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REGISTRATION OF 'STREAKER' REDTOP

'STREAKER' redtop [*Agrostis alba* L. (*A. gigantea* Roth.)] (Reg. no. CV-117) (PI 527690) was developed and released in August 1982, by Jacklin Seed Co. of Post Falls, ID, and Lofts Seed, Inc. of Bound Brook, NJ. Streaker was tested under the experimental designation P-501.2.

Seedlots from 21 fields of common redtop were screened for uniformity, vigor, and seed setting ability in 1976 and 1977. All parents of Streaker originated from a field of common redtop growing in Illinois. The origin of the Illinois field was unknown, but dated back many years. Seed from the Illinois field was planted in a selection nursery in 1978, near Post Falls, ID. Open pollinated progeny from the thousands of selected plants were used to establish a breeders nursery in northern Idaho in 1979. The breeder seed field was rogued and selected for uniformity and trueness to type. Breeder seed was first produced in 1980. Tests of progeny show the cultivar to be highly stable and uniform. Fewer than 5% of plants in certified seed production fields exhibit plant forms not characteristic of the cultivar. The first certified seed was produced in northeastern Washington in 1982.

Streaker is a loosely tufted perennial with a strongly rhizomatous growth habit. Culms are smooth and erect, and average 1.12 m in height. Leaves are dull green and hairless. There are approximately 10 200 seeds per gram of clean seed. Lemmas of Streaker are silvery translucent, as opposed to pale to deep gold in common redtop (1). The palea of Streaker has no observable notch; common redtop is sometimes notched (1). In national turf trials, Streaker has shown moderately high spring density, moderately good early spring color, a fine leaf texture, and good resistance to melting-out disease (incited by *Drechslera* spp.). When used in dormant overseeding, stands of Streaker transition back to the permanent warm-season grass in spring earlier than most perennial ryegrass (*Lolium perenne* L.) varieties. Streaker is presently the only cultivar of certified redtop commercially available in the USA. Streaker is recommended for use in low maintenance turf, pastures, and reclamation areas in temperate climates, and for winter overseeding of dormant warm-season grasses. Streaker is compatible seeding in mixtures with other grasses such as perennial ryegrass, tall fescue (*Festuca arundinacea* Schreb.), creeping bentgrass (*Agrostis palustris* Huds.), and rough bluegrass (*Poa trivialis* L.). Optimal mixture ratio with *Agrostis* species is 50% Streaker (by weight), or with perennial ryegrass, 10 to 15% Streaker. Streaker is recommended for use wherever redtop is adapted.

Breeder seed is maintained by Jacklin Seed Co. Seed propagation is limited to two generations of increase from breeder seed, one each of foundation and certified. Uncertified production of Streaker is not permitted. There is no limitation on age of stands.

Plant variety protection has not been requested.

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References and Notes

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REGISTRATION OF 'M-203' RICE

'M-203' rice (*Oryza sativa* L.), (Reg. no. 76) (PI 514276) is an early maturing, semidwarf, medium-grain cultivar developed by the California Cooperative Rice Research Foundation at the Rice Experiment Station, Biggs, CA. M-203 was tested in University of California Co-operative Extension state-wide tests with the experimental designation 86-Y-35.

M-203 is a pure line selection made in 1984 from the X₂ generation of 'M-401' seeds radiated with 25 kr of ⁶⁰Co. The M-401 parent is a late maturing, photoperiod sensitive, semidwarf, premium quality, medium-grain cultivar that is an induced semidwarf mutant (1).

M-203 is photoperiod insensitive and heads 14 to 17 d earlier than M-401 and one day earlier than 'M-202' (2). Average plant height of M-203 is the same as that of the widely grown semidwarf cultivar M-202. M-203 is more susceptible to lodging than M-202 (51 vs 12%). M-203 has glabrous lemma, palea, and leaf blades except a few hairs are present on leaf margins and on the lemma keel. Florets of M-203 are sparsely awned. No plant parts of M-203 show anthocyanin pigmentation.

