

# United States Department of Agriculture Special Page

Bulletins and Special Articles Issued by the Government, of Interest to the Northwest; Suggestions Covering a Wide Range of Activities; Results of Federal Investigations, Etc.

## Sulphuric Acid Will Remedy "Damping Off"

COMMERCIAL sulphuric acid has been found by the United States Department of Agriculture to be an effective remedy for the loss of pine and spruce seedlings from "damping off." It is quite common for the soft tissues of these young seedlings to decay so rapidly soon after sprouting that they disappear sometimes before the nurseryman knows that there is anything the matter with them. So common indeed is loss from this source that many nurserymen import their seedling stock from Europe. This, however, is not only troublesome, but dangerous. The white pine blister rust has already been introduced into this country in this way and continued importations of seedlings are certain to result in the establishment in the United States of other foreign pests.

For this reason the Department attaches much importance to the recent investigations of possible disinfecting agents which will rid the soil of the parasitic fungi which cause "damping off." Of these agents the most satisfactory for commercial use in the majority of cases has been found to be sulphuric acid. Treatment with this acid not only reduces losses from "damping off" but increases germination. The treatment is not expensive, for commercial sulphuric acid can be purchased in quantity at very low rates. At one nursery where careful accounts were kept it was found that the entire cost of the treatment, including labor, materials and extra waterings, was less than \$5 per thousand square feet of bed. On the other hand the saving in the cost of weeding alone, which the treatment made possible, amounted to \$5.30 per thousand square feet.

The sulphuric acid is dissolved in water and applied to the beds with a paraffin-coated sprinkler just after the seed is sown and covered. From 1/4 to 1/2 of a fluid ounce of acid should be used per square foot of bed, dissolved in enough water to make 1 1/2 or 2 pints of solution. At some nurseries it is also necessary to water the beds once or twice daily during the germination period to prevent chemical injury to the seedlings. Individual conditions, however, must determine for each nursery whether or not this frequent watering is necessary and exactly how much acid should be used.

In some Northern nurseries where soil disinfection has not been resorted to, fall sowing has been found to control "damping off" fairly well. At all nurseries where the soil remains frozen during the winter, it is worth while to test sowing just before the soil freezes. Excessive moisture should be avoided in unsterilized seed beds.

### The Silo Principle.

Go over to the market and buy a quart of fine sauer-kraut made from home-grown flat dutch cabbage. Having the kraut next purchase a sperber or two. Cook the two articles thoroughly and the result will be a dish fit for the Kaiser, when he is good and hungry. Now how would a dish prepared in this way compare with a mess of sun-dried cabbage leaves for palatability and nutrition? When this question is answered you will be able to understand the value of a silo, the preserved ripening corn precisely as the matured cabbage is put up. Can there be any question about the practicability of silos, especially in this Western country, where all kinds of feed are so expensive and where the climate dries out the fodder in the shock so that it tastes like a hemlock shingle?

### Sudan for Soiling.

With reference to feeding Sudan grass as a catch and soiling crop, Mr. A. M. Augustine, secretary Illinois State Horticultural Society, says in a private communication:

"Sudan grass is in my opinion one of the most valuable things that has ever been brought out in this section of the country, especially for a catch crop. It personally gave me wonderful results for Summer pasture this year. An acre carried two mules and a work horse, all the forage they received from the 10th of July until a few days ago, and still it got ahead of them, so that we had to cut it twice, and got over a ton of hay from the land."

## Migratory Birds Must Not Be Shot, Says Law

FROM the number of letters which they have received on the subject recently, officials of the Department of Agriculture believe that sportsmen may unintentionally violate the provisions of the Federal Migratory Bird law, which it is the purpose of the Government to enforce rigidly. Under the provisions of this law no water fowl can be shot in the Northern or breeding zone after January 15, except in New Jersey, where the season extends to February 1.

In most of the Southern or Wintering zone the season closes February 1, but extends to February 15 in Florida, Georgia and South Carolina. These regulations were proclaimed on October 1, 1914.

As a matter of fact, the law provides that all changes in the regulations must be considered for a period of 90 days, and then must be approved and signed by the President, before they become effective. It is thus evident that there is no possibility that the prohibition of Spring shooting will be in any way modified this year.

