Registration of ‘UI 137’ Navy Bean

‘UI 137’ navy bean (*Phaseolus vulgaris* L.) (Reg. no. CV-134, PI 568237) was developed by the Idaho Agricultural Experiment Station at Kimberly, ID. UI 137 is a very high-yielding, upright, medium-early-maturing navy bean cultivar released in 1991.

UI 137 was selected in the F₃ by John Kolar at Kimberly in 1983 from the cross ‘Aurora’4*/’UI 61/’R 544/2/’Aurora’/’UI 76'/’3/’Bonus’*/’UI 76’ made in 1979. UI 137 was originally selected based on visual appearance of the growing plant and the mature seed. It is extremely densely podded, and this characteristic was noticeable in early stages of selection. UI 137 was tested under the experimental numbers 6137 and 51033.

UI 137 was grown in preliminary trials in 1985, and in advanced trials at Kimberly and Parma, ID, in 1986 through 1992. It was tested for 3 yr in the Cooperative Dry Bean Nursery at 16 locations in 1988, 16 locations in 1989, and 18 locations in 1990 (1,2,3). In 1988 and 1989, UI 137 had the highest average yields of all navy bean types included in the nurseries, and was similar to ‘Blackflower’ for the highest average yield in 1990 (however, UI 137 matured 3 d earlier than ‘Blackflower’ in that year). UI 137 appeared agronomically adapted to all regions of the USA and Canada.

UI 137 has a compact upright short vine (CIAT classification II A), with pods tightly clustered in the upper one-third of the plant. Because of its heavy seed set, UI 137 is more prone to lodging than some contemporary Type II navy bean cultivars. This may limit its production in the more humid regions of the USA and Canada, but should not be a limitation in irrigated production areas of the West. Unlike other navy bean cultivars, yields of UI 137 are determined in a way similar to that of medium-seed sized classes adapted to the Pacific Northwest. It achieves yield through high harvest index and high rate of seed fill. Most navy bean cultivars developed in the Midwest achieve yield through longer maturity, but slower seed fill rates.

UI 137 has oval, white, and slightly flat seed weighing 17.8 g 100 seed⁻¹. Canning tests were performed in 1989 by American Home Foods (Vacaville, CA), American Fine Foods (Payette, ID), and Cornell University, and by the Lethbridge Agriculture Canada Research Station (Lethbridge, AB) in 1990 and 1991 (4,5). UI 137 performed acceptably in the U.S. tests, but did not show the desired water uptake in the Canadian tests. It may be suitable for irrigation in semiarid areas.

Tests performed at the University of Idaho at Kimberly and the USDA-ARS at Prosser, WA, showed that UI 137 has a gene resistance to bean common mosaic virus (BCMV) and bean common mosaic virus necrosis virus (BCMNV) (6,7). UI 137 has immunity to the 10-15 and NL-4 strains of BCMV (Pathogenos 5 and 7, respectively), but develops systemic necrosis (black root) when inoculated with the BCMNV NL-5 strain. Resistance conferred by the I gene prevents seedborne transmission of the viruses, and provides immunity at growing temperatures below 30°C to all known BCMV strains. Black root will develop from BCMV infections above 30°C, and at any growing temperature with BCMNV. Plants with black root rapidly collapse and die, causing stand loss and yield reductions.

Bean curvy top virus (BCTV) symptoms were observed in field trials in Idaho; however, disease incidence was low and symptoms were mild, with plants capable of recovery and seed set.

UI 137 was evaluated for reaction to rust [caused by *Uromyces appendiculatus* (Pers. Pers.) Unger], white mold [caused by *Sclerotinia sclerotiorum* (Lib. de Bary)], and common blight [caused by *Xanthomonas campestris pv. phaseoli* (Smith) Dye] in tests performed at Scottsbluff and North Platte, NE, in conjunction with the 1988 to 1990 Cooperative Dry Bean Nurseries (1,2,3). UI 137 had low to intermediate ratings for white mold (probably due to architectural avoidance) and was moderately susceptible to common blight. UI 137 was also resistant to rust strains found in Nebraska.

When evaluated in the 1988 Uniform Dry Bean Rust Nursery, UI 137 was resistant to races of rust found in Saginaw, MI, but susceptible (with slow rusting) to races used at Beltville, MD.

Breeder and foundation seed are available from the Idaho Agricultural Experiment Station Foundation Seed Program, Kimberly Research and Extension Center, 3793 North 3600 East, Kimberly, ID 83341. U.S. plant variety protection (Title V option) for UI 137 is pending. The cultivar will be maintained as a public cultivar with a research tag fee assessed on the sale of foundation seed.

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References and Notes


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Registration ‘UI 228’ Small Red Bean

‘UI 228’ small red bean (*Phaseolus vulgaris* L.) (Reg. no. CV-135, PI 594322) was developed by the Idaho Agricultural Experiment Station at Kimberly, ID. It is an early maturing, semierect cultivar with excellent seed and canning quality. It fills a niche for an early-maturing red bean cultivar that can withstand late-season adverse weather conditions.

UI 228 was selected by John Kolar prior to 1979 from the cross of ‘AR 8-5’/’D-80’ made in 1970. AR 8-5 is a small red bean breeding line developed by the USDA-ARS dry bean breeding program at Prosser, WA, D-80, a great northern bean breeding line derived from a cross of ‘US 1140’ with ‘Sanilac’, was released by the Campbell Soup (Ontario, Canada) bean breeding program in 1972; it has excellent processing quality.

UI 228 has a type II A growth habit, but is semierec, with greater capacity to hold pods off the ground than other small red bean cultivars. Leaf size of this cultivar is more typical of large-leaf Andean cultivars than the smaller-leaf Mesoamerican cultivars.

UI 228 was tested under the experimental number KO 228 has been in advanced trials at Kimberly and Parma, ID, since 1991.