

A PAGE FOR THE FARMER

What Government Experts and Other Prominent Writers Say on Agriculture and Allied Topics.

MANY ENEMIES OF THE ALFALFA PLANT

Weeds, Rodents, Insects and Disease Have to be Reckoned With by the Grower—By J. M. Westgate, Assistant Government Agrostologist.

Over a considerable portion of the country weeds constitute the worst enemy of alfalfa. This is especially true in the humid sections and in those parts of the west and southwest where the bulk of the rainfall comes during the comparatively mild winters. Witch-grass or couch-grass in New York and the New England states, crab-grass in the eastern states south of New York, bluegrass in the bluegrass sections, and the "foxtail" or wild millet and crab-grass in the central states are the most enemies in the respective sections from the standpoint of the alfalfa plant.

In the irrigated sections of the west, especially in those sections characterized by rainfall during the comparatively mild winters, the growth of the wild barleys is a decided drawback to the successful production of alfalfa. They mature shortly before the first

are the best means of holding the pests in check.

Grasshoppers are at present the worst insect enemies with which alfalfa must contend. These are most troublesome in the arid sections of the west, where the alfalfa fields may be the only succulent growth for miles, and the grasshoppers from large areas congregate upon the relatively small fields of alfalfa. They are also especially destructive to the alfalfa in semiarid sections where alfalfa must be produced without irrigation. A flock of turkeys is often efficient in holding grasshoppers in check, as is also a sheet-iron device known as a "hopperdozer," which is run over a field and catches the grasshoppers in an open oil-filled pan.

Another very effective means of destroying grasshoppers is to disk the fields in late winter. This exposes the half-developed young to the early spring frosts and to the attacks of birds. This operation is also to some extent effective against the alfalfa webworm.

Blister beetles also prove troublesome at times when they appear in considerable numbers. The general practice is to cut the alfalfa on the appearance of any such pests, when they will be forced to starve or migrate. The alfalfa and clover chalcids fly found also in Europe and Siberia, is proving destructive to the alfalfa-seed crop wherever it is grown.

There are two general classes of diseases which affect the alfalfa plant, namely, those which affect the roots and those which attack the stems and leaves. Of the former, root-rot is the most important. This disease is practically identical with cotton root-rot and prevents the successful production of alfalfa in considerable portions of eastern and southern Texas. It spreads in widening circles throughout the field, causing an almost complete destruction of the stand as the disease progresses. There is no practical remedy, and land so affected must be kept out of alfalfa or cotton for several years. Another disease which attacks the alfalfa roots is the "sclerotium" disease, which appears as black excrescences about the size of wheat grains. There is no practical remedy for this disease other than to throw the land out of alfalfa for a number of years.

Of the diseases which attack the leaves and stems, the leaf-spot disease is the most common. This appears as minute black spots on the mature leaves. Leaf-rust produces small reddish spots on the leaves. Powdery mildew and downy mildew form whitish patches of considerable size on the leaves. Another form of leaf-spot disease is sometimes destructive. This appears in the form of well-defined circular spots which show numerous small black dots scattered over their surfaces. The most effective remedy is to cut the plants when any of these diseases begins to prove destructive. This process invigorates the plant, and most of the spores by which the disease is spread are destroyed. The anthracnose disease attacks the stems and forms purple patches which gradually increase in size. This is destructive locally in the east. No effective remedy has been discovered for this disease.

Value of a Good Bull.—Did you use a scrub bull last year, and are you saving his heifer calves from your best cows? What assurance have you that the calves will be even as good as their dams? Would it not have been better to have bought a pure bred dairy bull? Yes, pure bred bulls cost money, and he might have cost \$100. Is that a large sum to pay out? Let us look into the matter. Suppose that such a bull sires for you but ten heifer calves, and that each one of them when she comes into milk gives but one pint of milk at each milking more than her dam gave at like age, or 600 pints for the 600 milkings of the year, which is worth six dollars to you. But you milk a cow an average of seven years, and the one cow turns you \$42 more than her dam. Ten such cows mean \$420. The probabilities are that the increased milk they would yield over their dams would be worth \$1,000. How, then, can any intelligent man afford to use a scrub bull?—Malcolm H. Gardner.

