



United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Program

'Cimarron' little bluestem

Schizachyrium scoparium (Michx.) Nash

A Conservation Plant Release by USDA NRCS Manhattan Plant Materials Center, Manhattan, Kansas



Figure 1. Mature stand of Cimarron little bluestem in a field setting.

'Cimarron' little bluestem (*Schizachyrium scoparium*) is a cultivar released in 1979 in cooperation with the Kansas Agricultural Experiment Station (KAES).

Description

Little bluestem is a native, perennial, mid-grass that has a dense root system that may reach down 5 to 6 feet in depth. This bunchgrass is one of the most widely distributed native grasses in North America and has natural stands in Canada, Mexico, and the USA. Little bluestem is easily identified by its flat, blueish-colored basal shoots and its leaf blades that tend to fold. Its inflorescences are solitary racemes with paired sessile and pedicelled spikelets. The lemma of the sessile spikelet is awned (.5 inch) and the awn is bent and twisted. Little bluestem begins growth in the early spring and matures in the fall with seed maturing in late September to early October.

Source

Cimarron little bluestem was collected from multiple sites in southwestern Kansas and the panhandle of Oklahoma in 1959 by Soil Conservation Service (SCS) personnel. Cimarron is known to produce forage and seed in dry environments with as little as 12 inches annual precipitation.

Conservation Uses

Livestock: Little bluestem forage value is good early in the season, but becomes somewhat coarse after seed maturity. Little bluestem can produce up to two tons of forage per acre on good sites.

Conservation: Due to its tolerance to low rainfall and its ability to survive on shallow, well drained soils, this

species is important for erosion control. Scientists have suggested that since little bluestem is broadly adapted in North America and can survive on dry, coarse soil then it may be a candidate for biomass production in those areas.

Ethnobotany: The Kiowa-Apaches used bundles of little bluestem as switches in their sweat lodges. They believed that switching of arms, neck and shoulders would cure aches and drive away evil spirits.

Wildlife: Little bluestem is an important food source for the caterpillars of the prairie such as ottoe skippers, swarthy skippers, cobweb skippers, and other skippers.

Landscaping: The little bluestem variety, Blaze, was originally developed as an ornamental grass due to its bright red foliage color in the fall after frost. Cimarron has been proposed to be used as a design component in secondary roughs on golf courses due to its minimal maintenance requirements and aesthetics. Studies at Mississippi State University, Plant Sciences Research Center at Starkville, Mississippi provided seeding rate amounts needed to provide golf courses with desirable secondary roughs in the southern states.

Area of Adaptation and Use



Figure 2. Cimarron little bluestem area of adaptation map.

Establishment and Management for Conservation Plantings

Little bluestem has approximately 255,000 seed units per pound of seed. For commercial seed production plantings a typical planting rate of 30 Pure Live Seeds (PLS) per linear foot of row in 36 inch wide rows would require 1.7 PLS pounds of seed per acre. Field preparations prior to planting would include a weed free field, a firmly packed surface, and the ability to deliver seed units at a depth of .25 to .5 inches below the soils surface. Broadcast plantings of little bluestem should supply at least 30 PLS seeds per square foot of area covered. A roller packer

should be used after broadcasting to press the seed units into the firmly packed soil surface for better seed to soil contact. A broadcast rate of 5.0 PLS pounds per acre should provide a solid stand planting of little bluestem.

Ecological Considerations

Little bluestem is susceptible to several pathogenic microorganisms that impact the plant in terms of its ability to photosynthesize and thus produce feedstock or biomass. Reductions may occur when the plant is parasitized by a pathogen that causes foliar disruption such as leaf rust, anthracnose, leaf blotch, and leaf spot. The fungal pathogen *Phyllosticta andropogonivora* was isolated from little bluestem plants in North Dakota and then used to re-infect plants in an isolated greenhouse experiment. This leaf spot disease has the potential to reduce the foliage quality and yield of little bluestem cultivars. Viral pathogens can also cause physiological damage to plants that result in lower photosynthetic capacity and biomass production. Little bluestem has been identified as being infected by maize streak monogeminivirus.

Seed and Plant Production

The seed and seedling production of little bluestem can be accomplished in one to two years. A reasonable expectation is that seed production can begin the second year, but good production will occur in the third year or later. Seed production fields can be established in 30 to 42 inch rows. Cultivation and broad leaf herbicides can be used to control weeds the year of establishment. Other labeled herbicides can be used to provide weed control after plant establishment is complete. With complete establishment, nitrogen fertilizer can be applied at a rate of 50 to 75 pounds of actual nitrogen per acre with potassium and phosphorus applied at the rates recommended by the soil test. Irrigation water should be applied as needed to produce a seed crop. A six year average of Cimarron seed production at Manhattan, Kansas yielded 55 PLS pounds of seed per acre with an average purity, germination, and dormancy of 85.76, 74.5, and 2.3 percent, respectively. Seed units of Cimarron can be planted in the greenhouse to propagate little bluestem seedlings. Seed will germinate in 10 to 21 days after planting in containers and can normally be moved to a field setting following 60 days growth in the greenhouse. Plants growing in the field can be extracted and physically divided into clonal pieces for genetic studies or to increase the number of plants in a population. This type of work is physically demanding and labor intensive and does not quickly increase the number of plants.

Availability

For conservation use: Cimarron little bluestem is widely available from several commercial seed vendors.

For seed or plant increase: The Manhattan PMC maintains breeder and foundation seed. There is no registered seed class for Cimarron, only breeders, foundation and certified classes of seed are recognized for this variety.

For more information, contact:
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Citation

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For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov/>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov/>>

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