Registration of Crop Cultivars

REGISTRATION OF BROOKS, HALL, AND MILLS GUAR
(Reg. No. 1 to 3)

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'Brooks' guar [Cyamopsis tetragonoloba (L.) Taub] (Reg. no. 1) originated as a single plant selection from a commercial field of 'Groehler' guar at Iowa Park, Texas, in 1959. The original plant was assumed to have been an advanced generation progeny of a natural cross between Groehler and 'S44-1.' Groehler is a medium-tall, basal branching pubescent variety, highly susceptible to the major guar diseases, bacterial blight (Xanthomonas cyamopsis Patil, Dhande and Kulkarni) and Alternaria leaf spot [Alternaria cucumerina (Ell. and Ev. Elliott var. cyamopsis] (Rangaswami and Rao) Simmons). S44-1 is a tall, late-maturing, branching, glabrous selection with resistance to the major guar diseases. Three plants arising from progeny of the natural cross, Groehler × S44-1, were selected at College Station, Texas and placed in yield trials. These were identified as Groehler 1-1, Groehler 1-2, and Groehler 1-3.

Before its release, Brooks was tested under the number Groehler 1-2. Brooks has glabrous leaves, stems, and pods. Plants are medium in height (about 80-90 cm) and relatively fine-stemmed, and they possess the fine-branching growth habit. Small racemes bearing medium-sized pods are well distributed on the main stem and lateral branches. Pods generally contain from 6 to 9 seed. Seed are dull white to light gray and average 3.0 g/100 seed.

In 11 tests at seven locations in Texas and Oklahoma (1962-1963), Brooks produced average seed yields 43.2% higher than those from the commercial varieties, 'Texsel' and Groehler. Much of the yield superiority of Brooks was due to its superior disease resistance. In years of normal rainfall, Texsel and Groehler were often damaged by Alternaria leaf spot and bacterial blight. In Texas in 1964, when seedborne inoculum was present and weather conditions were favorable for development of bacterial blight, large hectarages of susceptible varieties were destroyed by this disease. Under similar conditions, fields planted to Brooks were not damaged. In addition to its yield advantage under normal rainfall conditions, Brooks also yields well in dry seasons. A portion of the yield advantage of Brooks is due to its fine-branching growth habit. Fine-branching types set a higher percentage of their racemes above the harvester cutter-bar level than do single-stemmed varieties. Brooks is well adapted to the guar growing areas of Texas and Oklahoma and currently is grown on an estimated 95 to 98% of the total guar hectarage.

Brooks was developed cooperatively by the ARS-USDA and the Texas and Oklahoma Agric. Exp. Stns. It was released in 1964. Breeder and foundation seed are maintained by the Texas Agric. Exp. Stn., College Station, TX 77843.

'Hall' guar (Reg. No. 2) was developed cooperatively by the ARS-USDA and the Texas and Oklahoma Agric. Exp. Stns. It was released in 1964. Breeder and foundation seed are maintained by the Texas Agric. Exp. Stn., College Station, TX 77843.

Mills is well adapted to the guar-growing areas of Texas and currently is grown on an estimated 95 to 98% of the total guar hectarage.

Before its release, Mills was tested under the number PI 179930-5-1. Hall produced average seed yields 102% higher than those of disease-susceptible varieties, Texsel and Groehler, in 12 yield tests in which all varieties could be growing 1963 through 1965. Much of the yield superiority was due to its superior disease resistance. Hall was developed as a high yielding, disease-resistant, full-season variety. Hall generally performs better than any other cultivar of either Brooks or Hall. Mills greatest utility has been its resistance to the major guar diseases, bacterial blight and Alternaria leaf spot. Hall probably contains different alleles from Brooks and 'Mills' for resistance.

Before its release, Mills was tested under the number PI 263875-6. Mills produced average seed yields 78% higher than those of disease-susceptible varieties, Texsel and Groehler, in 12 yield tests in which all varieties could be growing 1963 through 1965. Disease resistance was most of this yield superiority. Mills possesses bacterial blight different from that of Brooks and Hall, but the pathogen weakly moves down the petiole into the main stem. Mills is resistant to bacterial blight and Alternaria leaf spot. Mills has pubescent leaves, stems, and pods. Plants are short in stature (about 65-75 cm) and possess the fine-branching growth habit. Mills is an early-maturing variety, especially adapted to those conditions in which weather or double-cropping make late planting is resistant to bacterial blight and Alternaria major diseases of guar. Small racemes contain large pods are well distributed on the main stems and branches of the plants. Seed are large, averaging 3.0 g/100 seed.

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