Keep Chicks Dry.—Wet feet are not a good thing for baby chickens. Keep the floors of their coops dry, and arrange their drinking troughs so that they cannot get in them or spill the water.

Hay for Cows.—Timothy hay is not a good cow feed. If you have a surplus of timothy and are short on clover, it will pay to sell the timothy hay and buy clover hay for the cows.

RUNNING THE DAIRY TO PRODUCE A PROFIT

Weed Out the Robber Cows, and Feed the Good Cows Left to Limit of Their Capacity—By C. M. Smalls.

While the consumption of milk per capita shows an increase, the number of cows per capita show a decrease. This would seem to indicate a marked improvement in the development of the dairy cow of the country. According to the statisticians there are 21,194,000 milch cows in the country, an average of one for every four of population.

In the decade of 1890 to 1900 the average production of every dairy cow showed an increase of 1,900 pounds of milk or a commercial gain of \$211,000,000. Yet with this improve-

ment also leave a liberal balance for profit.

The dairyman is entitled to liberal compensation, as he represents the most strenuous branch of husbandry. The dairyman is confined to his work every day in the year and follows a branch of live stock industry that needs methodical, systematic management. The dairyman is compelled to place business before pleasure or suffer serious losses. Regularity in feeding and milking is one of the great secrets of success in the dairy industry. Any branch of agriculture that involves such strenuous effort as dairy



Where Figures Don't Lie and Facts Astound.

(Prepared by the Dairy Department of the Illinois Agricultural College.)

husbandry should receive reasonable profit. There is no class of farming more under the control of the proprietor than dairying. It is a branch of husbandry that calls for the exercise of intelligence and judgment. The merchant and the manufacturer keep a record of their transactions and can tell whether their business is operated at a profit or loss. The milk producer can keep a record of his cows and weed out the unprofitable members and replace them with better performers. To keep a record of the individual production of the different members of the herd will add interest to dairy husbandry and show the proprietor how to increase his profits.

FEEDING THE CALVES SKIM MILK

By Prof. A. L. Haeccker, Nebraska Agricultural College.

The use of the hand separator has brought about the rearing of many calves on hand separator skim milk. The calf stanchion is the best equipment for calf feeding. This stanchion should be supplied with a little box or manger, and the stanchion should be used both in the calf pen and in the calf pasture. Care should be used to feed the skim milk fresh and warm from the separator, giving small rations in preference to large ones.

With the present prices paid for butter fat it requires a rich man to afford his calves the luxury of nursing their dams, and the one who says he cannot afford the time to milk and feed calves is either getting a very large salary or is well enough off so that he need not economize in this way. This does not, of course, refer to the man raising pure-bred beef cattle or the range conditions. There is quite a diversity of opinion in the method of rearing a calf on skim milk, and I do not assume that mine is the only one or that it is particularly better than others. But I have been very successful in raising calves for the past 20 years and attribute this success largely to the method employed.

After the calf is removed from the cow it should be given its mother's milk for a few days, and then any whole milk will answer, but it is better to give milk that is low in per cent. of butter fat than that which is high. Feed small rations in clean pails. When the calf is from ten days to two weeks old it may be changed from whole milk to skim milk by adding a small amount of skim milk, say one-fourth, and increasing this per cent. at each feeding until the change is made, and the calf is on a skim milk ration. The skim milk to be the best for calves should be fresh and warm from the separator.

