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Treatment of Seed Grain to Prevent Smut

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The unusually large amount of smut in grain, especially in wheat in the Plains Region during the season of 1909, has caused very great loss to growers. To prevent the spread of the disease, calls for vigorous measures by the farmers.

SMUT.

There are two kinds of smut affecting wheat, loose smut and stinking smut. Treatment of the seed will almost entirely prevent stinking smut.

It requires both treatment and cultural methods to prevent loose smut.

Both kinds of smut are fungus diseases. In each case the disease gets into the plant at or soon after germination while the plant is young.

The spores of stinking smut are carried almost entirely by the seed, consequently any treatment of the seed which kills the spores will prevent the appearance of the smut.

The spores of loose smut of wheat are also carried by the seed, but they may also be in the soil, if wheat damaged by loose smut occupied the land the previous year. Treatment of the seed will kill the loose smut spores on the seed, but will not kill the spores in the

soil. Consequently loose smut is liable to appear where wheat follows wheat, even tho the seed may be thoroly treated. The only way to successfully kill the spores of loose smut of wheat is to rotate the crops on the land. That is to say, grow some crop other than wheat on the land for at least one year.

Treatment of the seed will prevent stinking smut of wheat and the smuts which affect oats and barley. Treatment of the seed, together with rotation of crops will prevent loose smut of wheat.

TREATMENT OF SEED.

There are a number of methods of treating seed grain to prevent smut. Several of these have considerable merit. The cheapest, safest, most easily applied and most uniformally successful is the formalin treatment.

PREPARATION OF FORMALIN SOLUTION.

Obtain a 16-ounce (one-pound) bottle of formalin, 40 per cent. strength, at the drug store. When everything is ready for treating the seed, make up the treating solution by carefully mixing the formalin with water at the rate of 16 ounces (one pound) of formalin to 40 gallons of water. This would be one ounce of formalin to 2½ gallons of water.

TREATMENT OF THE SEED.

The seed may be treated with the prepared solution in one of two ways, the sprinkling method or the dipping method. If the sprinkling method is to be used, prepare a clean place on the floor or ground and spread down a large canvas or muslin sheet. Sprinkle the sheet thoroly, using a garden sprinkler. Now place the grain to be treated upon the sheet and sprinkle it thoroly. When the surface is good and moist, shovel the grain over as concrete is mixed, so as to moisten all of the grain. Continue this sprinkling and mixing until the grain is all well moistened. Now cover up the grain with sacks or blankets and allow it to stand for at least two hours. At the end of this time uncover the grain and spread it out so that it may dry thoroly. The germinating power is liable to be injured unless the grain is well dried after treatment.

The dipping method is performed by putting the solution in a barrel and then dipping the grain held in a gunny sack into the solution, allowing it to remain 10 minutes, taking it out and permitting it to drain until the superfluous liquid drains back into the barrel. After draining, the grain is placed in a pile and covered with

sacks or blankets, in the same manner as in the sprinkling method, and allowed to stand two hours, after which it should be thoroly dried before planting.

One pound of formalin to 40 gallons of water is sufficient to treat 2,500 pounds of grain. Smaller amounts of grain will require about two gallons of the solution to every 100 pounds of grain.

The following is a list of the recently published bulletins of the Colorado Experiment Station. Copies of any of these numbers will be supplied on request of,

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Fort Collins, Colorado.

No.	Title	Author
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124	Colorado Fodders	W. P. Headden
125	Colorado Fodders—A Study of Comparative Values Based on Bulletin No. 124	W. P. Headden
126	Cantaloupe Breeding	P. K. Blinn
127	Climate of Colorado—Temperature	L. G. Carpenter R. E. Trimble
128	Alfalfa Studies—Progress Report	P. K. Blinn
129	Extraction of Beeswax	F. C. Alford
130	The Evergreen Trees of Colorado	B. O. Longyear
131	Arsenical Poisoning of Fruit Trees	W. P. Headden
~~132~~	~~Destruction~~ of Concrete by Alkali	W. P. Headden
133	A Few Orchard Plant Lice	C. P. Gillette E. P. Taylor
134	Orchard Plant Lice and Their Remedies	C. P. Gillette E. P. Taylor
135	The Australian Salt Bush—Its composition and Digestibility. Notes on the Russian Thistle	W. P. Headden
136	Dewberry Growing	O. B. Whipple
137	Some Animal Diseases	G. H. Glover C. L. Barnes B. F. Kaupp
138	Some Bacterial Diseases of Plants	W. G. Sackett
139	Pruning Mature Fruit Trees	O. B. Whipple
140	Strawberry Growing in Colorado	B. O. Longyear
141	Grape Growing	O. B. Whipple
142	Tillage, Fertilizers and Shade Crops for Orchards	W. Paddock
143	Cabbage Growing	E. R. Bennett
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145	Dry Land Farming in Eastern Colorado	H. M. Cottrell
146	Raising Hogs in Colorado	H. M. Cottrell
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149	(1) Carrying Range Steers Through Winter (2) Sugar Beets for Fattening Steers	G. E. Morton W. L. Carlyle
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151	Ration Experiments With Lambs	G. E. Morton W. L. Carlyle
152	Two Common Orchard Mites	Geo. P. Weldon
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