The officials of the United States Department of Agriculture who are entrusted with the enforcement of the law are anxious that these facts be impressed upon the people because it is the intention to investigate carefully all reports of violations made to the Department's inspectors and wardens and to prosecute all such violations in the Federal courts. In this connection it is pointed out that prosecutions may be instituted at any time within three years of the offense.

## Aid Foot-and-Mouth Disease Eradication

UNDER the recent urgent deficiency act which was signed by the President on January 26, \$2,500,000 is now available for the eradication of the foot-and-mouth disease. Up to January 1, 1915, the outbreak had cost the Federal Government a total of \$2,129,178.04. Of this sum \$1,846,228.59 represents the Federal Government's share of the expense of slaughtering affected herds and reimbursing the owners for their loss, of which the Government pays half and the individual states the remainder. The figures show that exclusive of the week in January, 101,176 animals have been slaughtered. Of these 46,265 were cattle, 47,725 swine, and the remainder sheep and goats.

The money now at the disposal of the Department of Agriculture will, it is believed, aid the campaign against the pestilence by enabling the Government to make prompt payment to all owners of infected herds, and thus minimize the reluctance of farmers to have their stock slaughtered.

In Illinois, for example, approximately \$600,000 is now available for this purpose. The loss in that state has been larger than in any other, 36,758 animals, altogether, having been slaughtered. Pennsylvania comes next with 17,896 animals, and Ohio third with 16,113. None of the 16 other states in which there was an outbreak has lost as many as 8000.

The range in Colfax County, New Mexico, is usually free. Ranchers have been able to take beef right off the range without feeding.

## Live Stock Increasing in U. S. A.

FOR the first time in many years, information collected by the U. S. Department of Agriculture shows that all classes of livestock in the United States are increasing in numbers. Thus the real facts contradict absolutely sensational reports that prices for meat and shoes would rise to unprecedented figures in the immediate future. It has even been said that a Government statistician predicted meat at 50 cents a pound and shoes at \$10 a pair within the next two years. Such a prediction, the real Government statisticians say, is quite unwarranted.

On January 1, for example, the number of beef cattle showed an increase of 3.4 per cent over the number a year ago, and an actual increase of 1,212,000 head. Hitherto the number of beef cattle in the United States has declined steadily since 1910. There are also more milch cows in the country than last year, the increase being 2.5 per cent, or in numbers 525,000. Swine, however, showed the greatest increase of all classes—3.6 per cent. On January 1, 1914, there were only 58,933,000 swine in the country; on January 1, 1915, 64,515,000. This is accounted for by the fact that the production of swine can be increased more rapidly than that of other classes of livestock and consequently an enlarged demand can be met more readily.

### The Facts.

The prediction of 50-cent meat and \$10 shoes was accompanied by the declaration that France alone has taken from America nearly 100,000 horses within the last five months and that the other countries at war have drawn upon our resources in the same proportion. The facts are that more horses were on the farms of the United States on January 1, 1915, than there were a year before, the increase being 222,000 head, or 1.1 per cent.

So far from France alone having taken 200,000 horses from us, the total exports since the war began have certainly been much less than 100,000 and very likely not over 75,000. Since there are approximately 25,000,000 horses altogether in the United States, the drain on account of the war is scarcely alarming.

It is in fact pointed out by Government statisticians that the market value of farm horses has actually declined to such an extent that the average is now about \$6 a head less than a year ago. This decline is most noticeable in the northern states and in those states where

make a business of breeding horses for sale in other sections. Values have declined even more than horses, their value being now \$11.34 per head less than a year ago.

The explanation is to be found in the depression or scarcity of the cotton situation in the South, which is the great market for mules. An improvement in this respect will do much to restore the demand for horses, so that Government specialists while ridiculing the notion of a horse famine are convinced that farmers will find it profitable to use good work mules for breeding more stock.

