

## Iowa Germplasm Big Bluestem, *Andropogon gerardii*, Vitman

Big bluestem is a native warm-season grass. It is a major component of the tall grass prairie. Iowa Germplasm big bluestem is a composite of collections taken from native prairie remnants from counties located throughout the state of Iowa.

The USDA-Natural Resources Conservation Service (NRCS), Elsberry Plant Materials Center in Cooperation with the University of Northern Iowa (UNI), Tallgrass Prairie Center (TPC), Iowa Integrated Roadside Vegetation Management Program (IRVM), the Iowa Department of Transportation



Flowering seedhead of big bluestem

(IDOT), and the Iowa Crop Improvement Association (ICIA) released Northern, Central, and Southern Iowa Germplasm Big Bluestem in October 2000.

### Source of Collection

The state of Iowa was divided into three zones; each zone reflected three tiers of counties: Northern, Central and Southern. These releases are a Source Identified Class of Natural Germplasm for use in selected areas of the Plant Materials service area. The potential uses of Iowa Germplasm big bluestem include roadside plantings, prairie creations and restorations, landscaping, and for increasing plant diversity in prairie communities. Big bluestem can be used for conservation cover and can provide hay and forage for all classes of livestock.

Big bluestems forage quality rates good to excellent if plants are utilized in the leafy stage and before seedhead emergence. It is an important part of prairie pastures and is considered a long-lived perennial.

### Description

Big bluestem is a tall warm-season, perennial native grass with stiff, erect culms; flattened and keeled sheaths; membranous ligules; and flat or folded leaf blades. Big bluestem has developed a very efficient spreading root system which may reach depths of 5-8 feet in Northern latitudes, and 6-8 feet or more in the Southern part of its natural range. Although short rhizomes may be present, it usually makes a bunch type growth. Iowa Germplasm big bluestem is a composite of many collections with a wide range of adaptation to

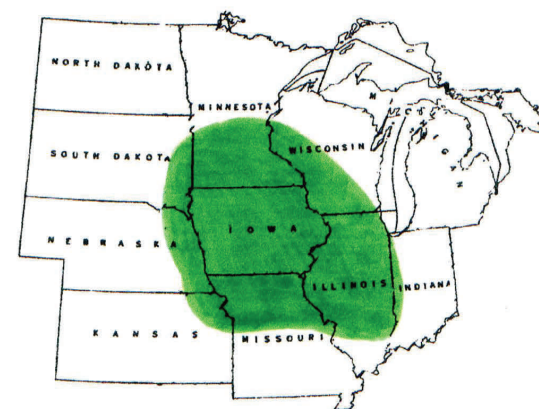


Photo by Don Kurz

soil and climate. Big bluestem is one of the most widespread and important prairie forage grasses of the North American tallgrass prairie region. It is usually associated with one or more of the other three dominant species, indiangrass, (*Sorghastrum nutans* (L.) Nash.), switchgrass, (*Panicum virgatum* L.), and little bluestem (*schizachyrium scoparium* (Michx.) Nash.). Big bluestem occurs on sub irrigated lowland, nearly level to gently undulating glacial till plains, overflow sites, level swales and depressions, residual and glacial uplands, and stream terraces and bottomlands along rivers and tributaries. The abundant, leafy forage is palatable to all classes of livestock.

### Adaptation

Big bluestem is adapted to most upland and some bottomland soils. Ecotypes are adapted to areas with as little as 14 inches to over 50 inches of average annual precipitation. The number of collections from the counties in Iowa guarantee the adaptation of these releases to the entire state of Iowa.



Recommended Area of Intended Use for Iowa

### Area of Intended Use for Iowa Germplasm Big Bluestem

Iowa Germplasm big bluestem intended area of use will be the entire state of Iowa and adjoining portions of surrounding states.

## Establishment

Big bluestem can be easily established by planting seed using a native grass drill. Prepare a clean weed free seedbed by disking and harrowing or using chemical weed control. Firm seedbed by cultipacking. Seedbed should be firm enough to allow seed to be planted approximately 1/4 inch deep. Use a planter that will insure proper seeding depth and good seed and soil contact like a brilliant seeder or a native grass drill that is capable of handling and placing seed in a uniform manner. There are approximately 165,000 seeds in a pound of big bluestem.



Above big bluestem seed— Increments 1/16th in.

## Seeding Rate (Forage Production and Conservation Cover)

A seeding rate of 10 pounds Pure Live Seed (PLS) per acre (FOTG 40 PLS per square foot) for pasture and hay is sufficient.

## Seeding Rate (Seed Production)

Planting big bluestem for seed production can be accomplished using several different row spacings: 36 inch row spacing, 30, 24, 12, and solid stand. Seeding rate for 36 inch row spacing should be 3.5 pounds PLS per acre; for 24 inch row spacing the seeding rate should be 5.3 pounds PLS per acre and 10 pounds PLS per acre for the 12 inch and solid stand plantings. A seeding rate of 4.2 pounds PLS per acre in 30 inch rows is also sufficient for seed production (40 PLS

per linear foot). For best results, seeding should be made in the spring of the year. Use no fertilizer the establishment year unless soil test indicates a low deficiency of less than 15 PPM of phosphorus and/or less than 90 PPM of potassium. Use no nitrogen during the establishment year as this can encourage weed competition.

## Management

Reduce weed competition by mowing over the height of the big bluestem plants or cultivating between the rows. Use a labeled herbicide to control annuals and perennial weeds. Panoramic, Plateau, and Journey are labeled for use on big bluestem with different restrictions. Remove dead plant materials in the spring for faster green up by burning. Big bluestem is a fire climax type grass; it responds positive to burning.

## Availability

Foundation seed of Iowa Germplasm big bluestem is being produced in limited supply by the Elsberry Plant Materials Center.

## For More Information

Visit our Plant Materials website at <http://Plant-Materials.nrcs.usda.gov> to find more information on solving conservation problems using plants.

USDA-NRCS  
Elsberry Plant Materials Center  
2803 N. Highway 79  
Phone: (573) 898—2012

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## A Source-Identified Conservation Plant Developed by the Elsberry Plant Materials Center Elsberry, Missouri