

# The Agricultural College Is a Friend to the Farmer

Bulletins and News Notes From the Staff at Pullman.



VIEW OF WASHINGTON AGRICULTURAL COLLEGE AT PULLMAN, WASH. ITS SOLE AIM IS TO AID AGRICULTURISTS.

## Recommendations for Making Seed Corn Bed

A LARGE number of farmers in Eastern Washington are planting a few trial patches of corn. Many of these will fail in their Summer's trial, largely because the seed bed has not been properly prepared. Professor George Severance, agriculturist of the State Experiment Station at Pullman, gives the following recommendations in regard to the preparation of the seed bed.

It must be remembered that the growth of the young plants will depend largely upon the supply of food they secure, and that this food is secured through the root system of the plant. It is necessary, then, that the corn plants make a rapid and complete development of this feeding system.

The root system is extremely delicate, and contains such an immense number of small rootlets and root hairs, when properly developed, that no space, even as small as a pea, can be found in the upper part of the soil that does not contain some of these root hairs. For such development it is necessary that the roots do not come in contact with hard clods. The entire furrow under the mulch should be thoroughly pulverized.

Where the land has not been plowed until time to plant corn, nor the surface disked to hold the moisture, the furrow breaks over in chunks. If the surface is then worked only with a smoothing harrow, the bottom of the furrow where this root system must develop is in no condition for proper root development. Soil in this condition at the time of plowing should be disked before plowing, and be worked with some form of compacting and clod-mashing tool after being plowed and disked, in order to work the soil deeply enough.

Every root hair should come in contact with soil grains, hence the furrow should be well worked down, leaving no large holes, as is usually the case with late plowed land, particularly if considerable straw, stubble, or other trash has been plowed under.

This is also necessary in order to insure a good supply of moisture. The presence of large air spaces permits the rapid drying out of the soil, and breaks the capillary connection with the soil moisture beneath, so that the young plants in the seed bed are deprived of the moisture they must have.

Many farmers reason that because the corn is a cultivated crop they may save time by planting the corn and fitting the ground later. This is entirely wrong.

The first growth of the plant is from the limited amount of food supply stored in the seed. This will keep the plant but a few days. It must then draw its food from the soil. If the young, delicate plants are to make a vigorous growth from the start, the roots should find the soil in proper condition at the outset to enable them to develop quickly and extensively, so that there will be no check in weaning from the mother seed.

Furthermore, the future cultivation does not fit the soil directly about the hill, where the plant in its tenderest stage is obliged to draw its food.

If the ground is to be properly prepared for corn, it should have been plowed last Fall so that the moisture may have been completely absorbed, and the furrow settled by the Winter rains. This has the further advantage of letting the weeds start in the early Spring, so that they can be largely cleaned out before the corn is planted. It also encourages the development of valuable food.

If the land is not Fall plowed, the next best thing is early Spring plowing. But whether plowed in the Fall, early Spring, or late Spring, the fact must not be overlooked that the seed bed must be thoroughly prepared before planting if complete success is expected.

## Care of Chicks in the Brooders

As a subsequent article to that of Professor Stoneburn on incubation, published last week, the following contribution by Helen Dow Whitaker, head of the poultry department of the Washington State College, should be read with interest.

LIFE at one time offered \$1,000,000 to the man who could capture the "ultimate" and deliver it to the editors of that publication intact. The ultimate in brooders would well be worth \$1,000,000 to the poultry industry of the United States. We have wrung the changes from lampless, fireless, oil heated, gasoline heated, steam heated, room heated back to the old red hen. The problem of brooding chicks differs with environment and numbers. There will never be any one brooding system that will suit all conditions, and doubtless we shall come to understand in time that the operator is the vital part of any brooding equipment.

I should like to put the eggs into my incubator at such an hour as to insure a cleaned-up hatch in the early morning. I would then remove the egg trays, leaving the chicks in the incubator nursery the first night. After removing the trays I would not bring the temperature back to more than 100 degrees and by the following day when the chicks are to be taken out of the incubator, I should have gradually lowered the temperature to 95 degrees. It requires a great deal of time and attention to keep the incubator thermometers steadily and slowly registering lower and lower, and this is just where the secret of proper temperature for the chick lies.

**Brooder Temperatures.** Meanwhile, the brooders should be heated through and through evenly and their thermometers registering 90 degrees. Take the chicks as carefully and quickly as possible from the incubator at 95 degrees to the brooder at 90 degrees. In 15 minutes the heat of the chicks will have raised the brooder thermometer to 95 degrees and the more venturesome chicks will be out for a drink.

I think we should bear in mind that in some brooders the thermometers are misleading, because they are seldom so placed as accurately to record the actual temperature of the space occupied by the chicks.

I have learned before putting chicks into a brooder, to run it empty 24 hours, not only to thoroughly dry it out and heat it up evenly through and through, but also that I may use at least two, preferably four thermometers before any chicks are put into the brooder, to get a line on temperatures in various places, both under the hover and out, and to learn how the reading of a thermometer on the floor under the hover corresponds with the one suspended over the chicks' heads, which is the one regularly used. The floor temperature should be considerably lower than the temperature in the hottest place under the hover.

**Less Heat Needed at Night.** I have learned that the chicks under the hover, as they are at night, require less heat than when they are in and out from the cooling room of

A page of interesting items from the Oregon Agricultural College at Corvallis will alternate in the farm weekly with a page of news notes from the Washington State College at Pullman. This will afford an interchange of views from the two big agricultural colleges of the Northwest that should prove of benefit to the reader, for the institutions deal with similar problems.

the brooder, as they are by day. If a little chick runs under the hover and finds a cozy, warm spot, he will snuggle up for a nap; if it is cold, he does not stay, reasoning that a half dozen others will drop in to help him heat up the place; instead, he runs out crying that it is a cold, cold world, and misses the much-needed nap. The first three days of the chick's life his greatest need is for even, comfortable temperature and plenty of sleep.