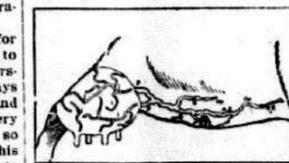
Now is the time to start feeding a butter fat substitute and this may be given in the milk until the calf is able to eat ground feed. Oil meal makes a good calf feed and a little added to the skim milk will answer the purpose. Here is when the calf stanchion will come in handy, for with such an equipment the calf can be taught to eat grain much earlier, on account of its being held in front of the grain and its being free from the annoyance of the other calves.

A good calf feed may be made by mixing the following food stuffs: Blood

Getting His Own Back.
"Thank goodness, sisters," shouted the suffragette leader, "our sex doesn't have to use razors."
"My wife uses my razor," spoke up the meek little man in the third row.
"Does a razor? What for?"
"Why, to sharpen her pencils with."

meal ten pounds, bone meal five pounds, oil meal 20 pounds, oat meal 20 pounds, corn meal 20 pounds. This mixed well together and given in small rations after the skim milk has been fed. The calf should also have free access to water and salt as well as hay or pasture, as the season may require. The grain may be changed to simply corn and oats or bran as the calf grows older, say after three months old. In this way good calves may be raised in an economic way, and the valuable butter fat will be saved.

JUDGING THE QUALITIES OF A DAIRY COW



Can a dairy cow be judged by outward form or by any special character? There are judges who claim that they can pick out the animals of good dairy form with a fair degree of assurance that these will be the best milkers. Other judges, and among them Prof. Dean, declare that form counts for little or nothing, and that all depends upon the performance at the pail. Most practical men, however, would allow themselves to be influenced by the size and appearance of the udder when purchasing a cow. The development of the mammary veins is also worthy of note. In the illustration the situation of the veins is indicated by I. I. I. on the udder. The extensions of these veins, along the abdomen are indicated F. F., and the branches by B.

Raising a Calf.—It is an expensive proposition to raise a calf on milk at the present market price. The quantity of milk which a calf will require for its maintenance and growth may be somewhat reduced by early teaching the calf to eat hay, corn, and other feeds. The young calf will learn to eat shelled corn at four or five weeks of age and hay at the same age or even earlier. By giving it these feeds twice daily regularly the milk ration may be reduced and the calf will thrive.

Hay for Cows.—Timothy hay is not a good cow feed. If you have a surplus of timothy and are short on clover, it will pay to sell the timothy hay and buy clover hay for the cows.

Hot Alimony.
"This man combines the more striking qualities of Baconfield and Pitt lacking the faults of both!"
"Who is he?" inquired the visitor in Plunkville.
"Jim Pills, stranger; our candidate for hog reeve."

SPRAYING POTATOES FOR BLIGHT AND BUGS

Bordeaux Mixture for the Former and Poison for the Latter—By E. P. Sandsten, Horticulturalist, Wisconsin Agricultural College.

This experiment station has conducted spraying trials for the last five years in the leading potato growing counties in the state to determine, first, whether early potato blight (Alternaria Solani) can be controlled by the application of Bordeaux mixture, and, secondly, to determine whether spraying should be recommended to the potato grower as a profitable investment and insurance against blight.

The term "early blight" is misleading, due to the fact that the disease does not usually do serious damage until after August 15. It must also be noted that the early blight upon potatoes does not rot the tubers. This injury is generally caused by some other organism. The early blight found is confined entirely to the vines and reduces the yield by causing an excessive percentage of culls and small potatoes at harvest. The last three weeks growth of the vine is the important time in the formation of tubers. By infesting the vines at this time, the disease shortens the growing period about two weeks, causing the large percentage of small potatoes.

