Registration of ‘Sanford’ Chickpea

‘Sanford’ (Reg. no. CV-145, PI 598078) is a large-seeded kabuli-type chickpea (*Cicer arietinum* L.) developed by the USDA-ARS in cooperation with the Washington Agricultural Research Center (Pullman, WA), the Idaho Agricultural Experiment Station (Moscow, ID), and the Oregon Agricultural Experiment Station (Corvallis, OR) and released in 1994. Sanford has good resistance to ascochyta blight [caused by *Ascochyta rabiei* (Pass.) Labrousse; syn. *Phoma rabiei* (Pass.) Khune & J.N. Kapoor], a disease that has devastated chickpea crops in the U.S. Pacific Northwest each year since the disease was discovered in 1983. The disease was especially severe in 1987, when more than 50% of the crop was destroyed. Sanford was evaluated for resistance to ascochyta blight and for yield and quality traits as experimental line CA188220. Sanford is a sister line to ‘Dwelley’.

Sanford originated as an F7 selection from a cross made in 1988 between a germplasm line, FLIP 85-58, and ‘Surutato-77’, a unifoliate cultivar developed in Mexico. The source of ascochyta blight resistance, FLIP 85-58, was provided by K.B. Singh, chickpea breeder at the International Center for Agricultural Research in the Dry Areas (ICARDA) located at Aleppo, Syria. Progenies from the cross were advanced to the F8 using the pedigree method with selection for seed size and color in each generation. Ascochyta blight resistance was assessed in the disease nursery established, using the technique described by Kaiser et al. (1), at the Washington State University Spillman Research Farm. Single plant rows in the F3, F5, and F7 were evaluated in 1989, 1990 and 1991, respectively. F8 seeds were harvested in bulk from resistant F7 single plant rows in the August of 1991 and planted at Yuma, AZ, in November 1991 for winter increase. Sanford was further increased in the spring and summer of 1992 at the Washington State University Spillman Research Farm and entered into uniform yield trials established at Pullman, WA, and Genesee, ID, in 1993 and at Pullman, Genesee, and Walla Walla, WA, in 1994.

In the absence of ascochyta blight, mean yields of Sanford compared favorably with the checks ‘UC-5’, ‘Surutato-77’, and ‘Tammam’ in 2 yr of yield testing. However, disease scores were significantly lower for Sanford in the ascochyta blight nursery compared with the standard checks. Scores in the blight nursery were similar to the resistant parent, FLIP 85-58, indicating that the genes for resistance had been transferred. In addition to ascochyta blight resistance, the selections were evaluated for resistance to fusarium wilt [caused by *Fusarium oxysporum* Schlechtend.:Fr. f. sp. *ciceris* (Padwick) Matuo & K. Sato] using four different isolates. Screening for resistance to wilt was conducted in pure culture using the cut-and-dip method as described for pea (*Pisum sativum* L.) by Kraft et al. (2). Sanford was resistant to all four of the isolates: two from California (California 85 and California 89) and two from Mexico (Isolates F and H).

Sanford has a unifoliate leaf structure that differs from the fern leaf structure that is typical of chickpea cultivars such as UC-5, ‘UC-27’, and ‘Spanish White’. Plants of Sanford are branched at the base and have an indeterminate flowering habit. Pods are rhomboid-ellipsoid and have glandular trichomes, which give them a domestic processors and by exporters.

References and Notes


3. F.J. Muehlbauer and W.J. Kaiser, USDA-ARS, Washington State University, Pullman, WA 99164-6434. Dwelley originated as an F7 selection from a cross made in 1988 between a germplasm line, FLIP 85-58, and ‘Spanish White’. Plants of Sanford are branched at the base and have an indeterminate flowering habit. Pods are rhomboid-ellipsoid and have glandular trichomes, which give them a domestic processors and by exporters.

Registration of ‘Dwelley’ Chickpea

‘Dwelley’ (Reg. no. CV-146, PI 598079) is a large-seeded kabuli-type chickpea (*Cicer arietinum* L.) developed by the USDA-ARS, Pullman, WA 99164-6434. Dwelley originated as an F7 selection from a cross made in 1988 between a germplasm line, FLIP 85-58, and ‘Spanish White’. Plants of Sanford are branched at the base and have an indeterminate flowering habit. Pods are rhomboid-ellipsoid and have glandular trichomes, which give them a domestic processors and by exporters.

Dwelley originated as an F7 selection from a cross made in 1988 between a germplasm line, FLIP 85-58, and ‘Spanish White’. Plants of Sanford are branched at the base and have an indeterminate flowering habit. Pods are rhomboid-ellipsoid and have glandular trichomes, which give them a domestic processors and by exporters.