The statement that no brooder thermometer is needed as one can readily tell whether the chicks are comfortable by looking at them, is helpful, I think, where it is not needed—that is to the experienced chicken raiser. The inexperienced may be easily misled. The first bunch of brooder babies I ever raised looked comfortable to me at night when they were laying all spread out flat with their little heads stretched out from under the hover.

For several nights I tip-toed away content at the sight of their perfect comfort; then some happy chance, I forget what, caused me one night to put my hand under the hover just over their backs. It came back damp with the steam of those over-heated little sufferers.

**"Looking Comfortable."** Now when I wish to see whether or not my chicks "look comfortable," I raise the hover and look at the underneath side for dampness. I put my hand among the chicks to determine whether they are being weakened by a night sweat. I look at the chicks for drooping wings in the morning and lastly I look at my thermometer. Being satisfied by all these tests, the chicks "look comfortable" to me, if they are piled pretty well together, a little apart from the source of heat, but not huddled or bunched, and sleeping soundly, not ready to waken and crowd at the slightest disturbance.

There is one feature by which to condemn any brooder, and that is lack of ventilation. Personally I am fond of most sorts of preserves, but I make an exception in the case of preserved air and odors. I insist upon a brooder which provides for a copious intake of fresh air, which cannot possibly contain any fumes from the lamp, and also provides equally good outlet for the breathed-over odorous air from under the hover.

After the first week I believe in an every-day cleaning of the brooders, a cleaning so thorough that it dispenses with old air, old odors, old straw litter and every grain of left-over food, and which leaves all drinking dishes fairly shining in brightness.—Helen Dow Whitaker.

**The Cloak of Dreams.** They bade me follow fleet Where my brothers work and play, But the Cloak of Dreams blew over my feet, Tangling them from the way.

They bade me watch the skies For a signal dark or light, But the Cloak of Dreams blew over my eyes, Shutting them fast from sight.

I have no pain nor mirth, Wonderment nor desire, The Cloak of Dreams 'twixt me and earth, Wavers its drowsy fire.

I dream in dusk apart, Hearing a strange bird sing, And the Cloak of Dreams blows over my heart, Blinding and sheltering.

**Unsuccessful.** Drug Clerk—Did you kill any moths with those moth balls I gave you? Disconsolate Customer—No. I tried for five hours, but I couldn't hit a one.

## Sulphur-Soda Spray Inquiries Answered

THE Agricultural Experiment Station at Pullman is overwhelmed with inquiries concerning a new form of spray material widely advertised to replace sulphur-lime. Dr. A. L. Melander, entomologist of the station, presents the following statement about these preparations.

Sulphur-soda preparations are not new, although in their dry form they have not been long on the market. Ten years ago the Oregon Station passed judgment on one of them as "not at all efficient." At the same time the Virginia Station, using a sulphur-soda at double strength, decided it to be fairly effective, but expensive.

In 1913 this station tried in a limited way some dry sulphur-soda at Clarkston and at Prosser. Compared with sulphur-lime the results were promising, but the next year the tests were repeated at Clarkston, Walla Walla, Sunnyside and North Yakima. In each case the sulphur-soda did not prove so efficient as the sulphur-lime.

Both sprays were used at the rate of 30 pounds of solids to the 100 gallons, which is 50 per cent stronger than the manufacturers recommend for sulphur-soda and nearly 50 per cent weaker than the customary usage of sulphur-lime. In the case of the sulphur-lime this amounted to a dilution of one to 14, which is nearly twice as strong as the weakest spray that will kill scale.

Unsprayed check scales would average 80 per cent alive at the same time, and in each case the heavy oil sprays produced complete control.

There is no evidence to show that sulphur in the form of sulphur-soda is twice as efficient as in the form of sulphur-lime. However, dealers in dry sulphur-soda preparations claim that a 100-pound drum of this material is equal to a 600-pound barrel of sulphur-lime. The efficiency of sulphide sprays is universally believed to depend on the amount of polysulphide sulphur present.

A 50-gallon barrel of standard sulphur-lime contains in solution about 65 pounds of lime and 135 pounds of actual sulphur, of which 100 pounds are in the form of polysulphide sulphur—practically 200 pounds of solids dissolved in 320 pounds of water. The slogan, "Why pay freight on 500 pounds of water?" is therefore misleading. A drum of dry sulphur-soda contains about 64 pounds of actual sulphur, of which 43 pounds alone have insecticidal value.

The remaining sulphur is combined in the form of sodium thiosulphate, which is the familiar substance known to photographers as "hypo," which has no killing properties, and which makes up practically half the weight of the sulphur-soda compound. Based on polysulphide sulphur, therefore, a drum of sulphur-soda should sell at \$4.30 to compare with a barrel of sulphur-lime at \$10.

**She Knew All About It.** He placed his hand near to his heart and said: "The world knows not how great a load I bear Right here." She looked at him, then turned her head Away, Raising her handkerchief with care, She answered: "You're mistaken, I believe; No one can stand as near you as I do And not know all about it. So don't grieve." He looked surprised, then ate another clove or two. —Lippincott's.

**Horrible Thought.** George, you'll have to do something with Willie. Today he dropped a big worm down his little sister's back. "Oh, he's only a boy." "That's what you always say. But you'd better stop him now. If you don't he may grow up and drop bombs on hospitals."