Panicles of M-203 normally are exerted completely from the leaf sheaths. The new cultivar has good but slightly less seedling vigor than M-202 (4.2 vs 4.4 score on a 1-5 basis). M-203 is similar to current California cultivars in tolerance to recommended rice herbicides. Reaction of M-203 to sterility caused by cool night temperatures 10 to 14 d before heading, like the M-401 parent, is more sensitive than M-202. M-203 is slightly more susceptible than M-202 (5.8 vs 4.9) to stem rot (caused by *Sclerotium oryzae* Catt). These two cultivars were not significantly different in reaction to aggregate sheath spot [caused by *Rhizoctonia oryzae sativae* (Saw.) Mordue]. Reaction of M-203 to other diseases that are not prevalent in California is unknown.

Brown rice kernels of M-203 are larger than those of M-202, averaging 24.9 mg per kernel, 6.7 mm long, and 3.0 mm wide compared to 23.8 mg, 6.1 and 2.8 mm for M-202, respectively. Milled kernels of M-203 are translucent. Grains of M-203 have light brown pericarp and white, nonaromatic endosperm. Results from the USDA National Rice Quality Laboratory at Beaumont, TX indicate that amylose makes up 190 g kg⁻¹ (19%) of the endosperm starch, which has a low gelatinization temperature as indicated by an alkali spreading score of 6.9. These values are typical of USA medium-grain cultivars (3). Taste panelists rated M-203 as satisfactory for the premium quality medium-grain market. Whole kernel (head) milling yield averaged across 13 harvest moistures was 540 g kg⁻¹ (54%). Total milling yield in the same tests was 677 g kg⁻¹ (67.7%).

M-203 was not compared with M-401 in field trials because of their differences in maturity. M-203 has averaged 14% lower yield than the high yielding cultivar M-202 in 14 replicated tests conducted in cooperation with the University of California in 1986 and 1987. These tests included current

early maturing cultivars and experimental entries at sites representative of the California rice growing areas. Average yield of M-203 was 9.3 Mg ha⁻¹ (8300 lb/acre⁻¹) of paddy (rough rice) at 120 g kg⁻¹ (12%) grain moisture compared to 10.6 Mg ha⁻¹ (9420 lb/acre⁻¹) for M-202. Average yields of M-203 and M-201 in 10 replicated trials were the same at 9.1 Mg ha⁻¹ (8090 lb/acre⁻¹). M-203, in three replicated trials at nine N fertility levels in 1987 gave maximum yields at 30 to 60 kg ha⁻¹ less N than required by current California early short- and medium-grain cultivars. This difference in response is probably related to the greater susceptibility of M-203 to lodging. M-203 is expected to be produced for current premium quality markets. M-203 will be a viable alternative to M-401 in years when the late maturing M-401 can not be seeded early. M-203 is not intended as a substitute for M-201 or M-202.

M-203 was released in 1988 jointly by the developer, California Agricultural Experiment Station, and USDA-ARS. It has been approved for certification by the California Crop Improvement Association.

Application is being made for protection of M-203 under Plant Variety Protection Act, Title V option. Classes of seed will be breeder, foundation, and registered and certified produced in California. Head-row seed will be produced as necessary to maintain cultivar purity. Breeder and foundation seed will be maintained by the California Co-operative Rice Research Foundation, Inc., P.O. Box 306, Biggs, CA 95917.

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REGISTRATION OF 'S-101' RICE

'S-101', rice (*Oryza sativa* L.), (Reg. no. 77) (PI 514277) is a very early maturing, semidwarf, short-grain cultivar developed by the California Co-operative Rice Research Foundation at the Rice Experiment Station, Biggs, CA. The Line S-101 was tested in the University of California Co-operative Extension state-wide tests with the experimental designation 85-Y-136. S-101 is a pure line selection from the cross, R-5621, made in the winter of 1978 to 1979. Its pedigree is 70-6526//R26/'Toyo-hikari'/3/'M7'/74-Y-89//SD7/73-221. The 70-6526 was a high yielding, short stature, chalky, short-grain selection from the cross 'Calady' male sterile//'Dee Geo Woo Gen'/'Colusa'. R-26 was a translucent, tall, medium-grain selection from the cross K8-C-263-12 (long-grain from Surinam)/Colusa. 74-Y-89 was a tall, short-grain selection from 'CS-M3'/Toyo-hikari. SD7 was a cold tolerant, glabrous, medium grain, semidwarf selection from CS-M3/'Calrose 76'. 73-221 was a very early, tall, cold tolerant, short-grain se-

lection from Colusa/'Kitaminori'. Colusa, CS-M3, Calrose, and Calrose 76 are obsolete cultivars that have been registered in *Crop Science*.

