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REGISTRATION OF 'L-203' RICE

'L-203' RICE (*Oryza sativa* L.) (Reg. no. CV-89, PI 547249) designated experimentally as 88-Y-774 was developed by the California Cooperative Rice Research Foundation (CCRRF) at the Rice Experiment Station, Biggs, CA. It was released cooperatively by CCRRF, California Agricultural Experiment Station, and USDA-ARS in 1991. L-203 originated from an F_6 line of the 1983 cross, 'L-202'/83-Y-45, designated R8845. The L-202 (4) parent is an early maturing, semidwarf long-grain cultivar developed by CCRRF, and was used in the cross before naming. The 83-Y-45 parent was a high yielding, semidwarf selection from the cross 5915C-35-8/3/'IR-8'/R1-7*3/2/R50-1/4/77-Y-48. 5915C-35-8, R1-7, and R50-1 were tall long-grain lines developed by CCRRF, and IR-8 is a high yielding semidwarf cultivar developed by the International Rice Research Institute. 77-Y-48 was a sister line of 'L-201' (2). Generation advances and seed increase were accelerated in a winter nursery conducted by the University of Hawaii on Kauai.

L-203 is a photoperiod insensitive, early maturing, semidwarf, long-grain cultivar. L-203 heads in 91 d at Biggs, CA, which is 1 d later than 'M-202' (1), and 5 to 7 d earlier than L-202. Average plant heights of L-203, L-202, and M-202 are 89, 83, and 95 cm, respectively. L-203 plants have glabrous leaves and hulls, except for a few hairs on leaf margins, and lemma and palea keels. Leaves of L-203 are wider and longer than those of L-202. Anthocyanin pigmentation occurs only in the apiculi and mature leaf sheath of L-203.

L-203 grains are awnless and similar in size to L-202 grains. Brown rice kernels of L-203 average 21.3 mg in weight, 7.8 mm in length, and 2.2 mm in width compared to 21.5 mg, 7.8 mm, and 2.2 mm, respectively, for L-202. L-203 has colorless, nonglutinous, nonaromatic endosperm with apparent amylose content of 255 g kg^{-1} (25.5%) compared to 251 g kg^{-1} (25.1%) for L-202. The starch of L-203 has an intermediate gelatinization temperature as indicated by spreading values of 3 to 5 in 17 g L^{-1} KOH solution. Amylose content and alkali spreading values were determined by the USDA-ARS Cooperative Regional Rice Quality Laboratory at Beaumont, TX. The apparent amylose content of L-203 is $\approx$20 to 30 mg g^{-1} (2-3%) higher than the amylose content of typical Southern U.S. long-grain cultivars (5). Head rice yield for L-203 and L-202 averaged 531 (53.1%) and 535 (53.5%) mg g^{-1}, respectively in tests conducted in 1989 and 1990. Milling samples were sequentially harvested as moisture content decreased from 230 to 150 mg g^{-1} (23 to 15%).

L-203 is tolerant of molinate and thiobencarb herbicides in the seedling stage, as are other cultivars currently grown in California. It has moderate seedling vigor similar to L-202 when grown in a water-seeded cultural system. L-203 is similar to L-202 in tolerance to cool temperature induced sterility. L-203 showed no significant difference from L-202 in reaction to stem rot (*Sclerotium oryzae* Cattaneo) and aggregate sheath spot [*Rhizoctonia oryzae-sativae* (Sawada) Mordue]. The stem rot disease ratings (scale of 0-10) (2) were 5.1 and 5.5, and aggregate sheath spot ratings (number of dead leaves on the uppermost 4 nodes) were 2.1 and 1.9 for L-203 and L-202, respectively. Reaction to diseases not prevalent in California is unknown.

L-203 was evaluated in direct comparison with M-202 in 14 combine-size plot tests and with L-202 in 12 tests conducted cooperatively with the University of California Cooperative Extension from 1988 to 1990. Mean grain yields at 120 mg g^{-1} (12%) grain moisture of L-203 and M-202 were 10 715 and 10 028 kg ha^{-1}, respectively, in the L-203 vs. M-202 comparisons, and 10 752 and 9808 kg ha^{-1} for L-203 and L-202, respectively, in the L-203 vs. L-202 comparisons. L-203 has less lodging resistance than L-202, as indicated by lodging values of 16 and 9%, respectively. L-203 has an adaptation pattern similar to M-202 and, therefore, L-203 may permit long-grain rice production in areas where L-202 is too late maturing.

L-203 was approved for certification by the California Crop Improvement Association in 1991. Off-type plants (0.03%) were found and rogued from the initial foundation seed field. Included in the off-type plants were medium-grain and plants with grain shape between medium- and long-grain that were slightly taller and later than L-203. The latter seem to be L-203 outcrosses to medium- or short-grain rices. Classes of seed produced in California will be breeder, foundation, registered, and certified. Application is made for L-203 under the Plant Variety Protection Act, Title V option. Breeder and foundation seed classes are maintained by the California Cooperative Rice Research Foundation, Inc., P.O. Box 306, Biggs, CA 95917.

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References and Notes

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