Registration of Germplasms

REGISTRATION OF NEBSEOY SOYBEANS
(Reg. No. 138)

J. H. Williams, J. E. Specht, A. F. Dreier, R. S. Moonaw, and L. V. Swee

'Nebsoy' soybeans (Glycine max (L.) Merr.) originated as an F2 plant selection from a cross of two F1 lines from a 'Kent' x ('Blackhawk' x 'Harosoy') cross in the cooperative program of the Nebraska Agric. Exp. Stn. and AR-SEA-USDA. The cross and the generation advance to the F2 by single seed descent were made at the Purdue Agric. Exp. Stn. Selection for resistance to phytophthora root rot caused by Phytophthora megasperma Drec. var. sojae A. Hildebrand and brown stem rot [caused by Phyllophora gregata (Allington and Chamberl.) W. Gami.].

Breeder seed of 'Nebsoy' was distributed to foundation seed organizations in Iowa, Michigan, Minnesota, and South Dakota for planting in 1979. Breeder seed will be maintained by the Iowa Agric. and Home Economics Exp. Stn.

REGISTRATION OF BARLEY COMPOSITE CROSS XXXIV
(Reg. No. GP 33)

D. A. Reid, L. A. J. Slootmaker, O. Stålen, and J. C. Craddock

BARLEY (Hordeum vulgare L.) Composite Cross XXXIV was developed and released by AR-SEA-USDA and the Arizona Agric. Exp. Stn. to provide a diverse gene pool made up of segregates from all known available lines tolerant to aluminum and/or acid soils. Female parents of the cross were genetic male-sterile segregates from the six cultivars with Al tolerance among all of the male-sterile stocks available (2). These male steriles were from four winter cultivars, 'Dayton' (CI 9517), 'Smooth Awn 86' (CI 6298), 'Colonial 2' (CI 8065), and 'Kirma 8' (CI 10298), and two spring cultivars, 'Hoodless Beardless' (CI 1800) and 'Breun's Wise' (CI 10084).

Slootmaker and Reid (unpublished data) tested all of the 1,795 winter and facultative winter barley lines in the USDA World Collection for response to acid soil at Wageningen, The Netherlands, and for response to Al in nutrient solution at Beltsville, Maryland, by methods previously described (7, 5). About 180 lines were tolerant in both tests, with 85% agreement between the two methods. These 180 lines were the principal source of male parents. Additional tolerant lines (both winter and spring types), reported by workers from The Netherlands (1), Canada (4), Denmark (8), and Japan (3), were also used as male parents. A list of these parents and additional information can be obtained from the authors.

Closes between the male-sterile segregates and pollinators with Al-acid-soil tolerance were made under irrigation at Tucson, Arizona, in 1976. This location provides sufficient vernalization for winter barley to head, but the less hardy types and spring barleys easily survive the winter. The long growing season and abundant tillering permitted us to cross winter and spring lines. We attempted to cross each of the 220 male parents onto 3 different male-sterile female lines, and we succeeded in 840 of the possible 660 crosses. Seed from each cross was increased individually in 1977, and nearly equal numbers of seed from each cross were bulked and planted in the fall of 1977.

This population will segregate for the following traits: male sterility and male fertility; 2- and 6-rowed spikes; rust and naked