Results from Uniform Winterhardiness Nurseries of Oats Grown from 1942 to 1946

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THE cooperative uniform winterhardiness oat nurseries have been grown for 20 years. Results for the 10-year period, 1927–36, and for the 5 years, 1937–41, have been published (1, 2, 3). This paper reports data obtained on experiments grown during the period 1942 to 1946, inclusive, bringing the results up to date. During the 5 years 1942–46 killing of a differential nature was reported in 139 of the 224 nurseries sown.

During the first 10 years of these experiments each variety was planted at the rate of 100 kernels per row about 2 inches apart in rows usually 18 feet in length. From 1937 to 1941 two rows of each variety or strain were seeded, 50 seeds per row. Throughout the 15 years the percentages of survival were based on actual counts made in the fall and in the spring. Starting in the fall of 1941, the former method of seeding has been continued only in the deep South, whereas on the stations farther north each entry in the nursery is sown in duplicate 5-foot rows, 5 grams of seed per row being sown. In these latter nurseries survival percentages are based on estimates of stand in the fall and in the spring.

Actual counts of plants tend to disclose small differences which might otherwise be overlooked in the South where little killing occurs. Also, in the more southern areas, growth may continue throughout the winter and differences in growth rate could easily be mistaken for differences in hardiness. Although the summary data assembled here-with include the results from both types of nurseries, the data obtained from the individual stations have tended to show that, in general, the two methods give similar results.

In general, the states and stations which cooperated during the previous period have cooperated in these more recent experiments. Most of the stations in the Pacific Northwest have discontinued these experiments, whereas a number of new stations in the South have joined in the cooperation. In recent years some 40 to 45 stations have cooperated each year. The location of each nursery, the number of years grown during the period 1942 to 1946, and the names of the cooperators are given in Table 1.

Winterkilling was severe only in the winter of 1942–43. Reference to previously published data (2, 3) indicates that it likely was the most rigorous winter for oats since 1936 and that it was one of the four most disastrous seasons for fall-sown oats during the 20 years in which these experiments were conducted. Averages only are reported

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3Figures in parenthesis refer to "Literature Cited", p. 1035.