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 USDA-SCS, Bismarck, ND 58502. Foundation seed will be available from the USDA-SCS, Plant Materials Center, Bismarck, ND 58502. Foundation and certified genetic materials can be obtained from the Southern Plains Range Research Station, 2000 18th Street, Woodward, OK 73801.

REGISTRATION OF 'WW-IRON MASTER' OLD WORLD BLUESTEM

'WW-IRON MASTER' Old World bluestem (Bothriochloa ischaemum (L.) Keng. var. ischaemum (Hack.) Harlan] (Reg. no. 8) was released jointly by USDA-SCS in June 1987. It was received as NDG-4, and is equal to 'Champ' from the USDA-ARS Southern Regional Plant Introduction by the USDA-ARS, Southern Plains Range Research Station in Woodward, OK, in 1976 as part of a project S-9. It was evaluated regionally under the designation WW-535.

WW-IRON Master Old World bluestem is a bunchgrass with an upright growth habit, it has tillers with basal and cauline leaves, 3 to 6 mm wide and 20 to 30 cm long at maturity. Foliage height is about 0.75 m with seed stalks reaching lengths of 1 to 1.5 m. Stems are yellowish with brown-purple glaucous tips. Compared to other Old World bluestem cultivars, WW-MASTER is later in maturity, has more and larger cauline leaves and a darker green leaf blade color than 'WW-Plains'. WW-IRON Master has an indeterminate flowering habit, and seed maturation is more clearly defined than 'WW-Plains'. Seedlings of WW-IRON Master are uniform in all characteristics and no degree of sexual reproduction has been observed.

WW-IRON Master has persisted well with good herbage at Manhattan and Mound Valley, KS; Sumter and Marion County and Woodward, OK; Springfield, CO; Coffeyville, KS; and Amarillo, TX; Coffeyville, KS; and WW-IRON Master is very Fe efficient and produces more forage with less chlorosis than presently released Old World bluestems when grown on Fe deficient soils (1). Its basal spread is greater than that of 'WW-Iron Spar Old World bluestem, making it more suitable for soil conservation and erosion control 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 and the highest average in vitro digestibility compared to WW-Iron Spar, Plains, and Caucasian Old World bluestem and in 1982 to 1984 trials at Woodward, OK (3).

WW-IRON Master is a valuable grass for beef production when used in improved pasture or rangeland plantings. It is also useful for soil stabilization, cover on Fe deficient and eroded marginal farmlands, and for wildlife habitat, and natural area development, revegetation of surface mined land, erosion control structures, and transportation corridors in North Dakota, South Dakota, and Minnesota.