Registration of 'CP 85-1491' Sugarcane

'CP 85-1491' sugarcane (a complex hybrid of Saccharum spp.) (Reg. no. CV-98, PI 578051) was selected from progeny of the cross 'CP 75-1553' (1) × 'CP 72-2086' (2) made at Canal Point, FL, in December 1982. CP 85-1491 was developed through cooperative research by the USDA-ARS, the Institute of Food and Agricultural Sciences of the University of Florida, and the Florida Sugar Cane League, Inc., and was released to growers in Florida in the fall of 1992.

Stalks of CP 85-1491 are light green under the leaf sheaths, but turn reddish in areas exposed to sunlight. They have a heavy wax bloom and have medium diameter. Averaged over a three-crop cycle (plant cane and first and second ratoon), stalk weight was 1.33 kg, compared with 1.34 and 1.28 kg for the commercial checks 'CP 70-1133' (3) and 'CP 72-1210' (4), respectively.

Averaged over 21 replicated yield trials on muck soils (seven locations harvested in plant cane and first and second ratoon), the mean sugar content at early harvest (late October) was 3% higher than that of CP 70-1133 and CP 72-1210. Early harvest sugar yields (Mg ha⁻¹) were 6 and 32% higher than those of CP 70-1133 and CP 72-1210, respectively. CP 85-1491 cane yields at regular harvest dates (November–March), was 99% of CP 70-1133 and 29% higher than that of CP 72-1210. At regular harvest dates, its average sugar content (kg sugar Mg⁻¹ cane) was 4 and 5% higher than CP 70-1133 and CP 72-1210, respectively. Sugar yields for CP 85-1491 averaged 4 and 29% higher than those of CP 70-1133 and CP 72-1210, respectively. CP 85-1491 performed better than CP 70-1133 and CP 72-1210 as measured by the economic index (5) at harvest by 18 and 32%, respectively.

Averaged over six replicated yield trials on sand soils (two plant cane, two first ratoon, and two second ratoon), the mean cane yield for CP 85-1491 was 92% of that for CP 70-1133, but was 106% of that of CP 72-1210. Sugar yield at early harvest dates for CP 85-1491 was 97% of that of CP 70-1133, but was 117% of that of CP 72-1210. Sugar content at harvest was essentially equal for all three varieties. Sucrose yields for CP 85-1491 were 92% of those for CP 70-1133, but were 106% of those of CP 72-1210. Since all three cultivars had equal sugar content, the economic index was dependent on their relative cane yield.

CP 85-1491 has shown adequate resistance for commercial production in Florida to the sugarcane mosaic virus (Strain P. Syd.). CP 85-1491 has a millability rating of 0.998 and a fiber content of 10.40%, compared with 0.980 and 10.41% of CP 70-1133 and 0.965 and 10.22% for CP 72-1210. Seedcane of CP 85-1491 will be maintained by the USDA-ARS at the Sugarcane Field Station, Canal Point, FL.

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References and Notes


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Registration of 'Raven' Black Bean

'Raven' black bean (Phaseolus vulgaris L.) (Reg. no. CV-114, PI 578078) was developed and released cooperatively by the Michigan Agricultural Experiment Station and the USDA-ARS in 1994 as an upright, mid-season, disease-resistant cultivar.

Raven, tested as B90222, was derived from a cross made in 1986 between MSU breeding lines N84004/B85009. N84004 is a mid-season navy bean breeding line resistant to anthracnose [caused by Colletotrichum lindemuthianum (Sacc. & Magn.) Lams.-Scrib.]. B85009 is a full-season black bean breeding line with resistance to all known strains of bean common mosaic virus (BCMV). The cross was designed to incorporate earliness and anthracnose and virus resistance into black bean germplasm. The F₁ plants were advanced through the greenhouse and space-planted in an F₂ nursery in Saginaw, MI, in 1987. A single-plant F₂ selection was identified as possessing the desired agronomic and seed traits, and was advanced as an F₃ plant row in Isabela, PA. A single F₃ plant row was mass-selected in Michigan on the basis of upright architecture, bean rust resistance [caused by Uromyces appendiculatus (Pers.:Pers.) Unger], and seed traits. An F₅ row was grown in Puerto Rico. Single-plant selections were made for plant height, lodging resistance, and uniform maturity in the F₆ generation in Michigan. The F₅ selections were advanced in Puerto Rico while remnant seed was screened for anthracnose and BCMV resistance. A disease-resistant F₆ generation breeding line coded B90222 was entered in replicated yield trials in 1990.

Raven was extensively tested for yield and agronomic traits at 30 locations in Michigan over four seasons (1990–1993). Raven averaged 2450 kg ha⁻¹ and outyielded the early-season black bean cultivar UI-906 by 13%, but yielded 6 to 18% less when compared with full-season cultivars like Midnight and T-39.

Raven exhibits an upright Type II indeterminate growth habit, averaging 50 cm in height, combined with excellent resistance to lodging. Raven is a mid-season bean, maturing 92 d after planting (with a range in maturity from 87 to 93 d, depending on season and location). Raven matures 1 wk earlier than Midnight, and 5 d earlier than T-39. Raven has demonstrated uniform maturity and excellent dry-down across a broad range of environments and fits a unique niche for a mid-season black bean cultivar in Michigan.

Raven carries the single dominant hypersensitive I gene resistance to BCMV combined with the recessive bc-3 gene. This gene combination provides complete protection to all known strains of BCMV including the temperature-insensitive, necrosis-inducing strains FPC-M and N116 and NI-8, which cause the black root reaction in cultivars with the unprotected I gene. Presence of the Ibc-3 gene combination was confirmed using RAPD markers linked to both resistance genes (1,2). Raven is the first bean cultivar to exhibit complete resistance to BCMV worldwide. Raven carries the A gene for resistance to the alpha and alpha Brazil races of anthracnose. Raven carries the Ur-3 rust resistance gene and is highly

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