

MICHIGAN AGRICULTURAL COLLEGE

EXPERIMENT STATION

Press Bulletin No. 13—Treatment of Seed Wheat to Prevent Stinking Smut.

The unusual prevalence of stinking smut in the wheat crop calls for extraordinary effort on the part of Michigan wheat growers to prevent a repetition of the loss next season. It is now well known that this smut is a disease carried forward from one year to another in the seed wheat. The disease converts the kernel into a black, ill-smelling mass of spores which, when the smutty kernels are broken up by the threshing machine or by handling, attach themselves to the sound kernels. After infected wheat is sown, the kernels and these spores of smut germinate at the same time. The smut plant grows inside the wheat stem throughout the season, and, when the crop is ripening, it turns the kernel in the head of the wheat into the well known smut kernels. The spread of the disease may best be prevented by finding, if possible, seed wheat free from smut. If you cannot obtain clean seed of your chosen variety, try the following treatment:

The first step is to clean off a space on the barn floor some ten feet square or larger if convenient. Sweep this area very thoroughly to remove all spores of smut possible.

Next buy of your druggist a pound bottle of formalin. He may not have this agent in stock, therefore, order it at once that he may have it in time for your use in September.

Mix the formalin with water in a large barrel in the proportion of one pound of formalin to four hundred pounds of water. This means that the pound of formalin should be mixed with fifty gallons of water, enough for thirty-five bushels of wheat. Knowing the proportions you can mix any quantity desired. Be sure to keep the bottle of formalin tightly and securely corked. It is not a dangerous poison but is unhealthy to take either by the nose or mouth. Do not mix the formalin and water until you are ready to use them.

Thoroughly wet the floor, on which you are to treat the wheat, with this formalin mixture, make it good and wet. Then spread on a layer of the seed wheat which you have previously well cleaned with a fanning mill. With a sprinkling

pot go over the layer of wheat, wetting it thoroughly, shovelling it over and re-sprinkling until every kernel is wet on all sides. Add more wheat and sprinkle or take up the wheat already treated and put down a new lot. Before putting the treated wheat into bags to carry to the field it may lay in a pile for a day, not longer because of the danger of heating and the farther danger that an excess of the formalin may hinder germination. Put the treated wheat into clean bags or into bags that have been wet with this formalin mixture. Be careful not to stir up a dust in the barn while the treated wheat is still exposed. The dust will be likely to be made up largely of the smut spores which we are fighting.

If you want to drill the wheat, it is well to allow it to dry either on a barn floor treated long enough beforehand with the formalin mixture to allow it to become thoroughly dry or on canvas, free from smut spores, and spread on the ground in the sun. The drill and everything else with which the wheat comes in contact after treatment should be free from smut spores or washed with the formalin mixture.

If you cannot buy formalin at your druggist's you may try corrosive sublimate if you dare when you remember that it is a deadly poison, and the greatest care must be taken to allow no animal access either to the drug itself or to the wheat that has been treated. Use a pound of corrosive sublimate to 400 pounds of water (fifty gallons). Dissolve the drug in three or four gallons of hot water in a wooden vessel. Do not allow the mixture to come in contact with metal. Later add enough cold water to bring the amount up to the fifty gallons. Proceed as with the formalin mixture, except that great care must be exercised to prevent poisoning live stock or children.

Our experiments have shown that either treatment will reduce the amount of smut in the wheat to a very small quantity or, if the season be right, will prevent smut altogether.

C. D. SMITH,

Director.