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Timely Farm Suggestions

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Forage Poisoning in Horses

SINCE considerable of the corn in the northern part of the Cotton Belt did not fully mature in time to escape the killing frost of early October, there is a large amount of inferior corn and some which can be fed to horses only with serious results.

When horses or mules are poisoned by the feeding of moldy corn grain, forage or silage the symptoms are about as follows: There is a weak, staggering gait, twitching or trembling of the voluntary muscles, and sometimes slight cramps. There is a total or partial inability to swallow solids or liquids, and an impairment of the eyesight. As a rule the temperature does not rise and in some cases is below normal. Later the body becomes paralyzed, the animal becomes delirious and death follows. In some cases the paralyzed condition is but slight and the later symptoms do not develop. In these cases the animal usually recovers in four or five days. In most fully developed cases death is the result in the course of two or three days.

There is no satisfactory treatment for this disease and safety is alone found in avoiding the feeding of moldy or damaged feed. Such soft or damaged corn may be fed to hogs with safety, also to cattle with a fair degree of safety, but the horse or mule should never under any circumstances be fed feed that is the least moldy or damaged in any way.

Feeding a Sow and Pigs

WE ARE asked to suggest a method of feeding a sow and her litter, which may be followed by the members of the boys' pig clubs.

It is "putting the cart before the horse" to first get the sow and then plan for feeding her; but it seems well to encourage all who will to procure a brood sow and raise an extra litter at this time, for we and our Allies need the pork, even though to feed her most economically it would have been necessary to grow the feed last year and sow fall crops to provide early spring grazing.

Considering that no provision has been made for feeding and that the start must be made now, something like the following plan may be followed:

For every sow and her litter, an acre of ground should be provided for the growing of a rotation of crops that will provide green feed during a considerable portion of the year. However, since it is a difficult problem over a large part of the South to plan a rotation that will furnish grazing every month in the year, it is also necessary that every sow and her pigs be provided with a half an acre of permanent pasture that can be utilized in those periods when no grazing can be obtained from the rotation acre. Of course there is now no time in which to make such a permanent pasture, but on every farm there is some land that will provide grazing during the late spring and summer, and this should be utilized. For the sake of convenience in moving the sow and her litter from one to the other, the permanent pasture should lie adjacent to the acre to be rotated.

Fencing is best, but it is not necessary for this acre if the boy will cut and feed the material as it grows and

is needed by the pigs. The acre field should be divided into eight plots, which should be sowed as follows:

If the land is rich, one-eighth should be planted to an early variety of turnips. Another eighth can be put in rape, while an eighth of an acre each should be planted in the earliest garden corn and to Evergreen sweet corn. On a fourth of an acre, spring oats or, if the land is fertile, spring oats and Canada field peas, will furnish green feed during the late spring. If the land is not very rich the turnips and rape will do no good and both plots should be sowed to oats instead. Of the acre of ground, there remains a fourth which should be planted in corn and soy beans as soon as the danger of frost is over. As the other crops are grazed by the sow and her pigs, the land can be immediately prepared and planted to corn and soy beans or some other crop that will furnish grazing during the late summer and fall.

Burned Oyster Shells Versus Marl

A READER purchased ground marl analyzing 80 to 90 per cent calcium carbonate through his state department of agriculture for \$2.88 per ton delivered at his station. He expected to purchase more, but an agent selling burnt oyster shells at \$10 per ton told him that while the analysis of the marl showed it to be similar to ground phosphate rock, it is of no value and not worth scattering over the land if dumped on his farm.

Our reader seems to be laboring under the impression that ground marl containing 80 to 90 per cent calcium carbonate is also a carrier of large amounts of phosphorus. There are, in fact, marls, such as the green-sand marls of New Jersey, that are valuable largely on account of their content of phosphorus, but by far the larger portion of the marls used for their beneficial action on soils contain only a small amount of phosphorus and are valuable because of their content of calcium carbonate. In this instance, the marl is distinctly different from ground phosphate rock, and it contains probably only a trace of phosphorus and 80 to 90 per cent calcium carbonate, which has the power to neutralize soil acidity and, when certain lime-loving legumes are grown to supply calcium as plant food.

On the other hand, the phosphate rock contains 28 to 31 per cent of phosphoric acid, in the form of tricalcium phosphate which, after certain chemical and bacteriological changes have taken place, may become available for plant use, but at no time has this calcium compound the power to neutralize soil acidity.

If our reader has reason to believe his soil is deficient in phosphorus, he will probably find acid phosphate more economical than rock phosphate, but if his soil is acid and in need of lime we strongly advise against discarding his marl as worthless and buying burnt oyster shells at \$10 per ton. It is true that this marl will not supply any appreciable amount of phosphorus, and neither will burnt oyster shells for that matter, but a ton of this marl contains from 1,600 to 1,800 pounds of calcium carbonate, which is very much more economical in putting calcium in the soil than burnt oyster shells at \$10 per ton.

Oyster shells contain from 90 to 95 per cent calcium carbonate, and when properly burned produce a high-grade lime, containing from 85 to 95 per cent calcium oxide. Calcium oxide contains 1.8 times as much calcium as the calcium carbonate, and since calcium is the material of value in the compound, the different forms of lime used for correcting soil acidity should be bought on a basis of their content of this element.

