

substance and such bluestone has been mistakenly said to be adulterated. Such is not the case, however, and this encrusted bluestone will regain its blue crystalline appearance if placed in a damp atmosphere for a time. On account of this bluestone being lighter in weight because of the loss of water a proportionately smaller quantity is required in making a solution with which to treat the seed grain.

This solution should be transparent and of a light greenish blue color. There should be no curdled masses or other undissolved material. Alkali water does not make a good solution of bluestone, because the magnesia and certain other earthy salts combine with the copper sulphate to form an insoluble compound which is of questionable value as a preventative of smut. If possible soft water should be used to make the solution of bluestone.

FORMALIN.

So far, only 25 samples of formalin have been received for analysis. Sixteen of these proved to be of 40% strength. The remainder were under the required 40% standard, the lowest being 34.5%. Formalin, when of standard strength is preferable to bluestone as a fungicide for smut, because (1) it acts more promptly and vigorously; (2) the solution is not affected by alkali water; (3) the grain, after treatment, is in better condition for the seeder. To secure the best results, however, the formalin must be full 40% in strength else the resulting solution will be too weak. The water and formalin should be measured out accurately: a certain number of fluid ounces to each gallon of water according to the strength of the solution, with which the seed grain is treated. By thus measuring the water and the formalin the farmer protects himself against the short measure pound package. A pound of formalin should contain 16 fluid ounces, and none should be used for smut, the strength of which is not known. If below 40% strength, a proportionably larger quantity must be added to the water to make the resulting solution of the required strength.

PRECAUTIONS FOR THE AVOIDANCE OF SMUT.

- Use plump seed of good variety.
- Use seed as free from smut as possible to procure.
- Fan thoroughly to remove light seed and smut balls.
- Treat it with bluestone or formalin.
- Dip the sacks also in the solution.
- Spray the granary, the wagon box and the seeder with formalin.
- Burn the stubble of the previous crop if it was smutty.
- Do not sow much earlier than the 1st April, nor unnecessarily deep.
- Do not pickle wheat in cold weather.

PREVENTATIVES.

Bluestone (sulphate of copper) has been known for a great many years as a means of preventing smut in grain, while formalin has only come into use quite recently but has been found eminently satisfactory. In the early years of the settlement of Saskatchewan the recommendations were for the soaking of seed in weak solutions of bluestone for prolonged periods, followed by applications of lime. This was found unsuitable to