

NEW MEXICO STATE UNIVERSITY,
COLORADO STATE UNIVERSITY,
UNIVERSITY OF ARIZONA
AND
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

NOTICE OF NAMING AND RELEASE OF 'GANADA' YELLOW BLUESTEM FOR SOIL
STABILIZATION AND RANGE FORAGE.

The Agricultural Experiment Stations of New Mexico State University, Colorado State University, the University of Arizona, and the United States Department of Agriculture, Soil Conservation Service, announce the naming and release of 'Ganada' yellow bluestem (*Bothriochloa ischaemum* [L.] Keng.).

Origin: Seed of 'Ganada' was collected near Tajikistan, Turkestan, in 1934 by Westover-Enlow expedition and introduced as P. I. 107017. It was tested as A-1407.

Description: Yellow bluestem is an introduced, erect, warm-season, perennial bunch grass. Culms are 60 to 155 cm. tall, noticeably pale yellow, with dark nodes; leaves mostly basal, average length 25 to 30 cm; blades 3 to 4 mm. wide, slightly scabrous above with scattered long hairs more prominent near base of blade; foliage color generally light green. Typical inflorescence consists of several unbranched racemes arranged subdigitally on axis distinctly shorter than the longest raceme 1/. Individual plants tend to form large saucer-shaped clumps with stems curving up from the periphery of the clump. Plants, under favorable moisture conditions, tend to produce seed heads from early summer to frost. 'Ganada' yellow bluestem spreads aggressively by volunteer seedlings.

Area of Adaptation: The full range of adaptation of 'Ganada' yellow bluestem is unknown. In Colorado and New Mexico it is adapted to a wide range of soils, from loamy sands to clay, and a climate having a predominately summer rainfall pattern. It has shown to be winterhardy as far north as Colorado Springs at 6000' elevation with 14" average annual precipitation and Akron, Colorado, at 5310' elevation and 11" average annual precipitation. In south central New Mexico, near Alamogordo, at 4200' elevation with 9.5" average annual precipitation, 'Ganada' yellow bluestem proved to be adapted on a clayey floodplain site.

1/ Description adapted from: Taliaferro, C. M., Harlan, J. R. and Richardson, W. L., 1972, Plains Bluestem. Oklahoma State University Agricultural Experiment. Station Bulletin B-699.

Testing: 'Ganada' yellow bluestem **was** evaluated under irrigation at the ~~Plant~~ Materials Center at Los Lunas, New Mexico, as accession number A-1407. Initial evaluation plots of sixteen old world bluestem strains were established at the Los Lunas PMC in 1968. 'Ganada' was superior in stand (it rated Excellent) to all other strains tested. Three made **no** stand. It rated Good for herbage production or equal to 5 other strains and superior to the other 10. For seed production 'Ganada' rated Good as did one other accession and superior to all others (Table 1).

It was compared with El Kan yellow bluestem at the Fort Stanton Experimental Ranch near Capitan, New Mexico, in a nonirrigated field planting in 10'x10' plots replicated 4 times. 'Ganada' was consistently better than El Kan in stand and herbage production and generally showed better vigor. Plants were taller than El Kan (Table 2). Seed production was not a factor in this test.

Although 'Ganada' yellow bluestem and one other strain were the highest seed producers in test plots mentioned above, it does not, or has not produced an abundance of seed at the Los Lunas PMC. The 9 year average was 27 pounds pure-live-seed per acre, with the low being 3 lbs. and the high 53 lbs. Blasting of seed heads in certain years has been noted, and appeared to be more prevalent in years when the first irrigation of the season was applied earlier than average. Selection pressure was not applied to seed increase plots or fields (Table 3).

In field seeding tests conducted by Carlton Herbel et al. across southern New Mexico, yellow bluestem was listed as being one of the species more easily established on sandy to loamy sites, as well as on heavier soils previously infested with creosotebush. 2/ Herbel also stated that "In all cases where seedlings were established so that we could make evaluations, A-1407 ('Ganada') was superior to El Kan, both in establishment and persistence." 3/

Thirty-three nonirrigated field plantings containing 'Ganada' were made in New Mexico and 18 in Colorado. 'Ganada' outperformed all other accessions and species in 7 of the plantings, performed well above average in 12 plantings, above average in 14 plantings, was average in 11 plantings, and below average in 7 plantings.

'Ganada' was directly compared with other strains of yellow bluestem in 13 of the plantings. In each of these comparisons, 'Ganada' rated higher than did the strain being compared. In 9 of the 13 plantings, 'Ganada' rated stands of from Poor to Good, and very poor in 4, whereas in 10 of the plantings, the strain it was compared with rated Zero or None.

2/ Herbel, C. H., Abernathy, G. H., Yarbrough, C. C. and Gardner, D. K., 1973. Rootplowing and Seeding Arid Rangelands in the Southwest. J. Range Manage 26 (3): 193-197.

3/ Personal correspondence from Carlton H. Herbel, Science and Education Administration, March 8, 1977.

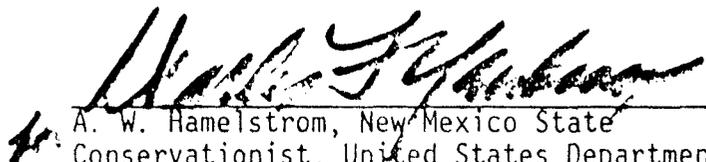
The L. U. Project Planting near Clayton, New Mexico, containing 22 accessions of grasses representing 20 species, and the Comanche National Grassland planting near Springfield, Colorado, containing 24 accessions of grasses representing 21 species, demonstrates that 'Ganada' yellow bluestem can be successfully established and persist in seedings on some rather tough sites. After 19 years in the L. U. Project Planting, 'Ganada' rated an Excellent stand which was the best out of the 22 accessions planted, and after 16 years of the Comanche planting, it also rated an Excellent stand and was equaled in performance only by **A-8604** spike muhly.

Use: 'Ganada' yellow-bluestem is a valuable soil stabilizer for critical areas, and for revegetation of deteriorated rangeland or "go-back" cropland which occurs in its range of adaptation. In plantings which have been subjected to grazing, it has been observed that forage of 'Ganada' was very well accepted by livestock.

It will be used in seed mixes to complement other adapted species. 'Ganada' will become more valuable as the demand for revegetation increases.

Seed Source: Breeder seed will be produced **by** the Plant Materials Center, Los Lunas, New Mexico. Limited quantities of foundation seed will be available in 1979 to growers through Crop Improvement Associations and Soil and Water Conservation Districts. Standards for all classes of seed will be included in the New Mexico Seed Certification Handbook and the Colorado Grass Seed Certification Standards.

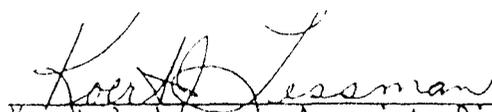
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