

M-102 as satisfactory. Whole kernel (head) milling yield of M-102 was superior to that of M-101, averaging 564 vs. 491 mg g⁻¹ for the latter. Total milling yield of M-102, however, was 43 mg g⁻¹ lower than that of M-101 in 1986 tests.

M-102 has performed very well in 18 replicated tests conducted in cooperation with the University of California Co-operative Extension. These tests included current very early and early maturing cultivars and experimental cultivars at sites in 1985 and 1986 representative of the California rice growing areas. M-102 averaged 10.8 Mg ha⁻¹ (9642 lb acre⁻¹) of paddy (rough rice) at 120 mg g⁻¹ (12%) moisture compared to 9.3 Mg ha⁻¹ for M-101 for an average yield increase of 16.4%. Average yield of M-102 in 14 tests was not significantly different from that of M-202. M-102 is expected to replace M-101 at early seeding dates in colder rice areas. Because M-102 has slightly more resistance to the stem rot fungus and better straw strength than M-202, it will be an alternative to M-202 in warmer areas where these factors can be important.

Foundation seed of M-102 was made available to seed growers in 1986 on a "certification pending continued good performance basis". It was officially released in 1987 jointly by the developer along with the California Agricultural Experiment Station and USDA-ARS. It has been approved for certification by the California Crop Improvement Association.

Application is not being made for plant variety protection of M-102. Classes of seed will be breeder, foundation, registered, and certified. 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, P.O. Box 306, Biggs, CA 95917.

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5. Director of plant breeding, plant breeders, and plant pathologist, California Co-operative 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 30 June 1987.

Published in *Crop Sci.* 27:1311-1312 (1987).

REGISTRATION OF 'ICSV 197' MIDGE RESISTANT SORGHUM CULTIVAR

'ICSV 197' a midge (*Contarinia sorghicola* Coq.) resistant sorghum [*Sorghum bicolor* (L.) Moench] (Reg. no. 125) (PI 509071) cultivar was developed by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru P.O., Andhra Pradesh 502 324, India.

ICSV 197 (ICRISAT Sorghum Variety 197 and ICRISAT Reg. no. 659) was selected as a midge resistant line by ICRISAT scientists at the University of Agricultural Sciences Experiment Station, Dharwad (Karnataka), India, during the 1983 rainy season. It was derived by pedigree selection from the cross IS 3443 × DJ 6514, bears the Selection no. 1-1, and was tested with ICRISAT Origin no. PM 11344. It can be classified to race Caudatum and subrace Zerazera.

Resistance of ICSV 197 to sorghum midge was confirmed under no-choice (cage test) conditions during the 1984 and

1985 rainy and post-rainy seasons at ICRISAT Center, and Dharwad. The line has shown a high level of stable resistance to midge across locations and seasons in India, West Africa, and Latin America during 1984 and 1985 (Table 1) (1).

ICSV 197 was also found to be less susceptible to anthracnose [*Colletotrichum graminicola* (Cesati) Wilson: damage rating 1 compared to 5 in the susceptible check IS 18442], rust (*Puccinia purpurea* Cooke: damage rating 2 compared to 3 in CSV 11), downy mildew [*Peronosclerospora sorghi* West and Uppal, pathotype unknown: 26% incidence compared to 70% in the susceptible check, DMS 652 (IS 18433)], and zonate leaf spot (*Gloeocercospora sorghi* Bain and Edgerton: damage rating 1 compared to 2 in IS 19442).

ICSV 197 has a tan plant color, medium thick and non-juicy stalk, drooping leaves with short and erect flag leaf, and medium maturity [110 to 125 days to maturity; All India Co-ordinated Sorghum Improvement Project (AICSIP), 1985]. ICSV 197 is a partially photoperiod sensitive cultivar.

Table 1. Performance of ICSV 197 for midge resistance under different midge infestation levels over locations and seasons.

