

# THE PROGRESSIVE FARMER

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## Timely Farm Suggestions

BY TAIT BUTLER

LAST year more than 70,000 horses were killed and used for human food in Paris.

THE English are restricted to 2 pounds of sugar a month per person in the household, the French to 1½ pounds, and the Italians to 1 pound. The latest regulations from our own Food Administration reduces the use of sugar in the household in this country to the English level of 2 pounds per person per month. But 2 pounds per month per person, or about two-fifths what we have been accustomed to using, is asking more of us than appears from the above comparison, because we have been accustomed to using more in normal times than our European Allies. But for the good of the cause the American people will do voluntarily what is a matter of necessity in Europe. We save wheat and we can and will save all the sugar needed for our soldiers and our Allies.

### A So-called New Fertilizer

A NORTH Carolina reader writes: "I am enclosing a booklet on fertilizer. Do you think it a true representation or is it a fraud? Also do you think it would pay on thin land on wheat better than other fertilizers?"

We believe the pamphlet enclosed does not represent facts. There are no known facts which justify the statements made. We do not believe this fertilizer, at the price quoted by our inquirer, \$40 a ton, will pay as well for wheat as some other fertilizers he may use at ruling market prices.

This inquiry and the booklet accompanying it refers to a so-called "new" fertilizer, which is being advertised in certain agricultural publications and through the United States mails under the name of Phos-pho-Germ. The Progressive Farmer declined to publish an advertisement of this material when offered, because we believed it was misleading and because in our opinion the claims made therein did not represent established facts. Even if the claims made for it are true, which we very much doubt, there are no facts known to agricultural science which in our opinion justify the extravagant claims made for this material.

We have before us five analyses made by three prominent chemists. The first line in the table below gives the average of these five analyses, the second line the largest amounts of plant foods found, the third line the lowest amounts of plant foods found, the fourth line claims made for Phos-pho-Germ purporting to come from the manufacturers, and the fifth line claims made by the manufacturers in the booklet sent us by our inquirer.

	Phosphoric Acid				Nitrogen	Potash	Alkalinity Equivalent to Calcium Carbide
	Moisture	Total	Insoluble	Available			
1. ....	12.04	12.76	11.91	.73	.47	.31	9.08
2. ....	18.88	13.65	12.55	1.86	.57	.88	9.75
3. ....	4.45	11.95	11.10	0.90	.42	.19	9.25
4. ....	.....	.....	11 to 13	3.00	1 to 2	2	44.22
5. ....	14.00	.....	.....	5.00	5.00	.....	.....

It is but fair to state that the manufacturers of "Phos-pho-Germ" do not claim that its value is due entirely to the plant foods it contains, but more largely to the "millions of selected high bred bacteria" in it.

It will be noted that the water con-

tent of this so-called new fertilizer ranges from 4.45 per cent in one sample to 18.88 per cent in another. Such a low moisture content as 4.45 per cent may be rather unfavorable to the life of these highly bred bacteria. Dead bacteria will scarcely perform the miracles claimed for this special breed of soil "bugs."

The pamphlet in question is full of facts and near-facts, applied in a way, apparently intended to mislead, or at least, given an application not justified by known facts. We have not the space to discuss them all, but the following are fair samples: It is claimed that, "In nitrogen—one ton of Phos-pho-Germ is equivalent to 10 tons of good stable manure,"—that is, that one ton of Phos-pho-Germ contains about 100 pounds of nitrogen, for 10 tons of average stable manure contains about 100 pounds of nitrogen. And yet in another place it is only claimed to contain 60 pounds of nitrogen to the ton or 3 per cent, and in the 5 analyses of the material which we have, it is shown to only contain from 8.4 pounds to 11.4 pounds of nitrogen to the ton, or about one-half of 1 per cent.

It is also stated that in phosphorus 1 ton is equal to 56 tons of good stable manure; in potash equal to 10 tons and in "lime" equal to 60 tons of good stable manure. None of these comparisons is correct, as shown by the analyses or by any known facts.

We are told that Phos-pho-Germ is rich in organic matter, but we are not told how rich. We are told, however, that "This organic matter is in the shape of humus," yet we know that it only furnishes nitrogen at the rate of 42 to 57 per cent. We are also told that this new fertilizer should be applied "on poor, worn-out soil, 500 to 1,000 pounds per acre" or at a cost of from \$10 to \$20 an acre at the price quoted in our inquiry. This will give an application of 2.1 pounds to 5.7 pounds of nitrogen per acre, equivalent in nitrogen to about 30 to 90 pounds of cottonseed meal or from 15 to 35 pounds of nitrate of soda per acre.

It is, therefore, safe to state that in plant foods Phos-pho-Germ is not a high grade fertilizer and is not worth anything near what is asked for it.

As to the value of the bacteria which it is claimed it contains, that is not proved, nor is it probably possible to prove their value. It seems quite certain that if a soil is so deficient in organic matter and other necessary materials that bacteria cannot live in it, the mixing of 500 to 1,000 pounds of a material, which is evidently not rich in organic matter, with say 2,000,000 pounds of such a soil will not change its character sufficiently to make it a good place for these bacteria to live and do their beneficial work.

There is no "royal road" or "short cut" to rich soils. Organic matter, especially from legumes grown on the land, and phosphorus and lime applied, are the means by which our soils are to be improved and made suitable places in which desirable bacteria may thrive, and we advise our readers to stick to these tried and proved methods until better ones are proved.

