REGISTRATION OF ‘M-202’ RICE

‘M-202’ medium-grain rice (Oryza sativa L.), (Reg. no. 72) P1494105, designated experimentally as 81-Y-124, was developed by the California Co-operative Rice Research Foundation, Biggs, CA. It is a pure line selection from the 1977 cross, R4464. The pedigree is ‘IR-8’/‘CS-M3’*7// ‘10-7’*//3//‘M-101’. The female parent of the final cross was derived from the same cross that gave rise to the early California cultivar ‘M9’ and is similar to M9 (1). M-101 is a cold-tolerant, very early flowering California cultivar that derives its short stature and earliness from two induced mutants from ‘Calrose’ (4). Calrose was the predominant California medium-grain cultivar during the 1950s and 1960s (3). M-202 is a product of pedigree selection. A winter nursery in Hawaii was used to accelerate advancement of generations. M-202 is a photoperiod insensitive, early maturing, semi-dwarf cultivar. It heads about 2 days earlier than M9. The average plant height of M-202 is 4 cm shorter than that of M9 (90 vs. 94 cm). M-202 is more resistant to lodging than M9, averaging 22 vs. 47% for the latter. M-202 has glabrous lemma, palea, and leaf blades except that some hairs are found on the lemma keel and on leaf margins. M-202 is sparsely awned. No plant parts of M-202 show anthocyanin pigmentation.

Panicles of M-202 normally are exserted completely from leaf sheaths. The new cultivar has seedling vigor comparable to M9 and equal or superior tolerance to sterility caused by cool night temperatures 10 to 14 days before heading. It is less susceptible (score of 4.7 vs. 5.3 on a scale of 1 to 10) than M9 to stem rot (incited by Sclerotium oryzae (Saw) Mordue). Reaction of M-202 to other diseases that are not prevalent in California is unknown.

Brown rice kernels of M-202 are slightly smaller than those of M9, averaging 23.8 mg per kernel, 6.1 mm long, and 2.85 mm wide compared to 24.9 mg., 6.2, and 2.87 mm for M9, respectively. Milled kernels of M-202 are translucent. Grains of M-202 have light brown pericarp, and white non-glutinous and non-aromatic endosperm. Results from the Cooperative Regional Rice Quality Laboratory at Beaumont, TX, showed that amylose makes up 17 to 18% of the endosperm starch, which has a low gelatinization temperature as indicated by an alkali spreading score of 6.9. These values are typical for U.S. medium-grain cultivars (5). Taste panelists rated M-202 as satisfactory. Whole kernel (head) and total milling yield of M-202 were satisfactory and 1 to 2% higher than M9.

M-202 has performed very well in 15 replicated tests conducted in cooperation with the University of California Cooperative Extension. These tests included current early maturing cultivars and experimental varieties at sites in 1982, 1983, and 1984 representative of the California rice growing areas. M-202 averaged 10 909 kg ha\(^{-1}\) (9462 lbs ac\(^{-1}\)) of paddy (rough rice) at 13.0% moisture compared to 9853 kg ha\(^{-1}\) (8789 lbs ac\(^{-1}\)) for M9 for an average yield increase of 9.7%. M-202 is expected to replace M9 in the cooler areas where ‘M-201’ (2) has not replaced it and for seeding in warmer areas that are later than desired for M-201.

Like M9, M-202 threshes harder than M-201. Foundation seed of M-202 was made available to seed growers in 1980. It was released jointly by the developer along with the California Agricultural Experiment Station and USDA-ARS. It was approved for certification by the California Crop Improvement Association in 1985. Application is not being made for plant variety protection of M-202. Classes of seed will be breeder, foundation, registered, and certified. The 1984 foundation seed field contained about 0.2% short-grain off types. These have been described to the California certifying agency and 1985 head-row seed is pure. Breeder and Foundation seed will be maintained by the California Co-operative Rice Research Foundation, P. O. Box 306, Biggs, CA 95917.


References and Notes

6. Plant breeder, director of plant breeding, plant breeder, and plant pathologist, California Cooperative Rice Res. Foundation, Biggs, CA 95917; and extension agronomist, Dep. of Agronomy and Range Science, Univ. of California, Davis, CA 95616. Registration by the Crop Sci. Soc. of Am. Accepted 19 July 1985.