REGISTRATION OF CULTIVARS

Registration of ‘Adair’ Rice

‘Adair’ rice (Oryza sativa L.) (Reg. no. CV-95, PI 568890) is an early-maturing, high-yielding, long-grain cultivar developed cooperatively by the Arkansas Agricultural Experiment Station and the USDA-ARS. Adair was officially released in 1993 by the Agricultural Experiment Stations of the University of Arkansas, University of Florida, Louisiana State University, Mississippi State University, Texas A&M University, and the USDA-ARS.

Adair was named in memory of Charles Roy Adair, a pioneering USDA-ARS rice breeder located at the Rice Branch Experiment Station at Stuttgart, AR, from 1931 to 1953.

Adair originated from the cross ‘L-201’/RU7402003 made by J.N. Rutger at Davis, CA, in 1978. L-201 has shown tolerance to sheath blight (caused by Rhizoctonia solani Kühn) when grown in the southern USA (1). RU7402003 (unknown off-type/3/CI 9439//Bluebonnet/PI 184675) is an early-maturing, short-statured, high-yielding, long-grain experimental line developed at Crowley, LA. The experimental designation for early evaluation was STG85L9-112, starting from a bulk of the F2 panicle row grown in 1985.

The principal reasons for releasing Adair are early maturity, high yield potential, and sheath blight tolerance. In 17 Arkansas Rice Performance Trials conducted from 1990 to 1992, Adair matured similarly to ‘Alan’ and ‘Tebonnet’ at 81, 80, and 82 d to 50% heading, respectively, but not as early as ‘Maybelle’, which matured in 77 d. Plant height for Adair (107 cm) was between that of Alan (100 cm) and Tebonnet (124 cm). Adair is more resistant to lodging than Tebonnet but less resistant than Alan. Grain yields at 120 g kg\(^{-1}\) moisture content of Adair, Alan, Tebonnet, and Maybelle averaged 8268, 7638, 7488, and 7520 kg ha\(^{-1}\), respectively. Milling yields (mg g\(^{-1}\) whole kernel/mg g\(^{-1}\) total milled rice) at 120 g kg\(^{-1}\) moisture content for Adair, Alan, Tebonnet, and Maybelle averaged 706, 590:713, 603:720, and 557:717, respectively. Individual grain dimensions are given in Table 1.

Adair was tested in the Cooperative Uniform Regional Rice Nurseries (URRN) with the designation RU9001007. Tests were conducted in Arkansas, Louisiana, Mississippi, and Texas from 1990 to 1992. Grain yield (120 g kg\(^{-1}\) moisture content) in the URRN for Adair, Alan, Tebonnet, and Maybelle averaged 7756, 6649, 6694, and 6597 kg ha\(^{-1}\), respectively; milling yields averaged 547:693, 570:697, 593:703, respectively.

Adair is moderately susceptible to rice blast [caused by Pyricularia grisea (Cooke) Sacc.] races IG-1, IH-1, IC-17, and IB-49, the predominant blast races in the southern USA. Adair is moderately tolerant to sheath blight, rating similarly to ‘Katy’. It is susceptible to the physiological straighthead and rates similarly to Tebonnet.

Plants of Adair have erect culms, erect leaves that tend to droop upon maturity, and glabrous lemma, palea, and leaf blades. The endosperm of Adair is nonglutinous and has a light brown pericarp. Results from the USDA-ARS Rice Quality Research Laboratory, Beaumont, TX, indicate that Adair has typical U.S. southern long-grain processing quality characteristics (2). Adair is classified as a relatively high amylose–intermediate gelatinizing type, having an average apparent starch amylose content of 7.27 g kg\(^{-1}\) and an average alkali (17 g kg\(^{-1}\) KOH) spread of 3.5.

In 1991, an initial increase of 1200 panicle rows was made at Stuttgart, AR. The panicle rows were rogued for phenotypically similar rows were selected for the increase, which was grown in 1992. A 4-ha field was also grown in 1992 from a bulk of the panicle rows grown in 1991. The foundation row was rogued several times throughout the growing season for a few taller, shorter, earlier and/or later plants as well as a possible intermediate grain and other off-type plants encountered in the cultivar. The total variants were numbered <1 per 5000 plants.

Breeder and foundation seed of Adair will be maintained by the University of Arkansas, Rice Research and Promotion Center, P.O. Box 351, Stuttgart, AR 72160.

Plans are being made to apply for protection under Title V of the U.S. Plant Variety Protection Act.


References and Notes

3. K.A. Gravois, K.A.K. Moldenhauer, F.N. Lee, R.J. Norman, P.C. Rohman, and M.M. Blocker, Univ. of Arkansas, Rice Res. and Ext. Ctr., P.O. Box 351, Stuttgart, AR 72160; B. R. Wells, USDA-ARS. Rice Research and Promotion Center, P.O. Box 351, Stuttgart, AR 72160.

Table 1. Rough, brown, and milled grain dimensions and weight of Adair, Alan, Tebonnet, and Maybelle grown in Arkansas from 1990 to 1992.