That bacteria play an important part in soil fertility no one denies, but the top six or seven inches of the soil over an acre weighs about 2,000,

000 pounds and if this soil is poor and unsuited for bacterial activities it is very improbable that the mixing of one part, 500 pounds, of this new fertilizer with 4,000 parts, 2,000,000 pounds, of the soil will so change its character as to make it a suitable place for these pedigreed bacteria to live and perform the miracles ascribed to them. In the popular expression of the times, we "must be shown."

### Corn and Velvet Beans Versus Corn and Tankage for Brood Sows and Pigs

"CAN I better afford to buy velvet beans at \$1.50 a bushel than corn at \$2 a bushel for feeding brood sows and pigs?"

The following shows the digestible nutrients in 100 pounds each of corn and velvet beans:

Nutrients	100 lbs. Corn	100 lbs. Velvet Beans
Digestible protein .....	7.5 lbs.	18.1 lbs.
Digestible carbohydrates .....	67.8 lbs.	60.8 lbs.
Digestible fat .....	4.6 lbs.	5.8 lbs.

Brood sows and pigs should have digestible protein in the proportion of one part to 5½ to 6 parts of digestible carbohydrates and fats. In corn the proportions are 1 to 10.4 and in velvet beans (seed) 1 to 3.5. It is, therefore, apparent that corn has too little protein, while velvet beans have too much, in proportion to the carbohydrates and fats. Either alone is plainly not a suitable feed for brood sows and pigs. If corn is used velvet beans, tankage or some other feed rich in protein must be mixed with it. On the other hand, if velvet beans are used some feed like corn rich in carbohydrates must be used with them to balance the ration.

Equal parts of corn and velvet beans give 1 part of digestible protein to 5.87 parts of carbohydrates and fats and should form a suitable ration for sows and pigs.

The velvet beans are not relished as well as corn by hogs, but if the beans are soaked until just a little soft the hogs will usually eat them readily.

A mixture of equal parts of corn and velvet beans will cost \$3.04 a hundred pounds.

A mixture of one part of tankage (60 per cent) and eight parts of corn will furnish one part of digestible protein to 5½ parts of carbohydrates and fats and will make an excellent feed for brood sows and pigs. Of such a mixture 100 pounds will cost \$3.75, at \$2 a bushel for corn and \$110 a ton for tankage. At \$100 a ton for the tankage such a mixture would cost about \$3.73 per hundred pounds.

It is seen that the mixture of corn and velvet beans is cheaper than the corn and tankage mixture, because velvet beans are cheaper at \$1.50 a bushel than corn at \$2 a bushel, and also because velvet beans at \$1.50 a bushel furnish digestible protein cheaper than tankage at \$100 a ton, after allowing a fair value for the carbohydrates and fats they contain. Allowing 2 cents a pound for the digestible carbohydrates in velvet beans and 4½ cents a pound for the digestible fats in velvet beans and tankage, it will be found that velvet beans at \$1.50 a bushel furnish digestible protein at 6.88 cents a pound, while tankage at \$100 a ton furnishes digestible protein at 7.55 cents a pound. At the same cost we would prefer the corn and tankage mixture, but at the prices quoted we think we would try equal parts of corn and soaked velvet beans, especially for the brood sows.

### VETERINARY PROBLEMS

#### Pink-Eye in Cattle

THE disease of the eyes of cattle which the common name "pink-eye" is popularly given is contagious and has been more or less common throughout the South for at least the past 25 or 30 years. There is an inflammation of the outer membrane (cornea) of the eye and a small abscess often forms between the thin and normally transparent layers of this membrane, or outer portion of the front part of the eye-ball.

There is first noticed a redness of the eye, with a flow of tears and great sensitiveness to light. That is, the light seems to cause the animal great pain and the eye is generally kept closed. After a few days the cornea or transparent part of the eyeball shows a cloudiness usually starting or being more apparent near the center of the eye. As the disease progresses this cloudy or white spot increases until the whole eye-ball appears to be covered with a white "skin," but as a matter of fact this cloudiness or white appearance is due to a deposit between the layers of the cornea, instead of to the formation of any covering on the outer surface. In many cases a yellow speck soon appears where the white spot first started and in the course of a few days more, blood vessels may be plainly seen radiating from this yellow center. These small blood vessels increase until the whole eye-ball may take on a red or pink color, thus forming the basis for the common or popular name "pink-eye."

The yellow spot marks the location of the formation of a small abscess. This abscess always breaks outward, if it breaks at all; but owing to an increase in the fluid in the front part of the cavity of the eye-ball there is a great pressure exerted which causes a bulging of the front of the eye-ball, and after the abscess breaks out through the outer membranes, this pressure often causes the thin inner membranes to break and the contents of the eye-ball to escape. When this occurs the sight of the eye is destroyed, but when only the membranes over the outer part of the abscess break, which is the usual result, there may be complete restoration of sight. In fact, it is often surprising how completely vision is restored, considering the bad appearance of the eye during the progress of the disease.

Both eyes may become affected, but usually one is affected several days before any trouble is noticed in the other eye. Only occasionally is the sight destroyed in one eye, and still more seldom is the sight of both eyes destroyed. In fact, practically complete recovery is the common result.

Owing to the pain and the fact that the eyes are kept shut, cattle do not eat well and calves often show a great falling off in flesh.

The disease usually affects a large proportion of the herd, but it does not usually spread rapidly, and consequently, if the diseased cattle are removed or isolated and the stables disinfected the disease can often be cut short or the number of animals affected greatly reduced. The colored part of the eye (iris) is not directly diseased, but owing to the increased pressure of the liquid in the eye-ball it may be pushed against the lens and adhere to it, thus injuring the sight. In the treatment, therefore, the first objects are to reduce

(Concluded on page 19, column 3)