If the burnt oyster shells analyze 90 per cent calcium oxide, a ton of this material will contain 1,800 pounds of calcium oxide. Since a pound of calcium oxide is equal in value to 1.8 pounds of calcium carbonate, it will be necessary to purchase 3,200 pounds of calcium carbonate in marl to supply the same amount of calcium. If the marl contains 85 per cent calcium carbonate, 3,600 pounds of it will furnish 3,200 pounds of calcium carbonate. In other words, in so far as effectiveness in bettering soil conditions is concerned, 3,600 pounds of marl is equal to 2,000 pounds of burnt oyster shells. Unfortunately, for the agent at least, this amount of marl costs only \$5.47 and is equal to \$10 worth of his burnt oyster shells.

The Cheapest Source of Nitrogen

WHILE cottonseed meal is and has been for a number of years the cheapest protein feed available, it is, at present, not the most economical material for supplying nitrogen to growing crops. The complete utilization of its value by feeding to animals and returning a portion of the nitrogen in manure is still an economical practice, for in such case there is not only a feeding value obtained but also a considerable amount of plant food added to the soil. However, when we disregard its feeding value and figure the cost of nitrogen in cottonseed meal, we find that several other materials are more economical sources of this plant food.

The percentages of nitrogen, phosphoric acid, and potash contained in tankage, cottonseed meal, ammonium sulphate, calcium cyanamid and nitrate of soda are as follows:

Fertilizing Material	Per Cent of		
	Nitrogen	Phosphoric Acid	Potash
Cottonseed meal, 7½ per cent ammonia	6.2	2.87	1.81
Tankage	12.0	1.5
Ammonium sulphate	22.0
Calcium Cyanamid	18.0
Nitrate of soda	15.5

In comparing the economy of these fertilizers, it is necessary that allowance be made for the phosphoric acid and potash in the cottonseed meal and the phosphoric acid in tankage before comparing the cost of a pound of nitrogen in the above with the materials that contain no phosphoric acid and potash. If we give a value of ten cents to a pound of potash (and this is about all the general farmer can afford to pay for potash) and 6½ cents for a pound of phosphoric acid, these two plant foods, as contained in a ton of cottonseed meal, are worth \$7.09. A ton of cottonseed meal analyzing 7½ per cent ammonia or 6.2 per cent nitrogen, should cost from \$48.25 to \$51.25, according to the part of the South in which it is bought. If this grade of meal costs \$49.50, and the phosphoric acid and potash are worth \$7.09, the 124 pounds of nitrogen in a ton will cost the purchaser \$42.41, or 34.2 cents per pound.

The question to be solved is whether a pound of nitrogen can be secured in some other material at a less cost. Since 20 per cent ammonium sulphate contains 400 pounds of nitrogen, on the basis of 34.2 cents per pound, a ton of ammonium sulphate is worth

\$136.80. It is very probable that if ammonium sulphate can be obtained, it will not cost this much, and if this is true, it is a cheaper source of nitrogen than 7½ per cent meal at \$49.50.

A ton of calcium cyanamid contains about 320 pounds of nitrogen which, if valued at 34.2 cents per pound, is worth \$109.44.

Tankage contains about 30 pounds of phosphoric acid per ton, which is worth \$1.95, based on a price of 6½ cents per pound. With this grade of tankage costing \$100 per ton, the 240 pounds of nitrogen will cost about 41 cents for each pound. As a pound of nitrogen in cottonseed meal costs only 34.2 cents, we do not advise the use of tankage in its place.

Nitrate of soda carries 15½ per cent or 310 pounds of nitrogen to the ton. Compared to the price of nitrogen in cottonseed meal, one could afford to pay \$106 for a ton of nitrate of soda.

Bringing together our figures, we find that cottonseed meal, tankage, sulphate of ammonia, calcium cyanamid, and nitrate of soda having the above analyses and figured on the basis of 34.2 cents per pound for nitrogen, 6½ cents per pound for phosphoric acid and 10 cents for potash, have the following fertilizer values per ton:

6.2 per cent nitrogen, cottonseed meal	\$ 49.50
22 per cent nitrogen, tankage	85.00
20 per cent nitrogen, sulphate of ammonia	136.80
18 per cent nitrogen, Calcium Cyanamid	109.44
15½ per cent nitrogen, nitrate of soda	106.00

A ton of high grade tankage can be obtained for \$83.03, but ammonium sulphate, nitrate of soda or calcium cyanamid can probably be purchased for less than the value assigned above and are cheaper sources of nitrogen than cottonseed meal or tankage.

VETERINARY PROBLEMS

What Causes a Pig to Go Lame?

A READER asks: "What causes a pig to go lame in one hindleg and stay that way for weeks?"

A pig may receive an injury to a leg or foot, just as any other animal occasionally is injured, and lameness result. If a careful examination of the affected limb can find no swelling or soreness, or if there has been no direct injury, such as a blow or a strain, then we may guess that the cause is of a different nature. Pigs grazed on peanuts exclusively, or fed any other unbalanced ration, particularly one deficient in mineral matter, sometimes show lameness in one or more legs, but in our observation, the fore legs are more often affected in these cases.

It is also possible that rheumatism may cause lameness in pigs. In such cases there is a tendency for the lameness to shift from one leg to another and the joints may sometimes swell.

Without further facts regarding this particular pig, we can only advise a careful examination of the leg to locate the trouble. In any case good care and comfortable dry quarters, away from other hogs, should be provided. A balanced ration should be fed and the pig provided sufficient mineral matter. For this purpose we suggest in addition to the mineral matter in a well balanced ration that the mixture for this purpose recommended in a recent issue be kept under shelter, where the hogs may eat at will.

A POINTED QUESTION

One year's cigarette money will buy a lot in town or an acre in the country. The smoke disappears, but the land remains. Which is better for you, young man?—Old Fort Sentinel.