

1.5 per cent., 2.5 per cent. After treatment the tubers were placed in a heap and covered with a sack wetted with 1-3,000 mercuric chloride. They were left overnight and the sclerotia plated out in the morning.

Graph 8 shows that this treatment resulted in the death of all sclerotia taken from those tubers which had been immersed in 1-1,000 and 1-1,500 solutions to which had been added 1, 1.5, and 2.5 per cent. of hydrochloric acid. This reduction in time required for treatment allows of the treatment of tubers in large quantities by the use of a mechanical device whereby tubers may be carried on a conveyer through the solution and transported to the drying-floor.

#### DIRECTIONS FOR TREATMENT.

*Overnight Treatment.*—Procure a wooden or concrete (not metal) tub or trough and fill with Solution A (see below). Place the tubers in this solution, being careful to have sufficient liquid present to cover all to a depth of at least 3 in. Leave the tubers in overnight, and in the morning remove and either immediately plant or dry and store until required. The time of immersion (sixteen hours) is merely an arbitrary one, as equal results will be obtained whether the tubers are left in the solution for twelve or twenty-four hours.

*Five-minute Treatment.*—Prepare solution in the same way as in the previous treatment, but use instead Solution B (see below). Leave in for at least five minutes (longer periods than this will have no detrimental effect upon the tubers) and remove to a floor, where the tubers should be piled in heaps and covered with sacking dipped in the same solution. Leave the heap covered for from sixteen to twenty-four hours, and either plant immediately or dry and store until required.

#### SOLUTIONS.

*Solution A, Sixteen-hour Treatment.*—Stock solution: Mercuric chloride, 50 grams ( $1\frac{3}{4}$  oz. approx.); hydrochloric acid (conc.),  $\frac{1}{2}$  litre ( $\frac{7}{8}$  pint approx.). This quantity of stock solution contains sufficient to make 110 gallons of steep. For smaller quantities add 1 fluid ounce of the stock solution to 12 gallons of water.

*Solution B, Five-minute Treatment.*—Stock solution: Mercuric chloride, 200 grams (7 oz.); hydrochloric acid (conc.), 2 litres ( $3\frac{1}{2}$  pints). This quantity of stock solution is sufficient to make 66 gallons of steep. For smaller quantities add 1 pint of stock solution to 19 gallons of water. After treatment with A the solution should be discarded; Solution B may be used three or four times before being discarded. As these solutions are corrosive and very poisonous they should be handled with care and kept away from children or stock. The use of metal implements should be avoided, as they will become corroded if allowed to come in contact with these solutions.

The mercuric chloride used should be of good quality, and the hydrochloric acid of commercial concentrated standard (31 per cent.). The cost of these substances is comparatively low, mercuric chloride being 6s. per pound, and hydrochloric acid 7s. 6d. per "winchester" of 10 lb. Thus the cost of the material required to prepare 66 gallons of Solution B is 7s. 8d., and that of Solution A 1s. 2d.