REGISTRATION OF BONKEE OATS1
(Reg. No. 211)
K. J. Frey, J. A. Browning, and R. L. Grindeland2

'SONKEE' oats (Avena sativa L.), C.I. 7563, Iowa C648, is very similar to Cherokee, Nemaha, and Bonham varieties in agronomic characteristics, but differs in the genes controlling reaction to stem rust. It was derived from the cross Bonham x Cherokee. R.L. 2105. R.L. 2105 is a Canadian selection from the cross 'Victoria' x 'Hajira' x 'Banner' 3x 'Victoria' x Hajira 4x 'Rexton'. At the end of the last backcrossing program (Bonham), two nearly isogenic lines were available; one carrying the A gene and the other the B gene, with equivalent extreme earliness in barley or wheat. For desert area adaptation. In this case, a dominant gene for extreme earliness was isolated. The variety name stresses this attribute. Though too early to permit maximum yields under irrigation, it should class as 4.

Bonkee is short to medium in height and early in maturity. It produces large, plump seeds that are awnless and ivory to pink in color. Under certain environmental conditions (probably associated with high temperatures at ripening time), the palea will show dark discoloration, even to the point of becoming black. This discoloration does not affect the groat. Foundation seed of Bonkee is maintained by the Committee for Agricultural Development and the Iowa Agricultural and Home Economics Experiment Station.

1 Registered by the Crop Science Society of America. Published with the approval of the Iowa Agricultural and Home Economics Experiment Station, Ames, Iowa, as Journal Paper No. 15523. Project 1176, in cooperation with the Crops Research Division, Agricultural Research Service, U.S. Department of Agriculture. Received Jan. 12, 1967.
2 Professor Plant Breeding and Professor of Plant Pathology, Iowa State University, and Agricultural Research Technician, Iowa State University, Ames, Iowa.

REGISTRATION OF SIERRA OATS1
(Reg. No. 213)
C. A. Suneson3

'SIERRA' oats (Avena sativa L.), C.I. 7706, CAS 5164, is from a special cross. Its parents were a mutant monosomic of 'Kenota' (A. byzantina L.) and a rust resistant wild selection of A. fatua. The crossing was done in 1947 — pollination of the mono- somic without emasculation, followed by positive identification, via dominance traits, of the hybrids and-selfs in 1948. In F2, F3, all plants with unwant- ed wild-type characters were discarded. Three years of testing F2-derived lines followed. A later mat- uring natural mutant line was isolated in 1955. It proved to be homzygous and superior in performance and was released in 1961 after state-wide testing.

In launching this breeding program the author had two purposes: to discover and use new genes from a compatible wild species4 and to develop a better method for the hybridization of this difficult to cross crop5. Since most cultivated oats have been developed in and for humid regions, any use of desert-derived A. fatua parents6 should help improve the adaptiveness of oats in arid regions.

In the 5 years since its 1962 release, Sierra has become the most widely grown oat variety in California for both grain and hay production. This resulted from its better yields and unique shatter resistance, which has made conventional windrowing unnecessary.

Sierra has large stems and leaves, a compressed panicle, and mottled grey or white seeds, with an occasional small awn. Under some conditions the palea may be almost black. Spikelet separation is by fracture, and floret separation generally by disarticulation, with a large rachilla segment remaining attached to the first floret. Growth is erect and maturity relative late. Sierra has been resistant to the races of crown and stem rust prevalent in California but is susceptible to some races common in other areas.

Sierra was a cooperative development by the Crops Research Division, Agricultural Research Service, U.S. Department of Agriculture, and the Agronomy Department of the California Agricultural Experiment Station. The California Station will maintain breeder seed.

1 Registered by the Crop Science Society, Cooperative investigations between the Crops Research Division, Agricultural Research Service, U.S. Department of Agriculture and the California Agricultural Experiment Station. Received Jan. 12, 1967.
2 Agronomist, Crops Research Division, ARS, USDA, Davis, Calif.