### Situation in Hides.

As for hides, the situation is not quite so clear, but even here there has been much gross exaggeration. From two-fifths to two-thirds of the leather used in this country is imported, about 25 per cent of the foreign hides coming from Argentina, 15 per cent from Canada, 17 per cent from Mexico, 7 1/2 per cent from European Russia, and 7 1/2 per cent from France. Since the outbreak of the war importations have shown a certain falling off, those for September, 1914, for example, being only 24,000,000 pounds instead of 31,000,000 pounds the year previous.

There is, however, little reason to suppose that this decrease will be permanent or of sufficient importance to create any real scarcity. Since the great bulk of the imported hides come from countries that are not at war shipments are not interrupted in any way and the only real factor to be considered is the possibility of an increased demand in the warring countries.

It is believed, however, that the United States is now in a better position to have such a situation than her peers. The fact is, it seems, that a great amount of livestock steadily decreasing year after year, this year for the first time, as has been said, all classes show an appreciable increase. Including horses, mules, milk cows, beef cattle, sheep and swine there were on January 1, 1915, 7,772,000 more than animals in the United States than on January 1, 1914. The increase in the total value was \$2,000,000, or 1.2 per cent.

It is still true that the increase is not yet proportional to the increase in population, which is approximately 2 per cent, but the fact that there is an increase that the tide seems definitely to have turned, is regarded as a sufficient answer to startling exaggerations and misleading figures.

## Government Will Stop Adulteration of Oats

SEVENTY-FIVE carloads of oats intended for export have recently been seized by the Federal authorities because they were found to be adulterated within the meaning of the Food and Drugs Act. The adulteration charged is the addition of feed barley or water or both. Under certain circumstances adulteration in these ways may be so profitable that it is believed to be at times a common practice among grain shippers. The Government, however, is determined that the practice shall cease at once, and field representatives of the Department of Agriculture have all been instructed to exercise the utmost vigilance in detecting future shipments adulterated in this way.

Low grade barley which is known to the trade as "feed barley," is sometimes mixed with oats when there is sufficient difference between the prices of the two grains to make this profitable. This "feed barley" is the product which remains after the best grade of the grain has been separated and removed for milling purposes.

It contains material percentages of weed seeds, foreign grains and dust, and the addition to oats of such a product is held to be a violation of the Food and Drugs Act. The addition of water to oats arises from the fact that the grain is sold by weight. Investigations of the Department of Agriculture have revealed the fact that water is sometimes added in the amount of from 2 to 4 per cent.

In the opinion of the Government officials there is no reason why either of these practices should be tolerated. Grain shippers and dealers, therefore, are being warned that the prevalence of the system in the past will not affect the best opportunities against future shipments found to be adulterated in this way.

## Utilization of Wood Waste is Profitable

It has been estimated by the Forest Service that 1,100,000 cords of wood waste is consumed annually as refuse in the Pacific Northwest. This would be sufficient to yield 100 million cubic feet of producer gas and develop from it 1124 million k. w. h. of electric energy.

Thus far the most extensive development of wood gas producers has been in France and Sweden. Plants are operated also in England, India and Mexico. In this country there are a few producers plants operating in the South and Southwest. In the former region producer gas is being generated from wood waste, composed of 50 per cent sawdust and 50 per cent sawmill hog. The cost per brake horsepower hour was found to be 22 1/2 mills, half of which was for fuel and half the labor. Using coal in the same way, the cost was a fraction over 28 mills per brake horsepower hour. The mills being for labor. Through these various operations, it has been found that wood has the following advantages over coal:

1. Very little ash and that easily removable.
2. High grade of gas.
3. Much less tar and that of more liquid character.
4. Constant quality of gas with little labor.
5. Low cost per horsepower hour.

Among the products used in producer gas as a heating medium are smelting, enameling, annealing, softening, drying, coffee roasting, glass finishing, paper drying, in the oil cement kilns, poultry kilns, gas furnaces, bakery ovens and laundry irons.

In view of the fact that there is much wood waste in the Northwest, the process of utilizing it to the advantage and gas engine is one which seems to have a great chance for future development. It is a most economical method of producing power that by burning wood waste about half as much as coal, and that waste as shavings and woodchips can be used.

The District Forester, Portland, Or., will furnish further information to those who may be particularly interested.