

cient ventilation, with the other tubers which were to be treated later.

Observations, unless otherwise stated, were made on stand, seed-piece decay, relative vigor, stem lesions, tuber infection, and yield. The observations on stem lesions and seed-piece decay were made when the plants were about 2 to 4 inches above the surface of the ground. Very slight stem lesions, and slight decay of the seed pieces were included with the more severe symptoms in the percentages given in the different tables. When harvested the tubers were graded according to the standards of the United States Department of Agriculture, and the yields were calculated for the particular grades as indicated in the tables. The percentage differences in yield were obtained by comparing the yield of each treated lot with that of the corresponding untreated diseased sample. In 1926, 1927 and 1928 the significance of the differences was determined by using Love's modification of Student's Method (44). In 1929 the formulas

$$PE_m = \frac{.6745 \times \text{standard deviation}}{\sqrt{\text{number of items}}}$$

$$PE_d = \sqrt{a^2 + b^2}$$

were used, where a = the probable error of the mean of the treated lot and b = the probable error of the mean of the untreated lot with which the treated sample is compared. Odds listed by Pearl and Miner were used for the 1929 data(63), and only those increases with odds of over 22:1 are considered significant.

THE EXPERIMENTS IN 1924¹

Corrosive sublimate in a 1:1,000 solution (4 oz. to 30 gallons water) was the only material used in the preliminary trials of this season. Tubers, on about half of which were found a small number of sclerotia, were taken from the bag without any particular sorting and treated for 1½ hours at ordinary temperatures. Two weeks later they were cut and planted in two plots and compared directly in adjoining rows 125 feet long with a similar sample which had not been treated. Only a slight trace of stem lesions and no typical so-called "rhizoctonia hills"² were observed during the season. No sclerotia (black scurf) were seen on the tubers at digging time. Table II shows the yields which were

¹See also "Literature Cited," No. 33.

²Plants manifesting typical symptoms of the disease such as aerial tubers, etc.