Registration of ‘Melakh’ Cowpea

‘Melakh’ cowpea [Vigna unguiculata (L.) Walp.] (Reg. no. CV-140, PI 596353) was developed by the Institut Senegalais de Recherches Agricoles (ISRA) as part of a collaborative project with the University of California, Riverside, and was released by the government of Senegal in 1996. Melakh has resistance to cowpea aphid (Aphis craccivora Koch), cowpea aphid-borne mosaic potyvirus (CABMV), and bacterial blight [caused by Xanthomonas campestris pv. vignicola (Burkholder) Dye] and has early maturity. Melakh is adapted for dry grain and fresh southernpea production under rainfall conditions in the Sahelian Zone of northern Senegal, where the annual monomodal rainfall provides only 200 to 400 mm per growing season.

Melakh was derived from the cross IS86-292/IT83S-742-13, which was made in 1986 in Senegal. IS86-292 is an ISRA breeding line from the same cross as ‘Mouride’ (1) and has high yield potential and resistance to CABMV and bacterial blight. Breeding line IT83S-742-13 was developed by the International Institute of Tropical Agriculture in Nigeria, has resistance to the cowpea aphid, and is early maturing (2). Seedlings of F1 plants were shown to have resistance to the cowpea aphid using artificial infestation and were bulked. In the F2 generation, single plants were selected under natural field conditions that had no infestations of cowpea aphid and no symptoms of mosaic virus or bacterial blight. Artificial infestation and inoculation were used to select for resistance to cowpea aphid and CABMV in the F3 generation.

Seeds from a single F6 plant were bulked and introduced in yield trials in Senegal from 1989 through 1992 under the designation of B89-504. Tests were conducted at 4 experiment-station sites per year, and in 1991 and 1992 at 35 on-farm sites per year. Segregation for resistance to bacterial blight was observed, and single plants were selected and screened for resistance in the F9 and F10 generations using artificial inoculation. During the F11 generation, seedlings of bacterial blight-resistant lines were screened for resistance to cowpea aphid using artificial infestation. Seeds of resistant lines were bulked to form the final version of Melakh.

Melakh is semierect and belongs to the same maturity group as two early-maturing erect cultivars [Bambye 21 (B21) and California Blackeye No. 5 (CB5)] previously recommended for use in Senegal. Under well-watered conditions, Melakh reaches physiological maturity 64 d after sowing. Melakh has an indeterminate growth habit and a greater biomass production than either B21 or CB5, which are more determinate than Melakh when grown in Senegal. Melakh has consistently produced 30% more grain and forage than B21 or CB5 in multiregion yield trials in Senegal. Seeds of Melakh are white with a brown eye and are comparable in size (19 g 100 seed-1) to those of B21 (18 g 100 seed-1) and CB5 (20 g 100 seed-1). Melakh has resistance to the major strains of CABMV in Senegal and partial resistance to cowpea aphid and bacterial blight, whereas B21 and CB5 are susceptible to cowpea aphid and bacterial blight. In the summer of 1993, seeds of Melakh were prereleased and distributed to about 1000 farmers in 300 villages.

Registration of ‘TAM 110’ Wheat

‘TAM 110’ (Reg. no. CV-851, PI 595757) is an early-maturing, short-statured, awned, brown chaff, semidwarf hard red winter wheat [Triticum aestivum L.] developed by the Texas Agriculture Experiment Station (TAES) and released in 1996.

TAM 110 was evaluated as TXGH12588-105, a hybrid ‘TAM 105’ (‘Amigo’) × ‘Largo’. TAM 110 was developed and released by the TAES, an F2 hybrid of TAM 105 × ‘Scout’ (1). The short wheat used in the cross included many experimental short-statured wheats. Amigo, a Biotype C greenbug (Schizaphis graminum (Rob.)) [plasm line containing a translocated chromosome (2)] from a cross of Trigo tauschii (Rondani) × Triticum aestivum L.) developed by the Texas Agriculture Experiment Station (TAES) and released in 1996.

At each generation, selection was practiced by screening seedlings for resistance to Biotype-E greenbug. Plants that did not segregate for resistance in the F4 generation were kept. In the F4 generation, one parent was always resistant, and the other plants were grown in the greenhouse at Bushland in 1984, and seeds were collected from each plant. One of these, designated TXGH12588-105, was then crossed with TAM 105 × ‘Scout’ (1). The cross to Largo and backcross to TAM 110 greenhouse at Bushland during 1980 to 1982.

References and Notes
