REGISTRATION OF ‘BONILLA’ BIG BLUESTEM

‘Bonilla’ big bluestem (Andropogon gerardii Vitman) (Reg. no. 7) (PI 315658) was collected by the USDA-SCS, Plant Materials Center, Bismarck, ND, and was further developed and evaluated in cooperation with the USDA-ARS, Mandan, ND. Bonilla was tested as SD-27 and jointly released in March 1987 by USDA-SCS, USDA-ARS, and the North Dakota, South Dakota, and Minnesota Agricultural Experiment Stations.

Bonilla originated from seed collected in 1961 from native stands at two sites near Bonilla, SD, in Beadle County. Initial evaluation studies conducted from 1963 to 1967 at the Bismarck Plant Materials Center indicated that Bonilla had high seed and forage yields and high winter survival relative to other accessions. Using seed from an initial field increase of the original collection, advanced evaluation studies and large scale field plantings located throughout North Dakota, South Dakota, and Minnesota indicated that Bonilla is well adapted to the Northern Great Plains of the USA. In 1977, random individual plants were removed from the increase field and transplanted to ARS research fields at Mandan. Plants were evaluated for many morphological characteristics and off-type plants were rogued from the nursery. About 800 plants remained and these comprise the breeder seed block of Bonilla.

Chromosome number of Bonilla is 2n = 6x = 60.

Bonilla was released because of its early maturity and superior winter hardiness that extends the latitudinal range of big bluestem farther north than with presently available cultivars. Bonilla has demonstrated good seed yield potential and excellent persistence. Forage production exceeds that of the northern seed source, NDG-4, and is equal to ’Champ’ and ’Kaw’ when grown at northern sites within the area of adaptation for big bluestem. Cultivars from southern sources (Champ, ’Pawnee’, and ’Kaw’) initially produce more forage, but yields decline over time at northern sites. In grazing trials with cattle (Bos taurus) at Morris, MN, Bonilla had forage quality characteristics similar to Pawnee and tended to be higher in season-long, average daily gains over 3 yr because grazing could be initiated earlier (D.D. Warnes, 1986, personal communication).

Flowering date (anthesis) for big bluestem has a northwest to southeast gradient in the Northern Great Plains. Phenology evaluations at Fergus Falls, MN, indicated that Bonilla was 14 to 25 d later in maturity than the northern source NDG-4, but 13 to 23 d earlier than SD-43, and 14 to 33 d earlier than Champ, Pawnee, and Kaw.

The primary area of use of Bonilla is on sites where big bluestem is recommended for range and pasture seedings, wildlife habitat, and natural area development, revegetation of surface mined land, erosion control structures, and transportation corridors in North Dakota, South Dakota, and Minnesota.

Breeder seed of Bonilla big bluestem will be maintained at the USDA-ARS, Northern Great Plains Research Laboratory, Mandan, ND 58554. Foundation and certified generation of seed increase beyond breeder seed are authorized. Foundation seed will be available from the USDA-SCS, Plant Materials Center, Bismarck, ND 58502.

R. E. Barker,* R. J. Haas, E. T. Jacobson, and J. D. Berdahl (1)

References and Notes


REGISTRATION OF ‘WW-IRON MASTER’ OLD WORLD BLUESTEM

‘WW-Iron Master’ Old World bluestem [(Bothriochloa ischaemum (L.) Keng. var. ischaemum (Hack) Celarier and Harlan] (Reg. no. 8) was released jointly by USDA-ARS and USDA-SCS in June 1987. It was received as PI 301535 from the USDA-ARS Southern Regional Plant Introduction Station by the USDA-ARS, Southern Plains Range Research Station in Woodward, OK, in 1976 as part of Regional Project S-9. It was evaluated regionally under the Woodward designation WW-535.

WW-Iron Master Old World bluestem is a perennial tufted bunchgrass with an upright growth habit. It has dark green foliage with basal and cauline leaves, 3 to 6 mm wide and 20 to 30 cm long at maturity. Foliage height ranges from 0.5 to 0.75 m with seed stalks reaching lengths of 1 to 1.5 m. Stems are yellowish with brown-purple glabrous nodes. Compared to other Old World bluestem cultivars, WW-Iron Master is later in maturity, has more and larger cauline leaves and a darker green leaf blade color than ‘WW-Spar’, and is more robust and has a higher leaf-to-stem ratio than ‘Ganada’. WW-Iron Master has an indeterminant flowering habit, and seed maturation is more clearly defined than that from ‘Plains’. Seedlings of WW-Iron Master are extremely uniform in all characteristics and no degree of sexual reproduction has been observed.

WW-Iron Master has persisted well with good spring vigor at Manhattan and Mound Valley, KS; Simpson, IL; Cimarron County and Woodward, OK; Springfield, CO; Knox City and Justisberg, TX; Coffeefield, MS; and Americas, GA. WW-Iron Master is very Fe efficient and produces more forage with less chlorosis than presently released cultivars of Old World bluestems when grown on Fe deficient soils (1). Its basal spread is greater than that of ’Caucasian’ and WW-Spar Old World bluestem, making it more desirable for soil conservation on erodible lands (2).

In clipping trials at Woodward, OK, forage production of WW-Iron Master was similar to Plains during 1979 to 1981 and was greater than Canada Old World bluestem during 1982 to 1984. It had the highest crude protein content and the highest average in vitro digestibility compared with WW-Spar, Plains, and Caucasian Old World bluestem in the 1979 to 1981 trials at Woodward, OK (3).

WW-Iron Master is a valuable grass for beef (Bos taurus) production when used in improved pasture or rangeland plantings. It is also useful for soil stabilization and wildlife cover on Fe deficient and erodible marginal farmlands.

WW-Iron Master has been approved by the National Grass Variety Review Board as eligible for certification. Breeder seed will be maintained and a list of registered seed producers can be obtained from the Southern Plains Range Research Station, 2000 18th Street, Woodward, OK 73801.

C. L. Dewald,* P. L. Sims, W. A. Berg, and L. M. White (4)

References and Notes