THE Red Rustproof type of oats has predominated in the Southwestern states for more than 50 years. In no other part of the country has a single type predominated for so long. Improved strains of this type of oats grown in this area include Nortex, New Nortex, Ferguson 71, and Ferguson 922. The development now of an oat that apparently can compete successfully with these Red Rustproof strains is of interest. Such an oat is Mustang.

History of Mustang

Mustang was selected from a Lee-Victoria × Fulwin cross. The cross X37BC was made by the junior writer at Aberdeen, Idaho, in 1937. The three varieties involved in the pedigree of Mustang, Lee (3, 10), Victoria (11), and Fulwin (8), are too well known to need description here. The one F1 seed obtained was planted in the greenhouse atop the U. S. Department of Agriculture’s South Building at Washington, D. C., in 1937. The F2 to F4 generations were grown in the “Pathology greenhouse” and the field nursery at Arlington, Va. Seed of F2, F3, and F4 plants was divided, part being sown in the greenhouse and part in the field. Greenhouse seedings were inoculated with crown rust by H. B. Humphrey, and the lines susceptible to crown rust were discarded.

The F4 strain, Arlington 1940 row No. 3770, ranked high in winter-hardiness, had a desirable growth type characteristic, was resistant to crown rust, and appeared to be homozygous. Consequently, the F5 generation was grown in yield test rows at Beltsville, Md., in 1940–41. Seed for sowing in rod rows in 1942 was sent to Tuscon, Ariz., and to the senior writer at Denton, Tex. At Denton the strain encountered one of the most severe winters on record, with a temperature of 4° on January 19 and a second severe late freeze with a minimum of 5° F on March 3. Selection 3770 survived as well as did its Fulwin parent in this season in which all Red Rustproof and other commercial varieties were killed. Because of its new winter-hardy oat, the strain was placed in replicated spring-sown tests in 1943 and in all State tests in Texas in the fall of 1944. It was found homozygous for kernel color so it was reselected. One of these reselections, 3770–9, was later accessioned as C.I. 4660 and has now been named Mustang.

Winter-hardiness of Mustang

Selection 3770 was included in a total of 50 tests in the Cooperative Uniform Winter-Hardiness Nurseries of 1945 and 1946 (2). It was equal in hardiness. The reselection Mustang has been grown in the hardiness nursery since 1946. In the five seasons reporting differential killing from 1947 to 1949, the weighted average survivals of Fulwin, Mustang, Lee, and Letoria were 81.4, 73.6, 72.6, and 69.7%, respectively, (4, 5, 6, 7). This indicates that Mustang is approximately 90% as cold resistant as its Fulwin parent and more hardy than either Lee or Letoria.

A series of unusually severe winters occurred in Texas during the period of testing of Mustang oats. Losses of from 200,000 to 300,000 acres of fall-sown oats occurred in each of the crop seasons of 1942, 1943, 1947, and 1948. Differential killing notes were for five seasons and are given in Table 2. In these five seasons Mustang survived 85.8% compared to 83% for Fulwin, 57.2% for New Nortex, and 51.2% for Fultex. It appears from these data that under Texas conditions, Mustang is as hardy as its Fulwin parent.