

Professor Massey's Editorial Page.

What Farmers Want to Know.

WITH PEAS to be followed by wheat I would mow the peas for hay, and then disk the stubble as fine as possible, working in 400 pounds of acid phosphate per acre. Let the mixture of lime, phosphate and potash, proposed by one inquirer, alone. Lime is not used as a fertilizer, and mixed with phosphoric acid it simply makes it less available. Lime is useful, of course, where it is needed to correct acidity in the soil or to hasten the nitrification of organic matter, but if your land needs lime, buy the fresh unslaked lime and slake it yourself, and do not buy lime and fertilizer mixed at a high price



for the lime. If you want a fertilizer carrying lime, buy the basic slag or Thomas phosphate, and you will get 40 per cent of lime without paying for it, as the price of the phosphate is determined by the percentage of phosphoric acid it contains. I would never re-plow a pea stubble deeply, for at this late period in the season it will be hard to get the soil well packed down. But disk the surface fine and drill with a disk drill. The disk drill is greatly to be preferred to the hoe drill.

CANADA PEAS.—Canada peas may do fair, well if sown in October with oats, but the chances are against them anywhere south of New York State. It is useless to sow them in the South in the spring as they are sown North. But we do not need the Canada peas in the South, for the cowpeas, soy beans and velvet beans are all far superior to the Canada peas and make heavier crops. The South has a great advantage over the North in the great variety of protein feed crops that can be grown. We can sow oats in the fall, and after they are harvested can get a heavy crop of peavine hay far better and heavier than the Canada peas make anywhere. Hence, there is no reason to regret that the Canada pea does not thrive in the South.

ALFALFA.—Alfalfa four years old that has a good deal of bluegrass among it, and alfalfa is in bunches. Cut August 1, and now 14 inches high. I would mow it clean and cure it, and then disk the sod both ways and sow 20 pounds more of alfalfa seed an acre. Then roll the sod down smooth and top dress with 25 bushels of slaked lime an acre. In spring apply 400 pounds of acid phosphate an acre. I think that you will find the alfalfa greatly improved another season.

VETCH AND CRIMSON CLOVER.—One reader has land in peas that he wants to get in vetch on part and crimson clover on another part. Mow the peas and cure for hay when the pods mature. For the vetch, I would plow the stubble and harrow in 25 pounds of seed, and after harrowing well would sow two bushels of oats an acre with a disk drill. Get some soil from an old garden where English peas have been grown and scatter a barrel of this an acre before harrowing, and it will inoculate for the vetch. On the part for crimson clover I would simply apply 300 pounds acid phosphate and 25 pounds of muriate of potash, if potash is needed, an acre and disk the stubble over lightly and sow the seed. If you can get soil from a field where this clover has succeeded it will be well to use it, but if any sort of clover, wild or cultivated, has grown there, it will grow well without any inoculation.

PERMANENT PASTURE.—To make a permanent pasture in the coastal section I would now plow the land well and sow rye. Plow the rye under in the spring and then mark off shallow furrows two feet apart and plant cuttings of the running stems of Bermuda grass in the furrows and cover them and roll the land tight to them. Do this about the first of May, for Bermuda is a summer grass and should not be planted in the fall. Then in the fall you can stick in pinches of seed of the Texas bluegrass about two or three feet apart. These seed are matted together by a sort of spider-web growth that makes them hard to sow, but planted here and there it will soon run over land and give you a winter grass growth, for it is purely a winter grass. Or you might scatter

in the fall seed of the Virginia bluegrass called also Canada bluegrass. It is *Poa compressa* and suits such lands better than Kentucky bluegrass, and it, too, is a winter grass.

WINTER LETTUCE.—Where one has plants of a good variety of head lettuce ready now, as I have, it is easy to make a fall crop without any protection. I doubt if lettuce seed sown in September would come on early enough to head before Christmas, and frames and glass or cloth would be needed. By heavy manuring and also heavy use of commercial fertilizers of high grade you can probably have good head lettuce in spring from plants set in the fall, grown from seed sown the middle of September, but if you want to ship winter lettuce you will have to use frames and glass sashes or cloth. To fit up for growing winter lettuce with cotton cloth on the frames will cost from \$500 to \$800 an acre, and the cloth will have to be renewed every second year. To fit up with glass sashes on frames will cost about \$4,000 an acre, and the sashes made of cypress will be good if handled right for twenty-five years or more. A third better lettuce can be grown under the sashes and, in the long run, they are cheaper than cloth.

ROTATION PROBLEM.—One reader has been growing corn two years followed by clover, and crop has improved, but he thinks something should be added as fertilizer. If the clover following the corn has been regularly turned under, he will be accumulating humus and nitrogen, but he will need liberal applications of acid phosphate and, in his case, potash to keep up the growth of corn and clover. It would be better to lengthen the rotation, and follow the corn with oats and crimson clover, and cut these for hay and follow with peas for hay, applying 300 pounds of acid phosphate and 25 pounds of muriate of potash to peas; follow these with crimson clover on the stubble and haul out manure on the clover in winter and turn for corn again in spring. Or if he keeps up the corn and clover, I would sow peas among the corn and then sow clover among the dead peas after cutting the corn off and apply the phosphate and potash to the corn.

Notes and Comments.

