

spaced 8 inches yielded as much or more than the 1-ounce seed piece spaced at 6 inches. In 1945 the 1½-ounce seed pieces spaced 8 inches yielded slightly more than this seed size at the 6-inch spacing. Likewise in 1943 the 2-ounce seed spaced 8 inches apart yielded more than the same size seed piece spaced only 6 inches apart. None of these yearly differences in yield, however, was statistically significant, which indicates that spacing either of the sizes of cut seed 8 inches apart in the row would result in a yield as good as spacing them 6 inches. For the four-year period average total yields for all three sizes of cut seed at spacings of 14, 12, 10, 8 and 6 inches in the row were 126, 132, 141, 157 and 163 100-pound sacks per acre, respectively, as shown in Table 1. The yield from the 6-inch spacing would generally be only a small average (6 sacks per acre) increase over the 8-inch spacing.

Total yields for the 4-year period in which the 5 spacing distances were averaged were 123, 145 and 164 sacks per acre for the 1, 1½ and 2 ounce seed sizes, respectively, as shown in Table 1. These differences indicate that the yields increased significantly as size of the seed was increased from 1 to 2 ounces.

Increases in yield of U. S. 1A potatoes were obtained by planting larger cut seed and spacing the cut seed of a given size to 8 inches in the row, as shown in Table 2. Chucka *et al* (5) reported increased yields of U. S. 1 potatoes⁴ from using larger seed; and Smith, Hommel and Kelley (9) obtained increased yields of U. S. 1 potatoes by planting larger seed and spacing seed of a given size closer in the row, particularly with the Sebago.

Percentage of U. S. 1A Potatoes.—The percentage of the crop which graded U. S. 1A size was lower in 1944, when growing conditions were unfavorable, than in 1945 and 1946, when growing conditions were favorable, Table 3. However, each year the percentage of the crop which graded U. S. 1A size generally decreased as size of cut seed was increased and as seed of a given size were spaced closer in the row. The portion of the 4-year average yield which graded U. S. 1A from cut seed weighing 1, 1½ and 2 ounces each at 5 spacing distances in the row averaged 87, 86 and 85 percent, respectively. In the same tests the portion of total yield which graded U. S. 1A for all

⁴ Current USDA grade standard for sizes of potatoes, June 1, 1942, are as follows: U. S. 1 size round type potatoes shall consist of tubers with a minimum diameter of not less than 1½ inches; there being a tolerance of 3% for undersize tubers.