising how much the sow will consume. Also allow constant access to earth in some form, ashes, charcoal, etc., and watch continually for signs of over-fatness.

The boar may be fed much similarly. For him skim-milk, if available, is excellent, with a slightly richer meal mixture than the sows, if his condition warrants it.

In general, while over-feeding of breeding stock, housed as described, is not so likely to predispose crippling as where no exercise was possible, over-feeding or over-



A Mixed but Happy Bunch of Pigs.