A READER who wants to use lime after peas, is offered air-slaked lime at \$5 a ton and prepared lime at \$13 a ton and ground limestone at \$4.50 per ton, and asks which is cheapest. Neither of them would be chosen by me. The air-slaked lime has taken up a large lot of water, and I would not care to freight water needlessly. The prepared lime, I believe, has some potash added, and is sent out with the idea that lime is a fertilizer. You can get lime, if needed, cheaper, and potash, if needed, cheaper. Then \$4.50 is too high for pulverized rock. It ought not to cost more than \$1.50 a ton where made, and could be made anywhere on the coast from oyster shells cheaper than that, for where I live we can buy oyster shells for 2 cents a bushel delivered. This would be, I suppose, about 50 cents a ton, and they could be pulverized and sold at a fine profit at \$1.50 a ton. Years ago I was buying the air-slaked lime, or "agricultural" lime, as it is called. A company wrote to me that, on a guaranty that the lime was to be used for agricultural purposes, they would sell me lump lime in bulk in car-loads for 12 cents a bushel, and on the same guaranty the railroads would freight it at reduced rates. I ordered a car-load from them. It was 440 bushels. I hauled this 440 bushels five and a half miles from the railroad and piled it convenient to water and slaked it to a powder with water, and had nearly 1,000 bushels of slaked lime, and had freighted and hauled only the 440 bushels. I had plenty of water in the branch and did not need to freight it in slaked lime. I believe that it is cheaper to buy lump lime in car-loads than to buy slaked or the so-called agricultural lime, the sweepings of the kilns.

LIME FOR COWPEAS.—It has seemed at times that lime is detrimental to the growth of cowpeas when applied directly to the crop, while there have been a few experiments made that seemed to show that lime favors peas as it does other legumes. Certainly, when there is an abundance of humus-making material in the soil lime does favor the growth of bacteria. All plants need carbon for their growth. Green plants get carbon only from the air through the assimilation of carbon dioxide from the air by the green leaves. Bacteria, having no green matter, can not do this, and one European scientist determined that these microscopic plants have a power that green plants

have not, in that they can take carbon from chemical compounds in the soil, and get carbon from lime carbonate. Hence the lime favors bacterial growth in the soil. There are sections in the South where no clover has been grown, where artificial inoculation is necessary for crimson clover. This fact was plainly shown in experiments at the Alabama station. But in sections where clover of any sort has grown the crimson clover thrives without any effort at inoculation. A farmer from the Valley of Virginia once asked me if I had ever known this clover to fail, as he had never known it to do so. He farms in a section where clovers have been common crops for generations. Lime may not promote the growth of peas, but after the peas have been grown lime will certainly be useful, and in a three-year rotation one can profitably use lime once in six years.

PEACH TREE BORERS.—Wherever you see gum at the ground in a peach orchard there is a borer in the root. Clean away the gum and trace up the borer and cut him out. Paint the stem of the trees a foot from the ground up with pure white lead and raw oil. This will prevent the moth laying eggs to some extent. But you should go over the orchard in spring and fall and look for the gum and take out the borers. Then before the leaves come out in spring spray the trees for the San Jose scale with lime and sulphur, 8 pounds of lime and 8 pounds of sulphur, and then add water to make 50 gallons for spraying. Shorten the young shoots in spring one-third.

CRABGRASS HAY.—The abundant rains of late will make a heavy growth of crabgrass, and crabgrass cut when the heads are out and still green makes as good, or even better, hay than timothy; far better than most of the timothy brought in bales to the South, for I have seen a great deal of that which was timothy straw left from threshing for seed, and perfectly dead before it was cut.

More Talk About the Corn Crop.

R IDING SEVERAL miles in the country yesterday, I saw men topping corn and stripping the blades on plants where the ears were hardly too ripe for table use as roasting-ears. They fail to understand that so long as the leaves on the corn are green they are getting material for starch-making and storing in the grain. But strip the green leaves off and the corn gains no more, but simply dries up, and there is weight of grain enough lost to pay a good price for all the fodder obtained.

Of course, the fodder got in this way is a better article than that from the cut-down corn, but the farmer is paying a big price for it. The practice has grown out of the neglect of the grasses in the South and hence the lack of hay. The remedy is to grow more hay from peas and soy beans and clover and grass. Then the stover from the corn crop has a place of smaller importance to the farmer.

There is another important reason why we should grow more legume forage in the South, and this is its value in balancing a ration. In the city where I live the livery stables feed their horses on nothing but corn and corn fodder. The result is horses too fat for good work, since they must eat more of this carbonaceous feed than is good for them, to get what protein they need. Drive one of these horses that are kept at these stables, and in even rather cool weather they lather with sweat, and are too soft to be driven.

More oats and less corn and corn fodder is badly needed here. Oats are far better grain feed for horses than corn, and oats can be grown in the South more successfully than elsewhere if grown as a winter crop. Last fall I induced a friend here to sow some winter oats. He got clean seed and, of course, had a clean crop and no cheat. His oats are in demand for seed, for every one of his neighbors now wants to sow winter oats, and he is selling them by weight, for they weigh 38 pounds to the measured bushel, and 32 pounds is the standard weight for a bushel of oats, and no spring oats grown here ever come up to it.

When to cut the corn is a question often asked. I would cut it when the grain is completely dented. This can be taken as evidence that its growth is complete. So long as the grain is plump and the leaves green, the grain is gaining. If corn is to go into the silo, cut it as soon as in a fairly good roasting ear shape or barely past it.

I can not tell the exact proportion between crimson clover seed in the chaff and clean seed, but the practice is to sow 40 pounds of seed in chaff where we would sow 15 pounds of clean seed.