

hundred-pound sacks per acre, respectively, at spacings of 12, 10 and 8 inches in the row.

Two-ounce whole seed produced slightly larger yields in 1949 than 2-ounce cut seed at the same spacing, but differences in yields were not significant. In other years cut seed outyielded whole seed of the same size and spacing as frequently as whole seed outyielded cut seed. These results agree with those of Chucka *et al* (5) and LeClerg (8).

Yields of U. S. 1A size potatoes in these tests were similar to the total yields—U. S. 1A and 1B potatoes combined, as shown in Table 6.

Percentage of U. S. 1A Potatoes.—As whole and cut seed of a given size were planted closer in the row, the percent of the resultant tubers which graded U. S. 1A size tended to decrease, Table 7. A similar tendency occurred as size of the whole and cut seed used was increased from 1 ounce to 2 ounces, but it was less in these tests than in those made with cut seed from 1943 to 1946.

As shown in Table 7, the percentage of tubers from the whole and cut seed which graded U. S. 1A size was the same when taken as an average for all 3 sizes of seed at 3 spacing distances in the row.

Number and Weight of Tubers per Plot.—The average number of tubers produced per plot increased each year as size of the whole and cut seed was increased and as whole and cut seed of a given size were spaced closer in the row. However, average weight of the tubers decreased, Table 8.

The average number and weight of tubers produced per plot was not affected by planting whole or cut seed of equal size at the same spacing. As an average for the different tests and all 3 sizes of seed at 3 spacings, the average number of tubers produced per plot was 145 for the whole seed and 143 for the cut seed. Average weight of tubers produced per plot on the same basis was 0.27 pounds both for whole and cut seed.

Since the number of tubers per plot increased with the use of larger seed and closer spacing, while average weight of these tubers decreased, it is evident that part of the increased yield was due to the production of tubers smaller than U. S. 1A size. Bates (1) obtained similar results and concluded that size of the seed controls the number of stems and tubers produced per hill and intensity of competition within hills; while seed-spacing