Cultivar	Percent seed set									Damage rating†		
	Headcage conditions				Natural conditions				Mean	1984 ISMN‡	1984 MLMN¶	1985 MLMN#
	Patancheru		Dharwad		Patancheru 1984R	Dharwad 1984R	Burkina Faso					
1984R†	1984P	1984R	1985R	1985R			1985R	1985R	1985R			
ICSV 197	94	85	94	84	85	90	82	88	1.5	1.5	1.3	
Resistant check												
DJ 6514	91	92	91	83	79	64	99	86	1.9	1.5	1.3	
Susceptible check												
CSH 1	14	17	4	15	13	26	57	21	4.1	4.5	4.5	
Swarna	0	15	9	13	22	--	50	16	3.9	4.8	5.0	
SE	±0.9	±2.2	±1.0	±2.0	±3.5	±4.7	±5.0	--	--	--	--	
CV (%)	4	10	5	9	12	8	36	--	--	--	--	

† R = rainy season, P = post-rainy season.

‡ Damage rating: 1 = <10% damage, 2 = 11 to 25% damage, 3 = 26 to 40% damage, 4 = 41 to 60% damage, and 5 = >60% damage.

§ International Sorghum Midge Nursery (average damage rating across 10 locations — Dharwad, Navsari, Parbhani, ICRISAT Center, Kovilpatti, Tolichowki (India), Ghana, Sotuba (Mali), and El Salvador).

¶ Multilocation Midge Nursery (average damage rating across 4 locations — ICRISAT Center, Dharwad, Hisar, and Pantnagar).

Average damage rating across three locations (ICRISAT Center, Dharwad, and Hisar).

The panicle is semicompact at the base, loose and broad at the apex, and is distinctly clustered. Glumes are short, straw colored, and cover about one-fourth of the grain. The grain of ICSV 197 is bright, asymmetrical, without subcoat, and has a thin, colorless pericarp and a beak. Seed weight is 2 g/100 grain for this cultivar. ICSV 197 is tall (190 to 300 cm) and produces a fodder yield of about 11.0 t ha⁻¹. The grain yield performance of ICSV 197 was evaluated in 59 varietal yield trials across countries during 1984 and 1985. On the average, it yielded 3330 kg ha⁻¹ as compared to 3450 kg ha⁻¹ for 'CSV 11', a released sorghum cultivar in India, over years and locations (97% of CSV 11). Its yield potential is 50% higher than the resistant parent DJ 6514 (1).

Seeds of ICSV 197 will be maintained, and distributed by the Genetic Resources Unit of the International Crops Research Institute for the Semi-Arid Tropics, 502 324, India, and has been stored under quarantine conditions at the National Seed Storage Laboratory, Fort Collins, CO 80523.

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References and Notes

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2. Plant breeder (sorghum), Cereals Improvement Program, ICRISAT, Patancheru P.O., A.P. 502 324, India; entomologist, Cereals Improvement Program, Patancheru P.O., A.P. 502 324, India; and principal cereals entomologist, SADCC/ICRISAT Sorghum and Pearl Millet Improvement Program, P.O. Box 776, Bulawayo, Zimbabwe. ICRISAT Journal Article no. 659. Registration by the Crop Sci. Soc. of Am. Accepted 30 May 1987.

Published in *Crop Sci.* 27:1312-1313 (1987).

REGISTRATION OF 'PELLA 86' SOYBEAN

'PELLA 86' soybean [*Glycine max* (L.) Merr.] (Reg. no. 206) (PI 509044) was developed cooperatively by the Iowa Agriculture and Home Economics Experiment Station, the Ohio Agricultural Research and Development Center, and the Puerto Rico Agricultural Experiment Station. It was released in 1986 because of its resistance to several races of *Phytophthora* rot [caused by *Phytophthora megasperma* (Drechs.) f. sp. *glycinea* Kuan & Erwin] to which the cultivar 'Pella' is susceptible (1).

Pella 86 is a composite of BC₄F₃ plants from the backcross Pella⁵ × 'Williams 82'. Williams 82 was the source of the *Rps*₁^k allele for resistance to races 1 to 10, 13 to 15, 17, 18, 21, and 22 of *P. megasperma*. The backcrossing program was a cooperative effort of the institutions in Iowa, Ohio, and Puerto Rico. After testing in Iowa, the seeds of 31 selected BC₄F₃-derived lines were bulked to form Pella 86. The lines were homozygous for the *Rps*₁^k allele, uniform for agronomic characters, and similar in plant type and maturity to Pella. Pella 86 was tested for seed yield in the Uniform Soybean Tests, Northern States, during 1984 and 1985 under the designation AHW-Pella BC.

