Regulation of Crop Cultivars

REGISTRATION OF C-20 NAVY BEAN

'C-20' NAVY BEAN (Phaseolus vulgaris L.) (Reg. no. 43) was developed and released cooperatively by the Michigan Agricultural Experiment Station and USDA-ARS in 1982, as an upright, full season navy bean cultivar.

C-20 originated from the three-way cross 'JAMAPA'/'NEP-2'/75130-E2-B (W-20'/KENTWOOD') made in 1976. The cross was coded 76706 and was advanced to the F2 generation using single seed descent; breeding line 76706-D6 was selected as a single F3 row in Ohio, and reselected as a single F5-row in Sinaloa, Mexico. This selection work was performed by J.D. Kelly, formerly of the Campbell Institute for Agricultural Research, Napoleon, Ohio. In 1980, 76706-D6-B was unconditionally released to the Michigan Agricultural Experiment Station by Campbell Soup Company as an F4-generation navy bean breeding line coded C-20.

C-20 exhibits a type II, upright short vine plant habit; plants average 50 cm tall, about 15 cm taller than 'Sea-farer', are erect, narrow in profile with few basal branches. The modified plant architectural characters of C-20 are based upon breeding for the ideotype concept proposed by Adams (1). C-20 requires a full season to reach maturity, usually 98 to 104 days and has exceeded yields of the standard 'Sanilac', Sea-farer, and 'Fleetwood' navy bean cultivars by 22 to 33% over 4 years and 16 locations in Michigan. Similar high yielding performance has been recorded in North Dakota, New York, and Ontario.

C-20 carries the single dominant I-gene form of resistance to all strains of bean common mosaic virus (BCMV), is resistant to the beta, gamma, and delta races of anthracnose caused by Colletotrichum lindemuthianum (Sacc. & Magn.) Scrib.; is essentially immune to the indigenous rust [incited by Uromyces phaseoli (Burk.) Snyd. and Hans.], and to root rot caused by Sclerotinia sclerotiorum (Lib.) de Bary, and to root rot incited by Fusarium solani (Fr.) Appel and Wr. f. sp. phaseoli (Burk.) Snyd. and Hans.

C-20 has an ovoid white seed averaging 19.2 g/100 seeds and is within the acceptable range of 17.5 to 20.5 g/100 seeds characteristic of standard navy bean cultivars. Dry seed color as measured by a Hunter Lab color and color difference meter (4) was 62.7 on the L-scale and is within the acceptance range of 61.4 to 63.4 exhibited by standard navy bean cultivars. Dry seed weight measured with a Kramer seed shear press was 45 kg force/100 g cooked beans. These values are similar to those of the standard navy cultivars tested simultaneously.

Variety protection has been applied for under the Plant Variety Protection Act, Public Law 91-577, with the option that C-20 may be sold for seed by name only under the Certified class. Breeder seed is maintained by the Michigan Agric. Exp. Stn., East Lansing, MI 48824, in cooperation with the Michigan Foundation Seed Assoc.

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References and Notes


REGISTRATION OF MIDNIGHT

KENTUCKY BLUEGRASS

'MIDNIGHT' Kentucky bluegrass (Poa pratensis L.) (Reg. no. 26) was developed by Pure-Seed Testing, Inc. of Hubbard, Oregon, using germplasm obtained from the New Jersey Agricultural Experiment Station. Midnight originated as a single, highly apomictic, aberrant plant selected from the open-pollinated progeny of F64-603, a selection made from an old lawn located near the Natural History Museum in Washington, D.C. in 1963. Midnight was released by Turf-Seed, Inc. with the first certified seed produced in western Oregon in 1981. P1528T was the experimental designation of Midnight.

Midnight is a persistent, low growing, turf-type cultivar with the ability to produce a compact, dense turf with medium fine texture, a slow leaf extension rate, and a very dark green color. It has very good heat and cold tolerance, fair shade adaptation, a slow spring greenup rate, and moderate fall low temperature color retention. Midnight possesses good establishment vigor, good mowing qualities, good tolerance of close mowing and a moderate nitrogen fertility requirement. This cultivar shows good resistance to the leaf spot and crown rot disease caused by Drechslera poae (Baudys) Shoem., stripe smut incited by Ustilago striiformis (Westend.) Niel., and dollar spot caused by Sclerotinia homoeocarpa F.T. Bennett.

Midnight is recommended for use in either full sun or light shade for lawns, parks, or sports turf in regions where Kentucky bluegrass is well adapted. It is compatible in blends with other dark green, low growing bluegrasses and in mixtures with the strong creeping red fescues (Festuca rubra L. subsp. rubra), the hard fescues (F. longifolia Thuill.), and the improved, turf-type perennial ryegrasses (Lolium perenne L.). Seed propagation is restricted to two generations of increase from breeder seed, one generation each of foundation and certified. Breeder seed is maintained by Pure-Seed Testing Inc., P. O. Box 449, Hubbard, OR.

822