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Effect of Hardness of Water on the Fungicidal Value of Mercuric Chloride Solutions

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silks may germinate and grow down the silks and infest the tip of the ear. The most common points of attack, however, are the nodes. Here infection takes place after pollen fall. Masses of pollen and blown spores of *Diplodia zeae* are caught within the moist leaf sheath where the pollen furnishes a starting medium for the fungus which later attacks the base of the leaf sheath and nodes. Similar infection takes place within the husk at the base of the ear.

There is no consistent evidence of a migration of the disease from the soil up to the ears or higher parts of the plant. Thirty-nine per cent of infected ears are borne on unaffected stalks while only 22 per cent of all infected stalks showed diplodia higher than the third from the ground. Further, but 31 per cent of the internodes have been found attacked by the fungus.

All observations and experiments emphasize the fact that *Diplodia zeae* infects locally at any point where blown spores may lodge, and that moisture and temperature are essential to growth there.

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EFFECT OF HARDNESS OF WATER ON THE FUNGICIDAL VALUE OF MERCURIC CHLORIDE SOLUTIONS

J. C. GILMAN

A comparison of the fungicidal value of mercuric chloride solutions made up in tap water with those made up in distilled water showed that the tap water solutions were much less effective in killing the sclerotia of *Rhizoctonia solani* on potato tubers. Of the 182 sclerotia treated with bichloride, 1-1000 in distilled water, only 6 or 1.1 per cent grew. In the case of a similar treatment of tap water solution of the 139 sclerotia examined, 34 or 7.1 per cent grew. Ninety per cent of untreated sclerotia grew in the control experiments.

These facts are important in the application of seed treatments where the grower uses hard water in making up disinfecting solutions.

IOWA STATE COLLEGE.