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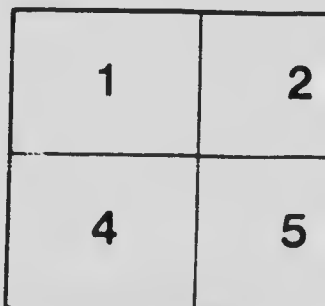
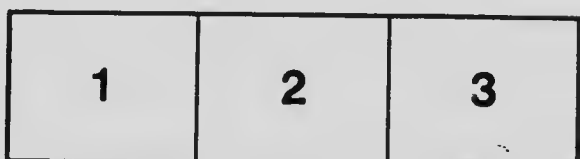
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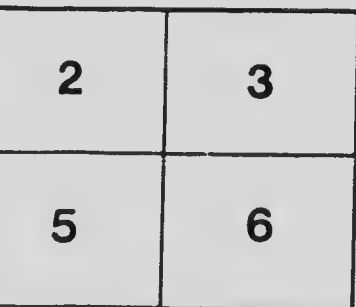
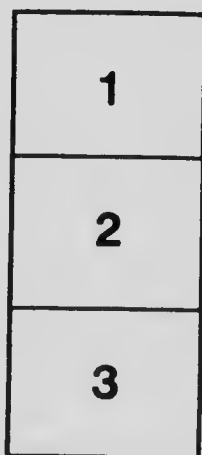
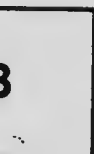
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# MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



4.5

5.0

5.6

6.3

7.1

8.0

9.0

10

11.2

12.5

14.0

16.0

18.0

20

22.5

25

28

32

36

40

45

50

56

63

71



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DOMINION OF CANADA.

DEPARTMENT OF AGRICULTURE.

EXPERIMENTAL FARMS.

DIVISION OF BOTANY.

J. H. GRISDALE, B.Agr.,  
Director.

H. T. GÜSSOW,  
Dominion Botanist.

## SEED TREATMENT FOR GRAIN SMUT.

(Stinking smut of wheat, oat smuts, covered smut of barley, broomcorn and millet smut, 'wilt' or blight of flax.)

BY

H. T. Güssow.

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### LOST

**\$12,000,000**

Every year by the grain growers of Manitoba, Saskatchewan and Alberta from smut diseases affecting their grain. How much smut did you notice in your grain? How much is your share of this loss? Don't lose another cent—treat your grain before sowing. If there was smut this year—there will be more in the next—hence don't omit treatment. This will explain how to do it.

*Bluestone solution.*—5 lbs. commercial bluestone to 50 Imp. gallons of water. Bluestone crystals dissolve readily by tying the required quantity into a small bag and suspending it over night in a wooden barrel holding 50 gallons of water. For bluestone no iron vessel should be used.

*Formalin solution.*—1 lb. of formalin (of normal strength = 40 per cent formaldehyde) to 40 Imp. gallons of water. Mix well before use.

*Steeping method.*—Fill bags half full of grain. Dip bags into solution chosen, move several times up and down to drive the air out and keep well immersed in bluestone not less than 2 minutes and not more than 3 minutes; in formalin solution not less than 4 minutes and not more than 5 minutes. Take out bags, drain and spread out to dry. Neither solution becomes exhausted in strength; if reduced in quantity by use, add fresh solution. Smut balls should be removed in the fanning mill.

*Sprinkling method.*—Either solution of the same strength may be used. Forty gallons suffices to treat 40-50 bushels of grain. Heap grain on clean floor. Sprinkle solution over it with a broom or sprinkling can. Mix well by shovelling over. When thoroughly mixed *spread out grain immediately to dry if bluestone is used.* When using formalin pile the grain and cover with clean bags. After three hours spread out to dry. For large quantities treat in a grain wagon, mix well and leave covered over night. Moist grain cannot feed the drill as freely as dry grain; for this reason adjust the drill carefully to allow free flow or the stand will be too thin.

*Drying after treating.*—Never expose wet grain to temperatures below freezing (32° F.). On sunny days spread out in the open to dry. If the weather is unsuitable spread grain out on clean barn floor. Dry as quickly as possible, if left wet too long it will sprout.

*Avoid re-infection.*—If not careful the spores of the smut fungi will re-infect the grain after treatment. As long as the grain is wet there is no danger, but once dry the risk is greater. Use new bags for re-bagging treated grain or dump old bags into either solution used, dry them, and they may be used again.

*Corn smut* is not controlled by seed treatment. Remove infected plants or parts as soon as noticed.

**NOTE.**—Loose smuts of wheat and barley are not controlled by seed treatment with chemicals. Hot water should be used for this purpose. For description of this method and other particulars see Bulletin No. 113, issued by the Experimental Farm, Ottawa.

For information on the control of grain diseases, potato diseases and similar troubles write to

H. T. GÜSSOW,  
*Dominion Botanist,  
 Central Experimental Farm, Ottawa.*