Pella 86 has purple flowers, tawny pubescence, tan pods at maturity, and dull yellow seeds with black hila. It is of Maturity Group III and best adapted to approximately 40 to 42° N lat. Pella 86 is similar to Pella for all agronomic and seed characteristics in the absence of *Phytophthora* rot, including seed yield, maturity, height, lodging resistance, seed weight, seed quality, seed protein and oil percentages, and shattering resistance. Both cultivars are moderately susceptible to Fe-deficiency chlorosis on calcareous soil.

Pella 86 is resistant to race 2 of frogeye leaf spot [caused by *Cercospora sojina* Hara]. It is moderately susceptible to purple stain [caused by *Cercospora kikuchii* (T. Matsu. & Tomoyasu) Chupp.] and downy mildew [caused by *Peronospora manshurica* (Naoum.) Syd. ex Gaum.]. Pella 86 is susceptible to brown stem rot [caused by *Phialophora gregata* (Allington and Chamberl.) W. Gams], soybean mosaic virus, and bacterial tan spot [caused by *Corynebacterium flaccum-faciens*].

Breeder seed of Pella 86 was distributed to foundation seed organizations in Illinois, Indiana, Iowa, Nebraska, and Ohio for planting in 1986. Breeder seed will be maintained by the Iowa Agriculture and Home Economics Experiment Station, Ames, IA.

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2. Professor, Dep. of Agronomy, Iowa State Univ.; former associate professor, Dep. of Agronomy, and professor, Dep. of Plant Pathology, Ohio State Univ., Wooster, OH 44691; and research associate, Dep. of Agronomy, Iowa State Univ., Ames, IA 50011. Joint contribution from the Iowa Agric. Home Economics Exp. Stn., Ames, IA, Project no. 2475, Journal Paper no. J-12590; the Ohio Agric. Res. and Development Ctr., Wooster, OH 44691; and the Puerto Rico Agric. Exp. Stn., Mayaguez, Puerto Rico 00708. The research was supported by a grant from the Iowa Soybean Promotion Board. Registration by the Crop Sci. Soc. of Am. Accepted 30 May 1987.

Published in *Crop Sci.* 27:1313 (1987).

REGISTRATION OF 'DF 485' DARK FIRE-CURED TOBACCO

'DF 485' (Reg. no. 96) (PI 509533) is the first black shank resistant cultivar of dark fire-cured tobacco (*Nicotiana tabacum* L.) that is also resistant to other tobacco diseases. It has medium resistance to race 0 and race 1 black shank, [caused by *Phytophthora parasitica* Dast. var. *nicotianae* (Breda de Haan) Tucker]; high resistance to black root rot [caused by *Thielaviopsis basicola* (Berk & Br) Ferr.]; high resistance to wildfire [caused by *Pseudomonas tabaci* (Wolf & Foster)]; and high resistance to tobacco mosaic virus (TMV). DF 485, developed by the Tennessee Agricultural Experiment Station, was released in 1985.

DF 485, which was tested as TXF 811, was derived from a cross between 'DF 300' and breeding line D70-981 (2,3). DF 300, which provided the black shank resistance present in DF 485, was developed from a cross between black shank resistant 'Florida 301' and the dark fire-cured 'Broadleaf Madole' (1). Resistance to black root rot, wildfire, and tobacco mosaic virus, which was derived from breeding line D70-981, originated from *N. debneyi*, *N. longiflora*, and *N. glutinosa*, respectively. Selections from the DF 300 × D70-981 cross were made on a single plant basis in black shank nurseries in the F₂ through F₇ generations and the progeny screened in a greenhouse for resistance to black root rot, wildfire, and TMV. Homozygous selections resistant to these diseases were bulked in the F₈ generation. Evaluations for disease resistance, yield, and quality were conducted in the F₆ through F₁₀ generations. DF 485 was in the F₁₁ generation at the time of release.

Leaves of DF 485 are approximately 4 cm longer than those of 'Certified Madole' or DF 300. The leaf width of DF 485 is approximately equal to that of DF 300 but is about