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number 9047432 was assigned by the National Plant Materials Center, Beltsville, MD. Seco was selected after four cycles of male-sterile facilitated recurrent selection from the population that was later released as Composite Cross 39. Seco was compared with 27 barley accessions in over fifty tests from 1982 to 1987, and was the best overall performer in vigor, height, root spread, and yield in dryland plantings in Arizona and California. It has been superior to 'Signal', 'Bold', 'Arivat', and 'Briggs' under reduced-water-use conditions in the hot, arid Southwest. Seco has performed well below 915 meters elevation in Arizona and California where annual precipitation averages 20 to 25 cm. It requires a minimum of 9 cm of winter moisture to produce adequate vegetation and a seed crop. Salt tolerance seems to be equivalent to that of other high salt-tolerant barley strains.

Seco is a robust, six-rowed, rough-awned, spring barley with erect culms 75 to 120 cm in length. Spikes are lax and nonwaxy. Lemmas are slightly wrinkled to semiwrinkled and have purple veins. Kernels predominantly have a white aleurone, occasionally blue, and have long hairs on the rachilla. The crown is 2.5 to 5 cm below the soil surface. Vertical root development extends beyond 2.5 m under favorable conditions, which provides excellent drought tolerance and ability to control erosion. Seco is recommended for planting as a winter cover crop, a green manure crop, or as a means of erosion control. It may also be useful as a feed source for wildlife or a means of weed control on disturbed land or abandoned cropland. Areas of possible adaptation are west Texas and southern portions of Arizona, New Mexico, and California. Limited tests indicate that Seco is adapted for use as a spring barley at elevations above 915 m. Recommended planting dates for southern Arizona and California are 25 November to 30 December. Seed maturity dates range from 15 April to 30 April. The recommended planting rate for dryland planting is 22 to 34 kg/ha. There are 22 000 to 24 000 seeds per kilogram.

Breeder seed is maintained by USDA-ARS, 2000 E. Allen Road, Tucson, AZ 85719. Foundation seed is maintained by the USDA-SCS Plant Materials Ctr. 3241 N. Romero Road, Tucson, AZ 85705.

R. T. RAMAGE (1)

Reference and Notes

1. Plant Sciences Dep., Univ. of Arizona, Tucson, AZ 85721. Registration by CSSA. Accepted 30 Aug. 1988.

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REGISTRATION OF 'Bill Z' PINTO BEAN

'BILL Z' (Reg. no. 78) (PI 522246) pinto bean (*Phaseolus vulgaris* L.) was developed by the Colorado Agricultural Experiment Station and released in 1987. The cultivar descended from a cross made in 1976 between 'Gloria', (a pink cultivar) and 3526, a pinto selection derived from A56-244 and 'UI 111'. The crossing protocol was as follows: A56-244-39/UI 111//A56-244-8 (3526)///Gloria. The two A56-244 selections were from a F_2 population (5958-B-1) provided by Dr. W.J. Zaumeyer, former Principal Pathologist, USDA-ARS. During testing the new cultivar was designated CO 81-13197.

Bill Z is characterized by a semivine growth habit (Type 3). Days to maturity during four years tested at Ft. Collins, CO averaged 96 d. In the same tests 'Olathe' and 'UI 114' required 97 d. Grams per 100 seeds were 36.4, 37.3, and 38.9 for Bill Z, Olathe, and UI 114 respectively. Bill Z was approximately 11% higher in yield than Olathe and UI 114 in the same trials. The new cultivar was resistant to Colorado races of bean rust [incited by *Uromyces phaseoli* (Reben.) Wint. Var. *typica* Arth.] except race 54 (1). Reaction in the 1984 USDA rust nursery showed that it was resistant to local races at Saginaw, MI; susceptible at Fargo, ND; moderately susceptible to resistant at North Platte, NE; and very susceptible to highly resistant with a slow rusting reaction at Beltsville, MD (2).

Bill Z carries recessive genes for resistance to the Type and the New York 15 strains of bean common mosaic virus.

Breeder seed is maintained by the Colorado Agricultural Experiment Station. Requests for seed should be addressed to the Foundation Seed Project, Department of Agronomy, Colorado State University, Fort Collins, CO 80523. Application for protection under Title 5 of the Plant Variety Protection Act has been made.

D. R. WOOD, M. BALLARIN, H. F. SCHWARTZ, M. A. BRICK,* AND C. H. PEARSON (3)

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REGISTRATION OF 'ICSV 145' *STRIGA ASIATICA* RESISTANT SORGHUM CULTIVAR

'ICSV 145', a witchweed (*Striga asiatica* L. Kuntze) resistant sorghum [*Sorghum bicolor* (L.) Moench] (Reg. no 128) (PI 522247) cultivar was developed by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru P.O. Andhra Pradesh 502 324, India. ICSV 145 (ICRISAT Sorghum Cultivar 145) has been specifically bred for resistance to the white flowered strain of *S. asiatica* that grows in India. ICSV 145 was released by the Central Seed Committee of Ministry of Agriculture, Government of India, as SAR 1 for cultivation in witchweed-endemic sorghum-growing areas, particularly in the states of Karnataka, Maharashtra, and Andhra Pradesh. ICSV 145 is a pure line selected from a single cross between IS 18475 (555), a low witchweed germination stimulant producer that is resistant to *S. asiatica*, and IS 18468 (168), a high-yielding adapted cultivar released in India as CSV 5. The succeeding segregating (F_2-F_6) generations of this cross were grown in witchweed-infested fields at Patancheru, Akola, Bijapur, and Bhavanisagar, India; and selected for single plant resistance to *S. asiatica* with desirable agronomic traits. The selection No. 1-1 expressed uniform witchweed resistance across locations and was named 'SAR 1' in 1981. It was tested through the three-stage procedure especially adapted to screen for resistance to *S. asiatica* (1).