If these affected leaves are examined with a high power magnifying glass it will be discovered that the tissues or cells of the leaf are permeated with little threads or strands of the fungus, which act like roots in absorbing the food supply of the leaf. If the leaf is thoroughly torn apart, very often at the ends of the little short threads will be found minute club-shaped bodies called spores, which serve a similar purpose as do the seeds to the higher plants. (See Fig. 2.) This little fungus plant grows and develops similar to the way of the potato on which it feeds. The little thread-like plants are wholly imperceptible to the naked eye. The black spots visible on the

other fungicide is applied to the leaf, these little spores and mycelial threads cannot develop on the leaf. The copper in Bordeaux mixture acts as poison upon the fungus plant. For this reason Bordeaux mixture must be applied at certain times and must, as a rule, be used for diseases like potato blight which infest and grow for a time upon the surface of the leaf. After the disease gains general

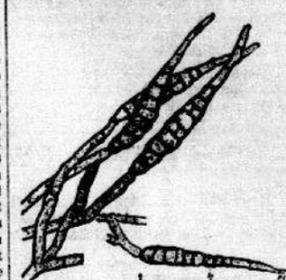


Fig. 2.—Enlarged Drawing of Spores or "Seeds" of the Potato Blight Fungus. The Spores Are Borne on Short Fruiting Branches. Magnified 335 Diameters.

infestation of the plant, only partial benefit can be expected from spraying, by preventing a rapid infestation and spread of the disease from new spores. Hence the usual direction, "Be on time."

Although very often the Bordeaux mixture and poison for the beetles may be combined, this method cannot always be relied upon. It will be noted that the destructive season of the beetles upon late potatoes lies between the dates July 1 and August 10. It must be noted also that the season of greatest destruction from blight



Fig. 1.—Potato Leaves Infested with Early Blight. Note Dense Black Spots Caused by the Fungus.

fungus are only the evidence of destroyed tissue, resulting from the breaking down of the plant cells by the parasitic fungus plant. The fungus plant on the potato vine is as dependent upon weather conditions and food supply for development as is the potato vine upon which it feeds and lives.

It will now be understood why some potato growers associate the rapid development of this disease with the recurrence of certain weather conditions. The weather is made the cause of the disease, although no account is taken of the presence of the little fungus plant which may have been

upon late potatoes usually comes between the dates of August 15 and September 20. Therefore, it is necessary to guard against the claims of some men that special dust machines, which are adaptable to applying poisons, may also be used in combination with dust sprays for the blight. However, the same machine sometimes can be used for both purposes. The station has had excellent results from combining the arsenates used against the beetles with a weak Bordeaux mixture. When this combination is put on early in the season, care should be taken to keep the pressure down so that the material is not wasted. The weak Bordeaux mixture used prevents any injuries which might result from some mistake in mixing the arsenic compounds. In midsummer the Bordeaux mixture would also have some fungicidal value. The station has applied with success the different poisons in combination with lime water, which also prevents injuries from free acid in the poison. It must be remembered that to successfully control the beetles, the poison must be applied immediately or soon after the eggs hatch. For this reason, when potatoes are raised on a large scale, it is necessary to have machinery which covers a wide area in a day's time. Weak Bordeaux mixture is made by combining four pounds of copper sulphate with eight pounds of lime to 100 gallons of water containing the poison. This weak Bordeaux mixture should be made in the same manner as the standard Bordeaux mixture.

Disking Land.—Few men realize the great advantage to be secured in disking land before breaking for corn. Where corn is to follow corn a weighted disk harrow can be used, not only for a stalk cutter, but for a pulverizer of the surface and the saving of the humus of the corn stalk, which is lost where they are burned, together with the greater ease with which the land can be broken make such a method of handling very desirable. One of the greatest benefits, however, comes from the much better connection that is made between the bottom of the furrow and the turned soil where the layer that is turned under is pulverized instead of hard and cloddy, as is too often the case.

HARDSHIPS OF ARMY LIFE

Left Thousands of Veterans with Kidney Trouble.