S-101 is a product of pedigree breeding. A winter nursery in Hawaii was used to accelerate generation advance. S-101 is photoperiod insensitive, heads about 7 d earlier than 'S-201' (1), and is ready to harvest 10 to 12 d earlier than S-201. The time from seeding to harvest of S-101 is similar to that of 'M-101' (2). Average mature plant height of S-101 is 82 cm, which is 8 cm shorter than S-201. S-101 is equal or superior to S-201 in resistance to lodging. S-101 has pubescent lemma, palea and leaf blades and moderately heavy awning. No plant parts of S-101 show anthocyanin pigmentation.

Panicles of S-101 normally are exerted completely from the leaf sheaths. The new cultivar has good seedling vigor similar to that of S-201. S-101 is similar to current California rice cultivars in tolerance to recommended rice herbicides. Reaction of S-101 to sterility caused by cool night temperatures 10 or 14 d before heading has been between that of S-201 and M-101. The earlier flowering of S-101 in contrast to S-201 also provides an added escape mechanism from the effect of cool temperatures that normally intensify as the season progresses. S-101, in 5 tests, was less susceptible than S-201 to stem rot (caused by *Sclerotium oryzae* Catt.) with respective average scores of 5.5 and 6.2 on a scale of 1 to 10. S-101 and S-201 are both moderately susceptible to aggregate sheath spot [caused by *Rhizoctonia oryzae-sativae* (Saw.) Mordue]. Reaction of S-101 to other diseases that are not prevalent in California is unknown.

Brown rice kernels of S-101 are lighter than those of S-201, averaging 21.7 mg per kernel, 5.5 mm long, and 3.1 mm wide compared to 25.0 mg, 5.4 and 3.2 mm for S-201, respectively. Milled kernels of S-101 are translucent in contrast to those of S-201, which have a pronounced white belly. Grains of S-101 have light brown pericarp and white, non-aromatic endosperm. Results from the USDA National Rice Quality Laboratory at Beaumont, TX indicate that apparent amylose makes up 180 g kg⁻¹ (18%) of the endosperm starch, which has a low gelatinization temperature as indicated by an alkali spreading score of 6.5. These values are typical of USA short-grain cultivars (3). Taste panelists rated S-101 as satisfactory. Whole kernel (head) milling yield of S-101 was superior to that of M-101, averaging 595 vs. 439 g kg⁻¹ for the latter in 12 tests representing a range of harvest moistures. Total milling yield was 12 g kg⁻¹ lower for S-101 than for M-101 in these tests.

S-101 has performed very well in replicated trials conducted at Biggs in 1985 in co-operation with the University of California Co-operative Extension in 1986 and 1987. These tests included current very early and early maturing cultivars and experimental entries at sites representative of the California rice growing areas. S-101 averaged 10.4 Mg ha⁻¹ (9250 lb acre⁻¹) of paddy (rough rice) at 120 g kg⁻¹ (12%) grain moisture compared to 9.9 Mg ha⁻¹ (8810 lb acre⁻¹) for the currently grown short-grain cultivar, S-201, in 16 tests. Average yield of S-101 in 19 tests was 10.3 Mg ha⁻¹ (9170 lb acre⁻¹) compared to 9.6 Mg ha⁻¹ (8550 lb acre⁻¹) for the very early, medium grain, M-101. In three replicated tests at nine N fertility levels S-101's response to N was similar to that of current early, short- and medium-grain cultivars S-201, M-201, and M-202. S-101 is adapted to the same areas as S-201 and it should replace S-201 because of its overall favorable performance and improved seed translucency.

Foundation seed of S-101 was made available to seed growers in 1987 with certification pending naming and release. It was officially released in 1988 jointly by the devel-