REGISTRATION OF CROP CULTIVARS

Toalson was derived from a cross made in 1965 between breeding line TPL 673-A and 'Starr'. Line TPL 673-A was developed from the cross PI 221057 (a small seeded Spanish) x Selection 26 (a sister line of 'Spantex'). Generation advance of the F₄, F₅, and F₆ from TPL 673-A x Starr was by individual plant selection in the greenhouse. Toalson was selected from a large group of field-planted F₂ sister lines. Toalson was first tested for yield in 1969 as an F₅. In 1974, 202 plants were selected from a spaced F₄ nursey; these were grown as plant rows in 1975 and progeny blocks in 1976. Eleven lines were discarded in each of the plant row and progeny block generations; the remaining 180 selections were bulk harvested and blended to make up the breeder seed reserve of Toalson.

Pod rot evaluations (3, 4, 7, 8, 9) have indicated that Toalson is more resistant to Pythium myriotylum Dreschler and Rhizoctonia solani Kuhn than the other commercial cultivars tested. Toalson has returned more dollars gross income than 'Tammut 74' under pod disease stress, but it seldom overcomes the greater yield potential of 'Florunner'. Without pod rot stress Toalson has averaged about the same gross return as Starr.

The pegs of Toalson are stronger than most other cultivars, resulting in a higher percentage of pod recovery, especially under adverse harvest conditions. Toalson will usually grade lower in percentage of damaged kernels than other cultivars when pod disease is a problem. The pods of Toalson dig clean from most soils. Pod sizes average about 5% larger in diameter and 11% longer than Tammut 74. Seed size is essentially the same as Starr.

In shelling tests, Toalson had a lower shelling percent than most other cultivars, but it shells out as high in sound, mature kernels as other Spanish cultivars because of a lower percentage of small kernels. Toalson requires about 10 to 15 days longer to mature than Starr under most conditions. Organoleptic and chemical tests indicate no major difference between Toalson and other Spanish cultivars. Breeder seed will be maintained at the Texas Agricultural Experiment Station, Texas A&M University, Stephenville, TX 76401.

REGISTRATION OF NOVA 76 RICE

T. H. Johnston, B. R. Wells, M. A. Marchetti, and S. E. Henry

'NOVA 76' rice (Oryza sativa L.), CI 9948, is a short-season medium-grain cultivar developed cooperatively by the Arkansas Agricultural Experiment Station, and AR, SEA, USDA, at Stuttgart, Ark. It was selected from Cross No. 65/10 between CI 9580 and Nova 66 made at Stuttgart in 1965 and was designated by the AR, SEA, USDA, and Arkansas Agric. Exp. Stn. in 1981.

CI 9580 is a true-breeding, disease-resistant, experimental variety selected at Stuttgart from the cross 'Northrose' x 'Zenith'. It was derived from an inheritance study by Atkins and Johnston (1965). Nova 66 was designated by Johnston and Henry (1965). Nova 66 was described by Johnston et al. (1968). Nova 76 was designated CI 9948 in extensive regional testing. Nova 76 has moderately wide leaves and are similar in appearance to those of Nova 66 but average 5 cm shorter and are less susceptible to lodging. Plants of Nova 76 show more vegetative growth than desired when excessive rates of N fertilizer are applied. The spikelet of Nova 76 is straw-colored, glabrous, awnless, and the apiculus is colorless. The grains are similar in appearance, but slightly larger than those of Nova 66. Dimensions of brown rice kernels of Nova 76, 'Nato', and 'Zenith', respectively, are 6.3, 5.9, and 6.2 mm in length; 2.8, 2.7, and 2.7 mm in width; 21.2, 18.5, and 20.5 mg in individual kernel weight. Corresponding values for milled rice are 6.0, 5.8, and 6.0 mm in length; 2.7, 2.6, and 2.6 mm in width; 19.2, 17.0, and 19.4 mg in weight per kernel. Milled kernels of Nova 76 are translucent and there usually are fewer chalky kernels than in milled samples of Nato or 'Brazos'.

Nova 76 was released in Arkansas as a blast-resistant replacement for the high yielding Nova 66. Grain yields, in the absence of the blast disease, were about equal for the two cultivars in 22 replicated tests in Arkansas conducted over a 5-year period. However, Nova 76 showed a much higher degree of resistance to the prevailing pathogenic races of the blast fungus (incited by Pyricularia oryzae Cav.) in Arkansas field tests than have the other medium-grain cultivars Nova 66, Nato, and Brazos. Each of the latter cultivars suffered considerable damage from blast disease in commercial Arkansas fields in 1975. Nova 76 also showed more resistance to blast in artificially inoculated tests at Beaumont, Tex.

Nova 76 may be more susceptible to straighthead, a physiological disease than are Nova 66 and Nato; however, recommended drainage practices have prevented damage from straighthead in cooperative performance tests. Nova 76 is similar to the other medium-grain cultivars in reaction to the complex of sheath and stem diseases according to Hunter et al. (1977).

Nova 76 is approximately equal to Nova 66 and superior to Nato in grain yield. The average whole kernel milling yield of Nova 76 is about equal to that of Nova 66 but below that of Nato. Nova 76 possesses the necessary cooking and processing qualities required of U.S. medium-grain cultivars.

Nova 76 was officially released on 11 Feb. 1976. Foundation seed was produced by the University of Arkansas Rice Branch Experiment Station, Stuttgart, which will maintain breeder seed as needed. The original release of Nova 76 contained a trace of off-types including a few taller plants and an occasional plant of later maturity. Application will not be made for protection of Nova 76 under the Plant Variety Protection Act. Additional information on Nova 76 has been published by Johnston et al. (1976), Huey (1977), and Huey (1977, 1979).

REFERENCES


Beaumont, Tex.; and research assistant, Univ. of Arkansas Rice Branch Exp. Stn., Stuttgart.

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