

DISINFECTANTS.

(1) *For seed tubers.*—These are not to be relied upon to make diseased tubers fit for planting, but only to destroy spores adhering to the surface. If sound "seed" is selected and disinfection practised, the chances of introducing Powdery Scab, Common Scab, Rhizoetonia and certain other diseases are much reduced.

(a) *Formalin (Formaldehyde).*—The substance, as purchased, should be guaranteed a 40 per cent solution of formaldehyde. A solution of this is prepared at the rate of 1 pound of the commercial substance to 30 gallons of water. The potatoes to be disinfected are soaked one and one-half to two hours in this solution before cutting. They are then taken out and spread on a clean floor, or on the grass, to dry. They may then be cut, if desired, and planted in the usual way. Whatever is to come into contact with the tubers after treatment, should be disinfected by being wiped down with, or immersed in, the same solution or, preferably, one still stronger. The solution may be used repeatedly, as it does not become weaker. There should always, however, be sufficient liquid to cover the tubers to be treated.

(b) *Corrosive Sublimate (Mercuric Chloride).*—This is a very powerful disinfectant, having given us better results than formalin with some organisms, notably Rhizoetonia. It is also very convenient, since it can be purchased in tablets of such a size that one, dissolved in a pint of water, makes a 1 to 1000 solution by weight. Its chief drawback is that it is intensely poisonous, and tubers treated with it cannot be used subsequently for food, as may be done, if desired, with those treated with formalin. The solution also corrodes metals, and must, therefore, be prepared in a wooden, glass, or earthenware vessel. For most purposes as a disinfectant, a solution of one part by weight in 1000 of water is employed, and this strength is commonly recommended for seed treatment, the seed being soaked for an hour and a half. We have, however, obtained better results from a 1 in 2000 solution used for three hours. The same precautions as given for formalin regarding subsequent contamination should be observed. The solution, however, becomes weaker with use owing to the absorption of the corrosive sublimate by the potatoes. The same solution should, therefore not be used more than six times.

(2) *For washing baskets, bins, implements, or sterilizing bags, containers, etc.,* the solution of corrosive sublimate (1 to 1000 strength) is reliable. Where, however, there is thought to be any danger to animals from its use, a strong solution of formalin, one pound of the commercial substance to one gallon of water, may be employed. While formaldehyde solution has a powerful local action on animal tissues, hardening the skin and irritating the mucous membrane, it is not poisonous in high dilutions. Furthermore, formaldehyde is a gas, and when the liquid has evaporated, the formaldehyde has passed off into the air, not being left behind as in the case of corrosive sublimate. For seed drills or other metal implements, which the frequent use of corrosive sublimate might corrode, the strong solution of formaldehyde may be employed, or a five per cent solution of carbolic acid. Cellars may be lime-washed with fresh quick lime, and the floors treated with chloride of lime (bleaching powder).