Registration of ‘Pecos’ Common Bean

The pinto bean (Phaseolus vulgaris L.) cultivar Pecos (Reg. no. CV-260, PI 641002) was developed by Agriculture and Agri-Food Canada (AAFC) Greenhouse and Processing Crops Research Centre (GPCRC), Harrow, ON. It was tested as HR99–2618 in registration tests in 1999 and 2000 and performance tests in 2001 through 2002 in the Ontario Cooperative Registration/Performance Colored Bean Cultivar Trials. It was supported for registration in 2001 by the Ontario Pulse Committee, for its good yield potential and especially for its semi-determinate growth habit and erect plant type as a pinto cultivar. Pecos was tested in Manitoba narrow row performance trials in 2000 and 2001 by AAFC Research Station at Morden, MB, and the results may be used as supplementary information. Pecos was registered (Registration no. 5983) by the Variety Registration Office, Canadian Food Inspection Agency, Ottawa, ON, Canada on 31 Aug. 2005.

Pecos is a selection from a cross between pinto lines C2048–59510 and ‘AC Burrito’, made in the fall of 1994 at GPCRC. C2048–59510 is a selection from the cross ‘Othello’/PN 44645 and ‘AC Burrito’, made in the fall of 1994 at GPCRC. ‘Othello’ was used for its earliness, wide and was used for its upright plant type with semi-determinate growth habit. AC Burrito was used for its earliness, wide adaptability, and good yield potential as an early pinto bean. The F1 hybrids were grown in the greenhouse in the spring of 1995. Bulk F2 and F3 populations were advanced in the field at Harrow in 1995 and 1996. In 1997 an F4 plant row, PN12736, was harvested in bulk for its upright plant type and high yield potential.

During yield testing, the main selection criteria were earliness, high yield potential, and upright plant type with acceptable seed and canning quality. Erect plants with semi-determinate growth habit (IIa) and no vine or very short vine type are needed for direct combine harvest in narrow row bean production on the Canadian Prairies, where pinto beans have been produced traditionally by pulling and windrowing before threshing. The line was tested in replicated yield trials at St. Thomas, ON, in 1998. The line PN12736 was tested as HR99–2618 for registration tests in 1999 and 2000 and performance tests in 2001 through 2002 in the Ontario Cooperative Registration/Performance Colored Bean Cultivar Trials at Ailsa Craig, Kippen, Woodstock, St. Thomas, Brussels, Elora, Exeter, and Thorndale, ON. It was supported for registration in 2001 by the Ontario Pulse Committee. Pecos was tested in Manitoba narrow row performance trials at Thorhill, Treherne, Arborg, Boissevain, and Biscarth in 2000 and 2001. HR99–2618 was purified by bulking about 100 plants from rows and stock seed was established at Harrow in 2001.

Pecos, at 2790 kg ha\(^{-1}\), yielded about 170 kg ha\(^{-1}\) more than the check ‘AC Ole’ in 11 cooperative cultivar trials in 1999 through 2002 in Ontario. Pecos is about 3 d earlier in maturity than AC Ole. It has slightly smaller seed mass than AC Ole, weighing 36.4 g 1000 seeds\(^{-1}\). Pecos is shorter and more resistant to lodging than AC Ole, which has indeterminate growth habit with long vine. Pecos has higher podding nodes on stems than the check and it is suited for direct combine harvest with reduced combine loss. It has similar canning quality to AC Ole. Pecos was tested in the Manitoba narrow trials at 5 sites each year during 2001 and 2002, where it yielded about 100 kg ha\(^{-1}\) more than the check cultivar ‘CDC Pin-

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Pecos was 8 d later maturing and 16 cm taller than the check, which is a short bush type with determinate growth habit. Pecos had good lodging resistance and pods borne high above the ground in the narrow row trials. Smaller seed mass at 39.3 g 1000 seeds\(^{-1}\).

Pecos is resistant to Bean common mosaic virus races a and d. It is susceptible to anthracnose [caused by Xanthomonas phaseoli Smith] and halo blight [caused by Pseudomonas syringae (Burkholder) Young et al.], similar to the check. It is tolerant to white mold [caused by Sclerotinia sclerotiorum (Lib.) de Bary] possibly due to its upright plant type. Pecos has a semi-determinate growth habit with no vines or no vines, upright plant and canopy. Pods are borne high above the ground. Seedlings have a light brown solid background, with white hilum, yellow hilum and a light brown solid background, with white hilum, yellow hilum beak curvature. Pods are oval with brown in a light brown solid background, with white hilum ring and shiny seed coat luster.

Breeder seed of Pecos is maintained at the Agriculture and Agri-Food Canada Greenhouse and Processing Crops Research Centre, Harrow, Ontario, Canada N0R 1G0. Limited quantities of seed are available from the corresponding author for the first 5 yr. Recipients are asked to make appropriate recognition of the source of germplasm if it is used to develop a new cultivar, germplasm, or parental line.

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References