The experience of David W. Martin, a retired merchant of Bolivar, Mo., is just like thousands of others. Mr. Martin says: "I think I have had kidney disease ever since the war. During an engagement my horse fell on me, straining my back and injuring the kidneys. I have been told I had a floating kidney. I had intense pain in the back, headaches and dizzy spells, and the action of the bladder very irregular. About three years ago I tried Doan's Kidney Pills and inside of a comparatively short time was entirely rid of kidney trouble." Sold by all dealers, 50 cents a box. Foster-Milburn Co., Buffalo, N. Y.

A Sponge Garden.
A beautiful effect may be obtained by means of a damp sponge and a few seeds. Take a large piece of coarse sponge and cut it in any shape desired. Then soak it in water, squeeze half dry and sprinkle in the openings red clover seed, millet, barley, grass, rice, oats—any or all of these. Hang the sponge in a window where the sun shines at least part of the day.

PATENTS

List of Patents Issued Last Week to Northwestern Inventors.
Reported by Lohrop & Johnson, patent lawyers, 910 Pioneer Press Building, St. Paul, Minn.: W. O. H. Bergman, Bottineau, N. D., whiffletree; A. Dumas, Waltham, N. D., match box; F. Feucht, St. Paul, Minn., door latch; F. Hackmann, St. Paul, Minn., ham sifter; E. Lindblad, Kost, Minn., milk pump; H. A. Ludtke, Amboy, Minn., plow; A. Norrander, Clara City, Minn., wheel.

Fogs and Wireless Telegraphy.
It is one of the many marvels of the wireless telegraph that the ether waves which carry its messages, unlike light waves, suffer no absorption in mist or fog. Quite the opposite, in fact, is the case, for the effect on them of clear sunlight is so marked that they can be sent with equal initial power only less than half the distance by day as by night. For this reason press dispatches and long distance messages sent by wireless telegraphy are, wherever possible, committed to the ether waves after sunset.

Happy smiles! White teeth! What a delicious perfume! WRIGLEY'S SPEARMINT!

A Business Letter.
It is supposed that business letters are deficient in humor. Still, there have been exceptions, and the latest, sent by a member of the well known wholesale soap making firm of (let us say) Cake & Son, is one of the most brilliant. A retail dealer in a small way had sent for a consignment of their goods: "Gentlemen" (he writes), "wherefore have you not sent me the soap? Is it because you think my money is not so good as nobody else's? Dam you, Cake & Son; wherefore have you not sent the soap? Please send soap at once, and oblige, your respectfully, Richard Jones, P. S.—Since writing the above my wife has found the soap under the counter."

A Winter's Tale.
Mme. De Navarro praised at a luncheon in New York American wit. "It was horribly cold the other afternoon," she said. "A bitter wind whirled the dry snow through the air. The policemen had red, swollen faces, and all the teamsters, as they drove, kept slapping their poor frostbitten hands against their breasts."
"Getting into my hansom I said to the driver:
"This is real winter weather, isn't it?"
The driver nodded and smiled grimly.
"I give you my word, ma'am," said he. "I ain't seen a butterfly all day."

SICK DOCTOR
Proper Food Put Him Right.

The food experience of a physician in his own case when worn and weak from sickness, and when needing nourishment the worst way is valuable: "An attack of grip, so severe it came near making an end of me, left my stomach in such condition I could not retain any ordinary food. I knew of course that I must have food nourishment or I could never recover."
"I began to take four table-spoonfuls of Grape-Nuts and cream three times a day and for 2 weeks this was almost my only food; it tasted so delicious that I enjoyed it immensely and my stomach handled it perfectly from the first mouthful. It was so nourishing I was quickly built back to normal health and strength."
"Grape-Nuts is of great value as food to sustain life during serious attacks in which the stomach is so deranged it cannot digest and assimilate other foods."
"I am convinced that were Grape-Nuts more widely used by physicians, it would save many lives that are otherwise lost from lack of nourishment."
Absolutely the most perfect food in the world. Trial of Grape-Nuts 10 days proven. "There's a Reason."
Look in pkg. for the little book, "The Road to Wellville."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.