Registration of Crop Cultivars

REGISTRATION OF PEA BEAN
NW-395 (Reg. No. 33) 1

D. W. Burke 2

‘NW-395’ pea bean (Phaseolus vulgaris L.) was developed cooperatively by ARS-USDA and the Washington State Univ. at the Irrigated Agriculture Research and Extension Center, Prosser, Washington. It was tested inter-regionally as 6R-395 and W-395 from 1976 to 1979. In February 1980, NW-395 was released jointly by ARS-USDA and the Agricultural Experiment Stations of Washington State Univ., the Univ. of Idaho, and Oregon State Univ.

NW-395 is an F7 selection from the cross, ‘Miluno,’ a small white-seeded bean obtained from Chile and t-1-2204, a curly top and mosaic-resistant breeding line. Because of its short vine type, NW-395 is best adapted for western production under irrigation, a more upright bush type being preferred for areas of higher rainfall.

NW-395 is similar in canning quality to popular pea bean (navy) cultivars. Its seed is similar in average size to that of ‘Sanilac’ but somewhat more variable.

NW-395 is the first pea bean cultivar with a high level of resistance to the curly top virus, which is a serious disease in the northwest. NW-395 carries the dominant ‘I’ gene for hypersensitive resistance to all known strains of the bean common mosaic virus. NW-395 is the earliest-maturing cultivar (about 90 days) of its class in most locations. Seed yields of NW-395 are comparable to other small white beans grown in Washington and Idaho, in the absence of curly top. Where curly top affects the yields of other cultivars, NW-395 has been outstanding.

Breeder and foundation seed of NW-395 is maintained by the Washington State Crop Improvement Association, Inc., 513 N. Front Street, Yakima, WA 98901, and by the Idaho Crop Improvement Association, Inc., P. O. Box 2601, Boise, ID 83705.


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establishment vigor, resistance to aphis-virus mosaic, quality, and high forage and seed yield. Selection for establishment vigor was conducted through four cycles on the ability to emerge from a 7.5-cm depth. Procedures outlined previously.2 Selection was based on drought tolerance, disease resistance, and flowering response. NW-395 was carried out under semiarid field conditions, Saskatchewan. On at least two occasions, there was no effective rainfall for the remainder of the growing season, so no regrowth occurred in those years. The 20 plants which were later selected survived to spring and developed normally in the fall, attesting to their excellent drought tolerance and yield potential.

The 20 clones included in Clarke trace their ancestry to eight cycles of selection. One traces back to an early introduction from Fort Collins, Colorado; one to an introduction from the Moscow Botanical Garden, U.S.S.R.; 5 to Sc 1621, received from Dr. K.I. Shubin, Research Station, Saskatoon, as S-2275 in 1960; 1 to Sc 1623, also received from Dr. K.I. Shubin in 1962.

Clarke is well adapted for hay and pasture use on sand or under irrigation in the Canadian Prairies. It outyield bromegrass and reed canary grass on tile well-drained irrigated land and will equal or outyield bromegrass under drouth conditions. At the same time it possesses the potential and vigor to outyield both crested wheatgrass and reed canary grass in favorably moist years on dryland. Intermediate growth habits are competitive with alfalfa than bromegrass or reed canary grass, and maintains a more desirable grass-alalfa balance.

There are no visual characters that distinguish Clarke from other cultivars of intermediate wheatgrass. Important attributes are drouth tolerance, winterhardiness, and a high forage yield. Clarke was compared with Chief and Greenleaf, two popular Canadian cultivars of the intermediate wheatgrass group. Cooperative tests were established at Beaverlodge, Alberta; Indian Head, Melfort and Swift Current, Saskatchewan, and Brandon, Manitoba. The dry matter yields of Clarke equalled that of Chief and was 7% higher than Greenleaf. Clarke yielded 28% more seed than Chief and 45% more than Greenleaf. A more detailed description of Clarke’s performance has been published.4

Seed of Clarke is being multiplied through Breeder and Foundation seed classes. Breeder seed is being maintained by the Research Station, Agriculture Canada, Swift Current, Saskatchewan. The multiplication and distribution of Foundation and Certified seed classes is by SeCan Association Canada, Swift Current, Saskatchewan S9H 3X2.
