

## THE FORMALIN TREATMENT FOR LOOSE AND STINKING SMUT.

There are two common species of grain smut, the stinking smut of wheat and the loose smut of wheat, oats and barley. In the former the spores by which the disease is propagated develop inside the grain, the disease frequently not being noticed until after the grain has been threshed, when plump, brown grains of very light weight are observed. These are easily broken, discharging the brown or black spores and giving off a characteristic odor. In the loose smut the chaff as well as the grain is affected, the entire spike turning into a brown smut mass and discharging its spores about the time of maturity of the grain.

The stinking smut of wheat and the loose smut of oats and barley may be prevented by destroying the spores which come in contact with the seed grain. One of the most efficient means of doing this being the formalin treatment. Formalin is a 40% solution of formaldehyde and can be secured at any drug store but as its strength is often below normal the purchaser should insist on a guarantee of the required per cent of formaldehyde and should also be sure that he is getting full weight.

Mix one pound or pint of formalin with forty gallons of water in a barrel or other convenient receptacle and stir thoroughly. After the seed has been thoroughly cleaned with the fanning mill to eliminate all the larger smut masses, especially the unbroken grains of stinking smut, the grain may be treated by either of the methods given below as revised from Press Bulletin No. 19 by Prof. J. A. Jeffery.

## SPRINKLING METHOD.

(1.) Spread a two-inch layer of grain upon a well swept floor which has been thoroughly saturated with the solution, then apply the formaldehyde mixture to the grain with a garden sprinkler until thoroughly wet. To this a second layer may be added and similarly treated, and so on.

(2.) Turn the moistened mass of grain with shovel or scoop till the surface of every kernel glistens with moisture, adding more solution if necessary; then shovel into a compact pile and allow to stand two hours. At the end of the two hours spread the grain into as thin a layer as the floor space will permit, and shovel occasionally till dry, when it may be bagged.

*Caution.*—Thoroughly saturate the floor on which the treating is to be done, with the solution, also all tools used, the bags receiving the treated grain, unless new, and the grain drill as well.

## DIPPING METHOD.

(1.) Put the grain to be treated in bags about 1 or 1½ bushels to each. Gunny sacks are much preferred, allowing the solution to pass into the grain and also draining more quickly than cotton bags.

(2.) Immerse each bag of grain completely for ten minutes, working thoroughly with the hands or otherwise, till all the grain is wet.

(3.) After ten minutes remove the bag and suspend it over the dipping vat, or place it on drainage boards which will return the excess solution for further use.

(4.) After dipping ceases, empty the grain on a clean floor, previously treated. Spread and stir frequently till dry.

(5.) If the grain is to be sown at once it need be dried only sufficiently to allow it to work well through the drill. If seeding is delayed for several days after treatment, by rain or other causes, the grain should be dried well, as remaining in the sacks or pile may injure it.

*Caution.*—The same precautions should be observed as given for the previous method. Also remember that in this treatment the kernels will swell and therefore due allowance must be made in setting the drill to insure application of sufficient seed.

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