Resistance of ICSV 145 to *S. asiatica* has been tested in witchweed-infested fields for over 5 yr (1982–1986) in multilocation trials (Table 1); as well as in farmer's fields to confirm the stability of its resistance to witchweed and to assess its grain yield potential in witchweed-endemic areas.

Table 1. Emerged *S. asiatica* plants m^{-2} under witchweed-infested field conditions in India.

	Location												
	Akola		Patancheru		Indore		Parbhani	Bijapur		Nandyal			
Cultivar	1982R†	1983R	1982R	1985R	1985R	1986R	1982R	1983P	1984P	1984P	1985P	1986P	Mean
ICSV 145	1.1	9.9	0.6	0.4	5.9	0.0	2.6	7.9	0.6	0.9	0.0	2.0	2.6
Resistant check													
N 13	2.5	0.8	0.1	0.8	1.3	4.1	0.0	0.0	3.8	0.7	0.5	0.0	2.1
Susceptible checks													
CSH 5	353.1	206.6	101.4	74.2	69.4	26.2	55.2	43.4	78.4	23.0	16.2	42.4	95.0
CSH 1	273.0	210.0	98.3	33.2	63.7	40.1	58.6	130.0	68.9	22.9	11.8	45.7	88.0
SE ±	±7.9	±10.4	±7.3	±18.9	±11.0	±13.8	±12.5	±10.4	±16.3	±7.8	±6.1	±27.8	–

† R = Rainy season, P = Postrainy season.

The cultivar supported an average of three emerged witchweed plants m^{-2} as compared to 2 for N 13 (the resistant control), 88 for CSH 1, and 95 for CSH 5 (the susceptible controls). ICSV 145 has produced an average grain yield of 2900 kg ha^{-1} as compared to 2200 kg ha^{-1} for N 13 and 2300 kg ha^{-1} for CSH 1 under witchweed-infested field conditions.

In India, ICSV 145 takes 63 to 65 d from germination to anthesis and matures in 105 to 110 d. The plants grow to a height of 1.8 to 2.4 m and remain erect until the grain reaches physiological maturity. ICSV 145 has a tan plant color, moderately juicy stalk, and leaves of medium size with dull green mid-rib. The panicle is semi-compact and well exserted. The glumes are creamy white, covering more than half the kernels, which are free threshing. ICSV 145 has round, medium size kernels (2.7 g 100^{-1}) of light creamy color. The pericarp is thin and lustrous. The grain contains about 10% protein and 3.25% lysine (100^{-1} g protein). Roti (unleavened bread) quality is acceptable and porridge is excellent. The cultivar can be classified as race durra-caudatum.

Seed of ICSV 145 will be maintained and distributed by the Genetic Resources Unit of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru P.O., Andhra Pradesh 502 324, India. An additional quantity of seed has been deposited under quarantine conditions at the National Seed Storage Laboratory, Fort Collins, CO 80523.

M. J. VASUDEVA RAO, P. K. VAIDYA,* V. L. CHIDLEY, S. Z. MUKURU, AND L. R. HOUSE (2)

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REGISTRATION OF 'THOMAS' SOYBEAN

'THOMAS' soybean [*Glycine max* (L.) Merr.] (Reg. no. 229) (PI 522236) was developed by the Georgia Agricultural Experiment Stations. It was cooperatively released by the Florida, Georgia, North Carolina, and South Carolina Agricultural Experiment Stations in March 1988 because of its multiple nematode resistance, resistance to stem canker, and high productivity.

Thomas was derived from an F_5 plant from the cross 'Centennial' (1) × F71-1138. The breeding line F71-1138 has the same parentage as 'Braxton' (2). The generations were advanced by a modified bulk method to the F_5 in Georgia and Puerto Rico. The line was tested in Georgia for disease resistance, agronomic performance, and seed yield from 1981 to 1987 under the designations Ga80-1413 and G80-1413. It was evaluated in the Uniform Soybean Tests, Southern States from 1983 to 1987 (2).

Thomas has a determinate growth habit, purple flowers, tawny pubescence, and tan pod walls. Seeds are yellow with shiny seed coats and black hila. It is of Maturity Group VII and matures 4 d later than 'Gordon' (3) and 1 d earlier than Braxton. Thomas is similar in plant height and lodging resistance to Braxton. It has averaged 5% higher in yield than Gordon or Braxton when grown in 90 environments in the southern USA. Seed quality, seed weight, and oil and protein composition of Thomas are similar to Braxton.

Thomas is resistant to the soybean cyst nematode races 1 and 3 (*Heterodera glycines* Ichinohe), the southern root-knot nematode [*Meloidogyne incognita* (Kofoid & White) Chitwood], and stem canker [caused by *Diaporthe phaseolorum* (Cke. & Ell.) Sacc. var. *caulivora* Athow & Caldwell] (2,4). It also has resistance to the foliar diseases, bacterial pustule [caused by *Xanthomonas campestris* pv. *phaseoli* (Smith) Dye] and powdery mildew (caused by *Microsphaera diffusa* Cke. & Pk.), but is susceptible to the peanut root-knot nematode [*M. arenaria* (Neal) Chitwood] (4).

Breeder seed of Thomas was distributed to foundation seed organizations in Florida, Georgia, North Carolina, and South Carolina in 1988. The Georgia Agricultural Experiment Stations will be responsible for the maintenance of breeder seed.

H. R. BOERMA,* R. S. HUSSEY, D. V. PHILLIPS, AND E. D. WOOD (5).

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