



Figure 1. Individual plant of Cheyenne Indiangrass showing leaves and inflorescence. Photograph taken by Alan Shadow, East Texas Plant Materials Center.

Cheyenne Indiangrass (*Sorghastrum nutans*) is an informal released in 1945 by the Manhattan Plant Materials Center.

### Description

Indiangrass is a native, perennial, warm-season grass that reproduces from seed and short, scaly rhizomes. It is a major component of the tall grass prairie of the central and eastern United States. Indiangrass grows from 3 to 7 foot tall and is one of the three major grasses (along with big bluestem and switchgrass) that compose the tall grass prairie. This grass is easily identified, even in its juvenile state, by the prominent, deeply notched, two-part split ligule located where the leaf blade attaches to the leaf sheath. Plant stems are erect with long (up to 24 inches long), narrow (up to 1/2 inch wide) leaf blades. The inflorescence is a condensed panicle up to 8 to 12 inches long bearing perfect spikelets each flanked by 1 or 2 sterile pedicels. There are approximately 175,000 seeds per pound for Indiangrass.

### Source

Original seed collections for Cheyenne were made in a native rangeland near Fort Supply, Oklahoma in 1942. It was selected at the Soil Conservation Service (SCS) Nursery in Woodward, Oklahoma by J.E. Smith Jr. and G.L. Powers. It was an informal release from SCS in 1945, but a field established by Max Bower in Morton, Texas in 1954 is believed to be the first planting of Cheyenne for commercial seed production.

### Conservation Uses

Indiangrass grows singly or in mixtures with other native grasses and provides livestock with forage in pasture and rangeland situations. Its forage is nutritious and palatable for cattle and horses through the growing season, but it does not cure well and is considered only moderately palatable after maturity and fair forage for winter grazing. Indiangrass is used for erosion control in critical areas and along roadsides and in areas subjected to wind erosion. White-tailed deer and other forage consuming wildlife species browse on Indiangrass. Mixtures of Indiangrass and other warm-season species provide nesting, brooding, loafing, and escape cover for bobwhite quail. Seeds of Indiangrass are consumed by birds and small mammals. It also may have potential as a landscape species in native grass and wildflower plantings.

### Area of Adaptation and Use



Figure 2. Area of adaptation and use of Cheyenne Indiangrass.

### Establishment and Management for Conservation Plantings

The most common causes of warm-season grass establishment failures are improper seed placement (too deep usually) and poor seedbed preparation. The planting surface of a correctly prepared seedbed should be very firm and show only a light foot prints impression when

tread upon by an adult. Indiangrass seed requires the fairly warm soil temperature of 50°F or greater to initiate germination. The seed units of Indiangrass are light and have attached awns that will impede seed flow unless debearded. A moist, firm, weed free seedbed is essential for successful establishment. The recommended seeding depth is ¼ to ½ inch and using a drill with double disk openers and depth bands is preferred. Conservation or pasture plantings should use the recommended 30 to 60 Pure Live Seeds (PLS) per square foot depending on the purpose of the planting and the site on which it is located. Fertilization is not recommended the initial year of planting unless the soil test indicates a severe deficiency in soil nutrients. Nitrogen especially should not be used until the grass is fully established. Applying nitrogen the establishment year will only promote weedy species growth which will inhibit the establishment of Indiangrass. Grazing should be restricted to half of the standing material available. In no case should the foliage be grazed lower than 8 to 12 inches. Overgrazing will damage the stand and lead to reduced stands that may have to be replanted or rejuvenated with management practices such as prescribed burning, fertilization, herbicide applications or limited grazing. Prescribed burning increases vigor of the plants, increases early forage production and reduces weed completion within the stand.

#### **Ecological Considerations**

Indiangrass is host to the leaf spot pathogen *Colletotrichum caudatum* and the rust fungus *Puccinia virgata*. In greenhouse inoculation tests in the early 1980's *C. caudatum* caused severe damage to several Indiangrass cultivars. Most Indiangrass cultivars were rated in a range from 5.7 to 7.3 which translates to moderately to severely infected. *Puccinia virgata* damage was noted on Indiangrass specimens collected in South Dakota. Also reported on Indiangrass in Brooking County, South Dakota was the fungal pathogen *Phyllachora luteo-maculata* or tar spot.

#### **Seed and Plant Production**

Stand establishment can normally be accomplished in a single year. Seed production fields should be established in 30 to 42 inch rows depending on equipment available. A seeding rate of 2.5 pounds of pure live seeds (PLS) is recommended for establishing Indiangrass in 36 inch rows for seed production. Herbicides can be applied to provide weed control once plant establishment is complete. Nitrogen fertilizer can be applied at a rate of 60 to 100 pounds of actual nitrogen per acre and potassium and phosphorus as recommended by a soil test. Irrigation water should be applied as needed to produce a seed crop. A ten year average of Cheyenne seed production at

Manhattan, Kansas yielded 86 pounds of pure live seed (PLS) per acre with an average germination of 70 percent and average dormant seed of 7 percent. Average purity of those lots was 94.12 percent with an inert material percentage of 5.83. Seed can be planted in the greenhouse to produce Indiangrass seedlings. Seed will germinate in 10 to 14 days and can be moved to a field setting after 60 growing days in the greenhouse.

Field grown plants can be excavated from the soil and physically divided into clonal ramets for genetic studies or to increase the population of individual plants. This type of work is fairly labor intensive and does not greatly increase the number of plants.

#### **Availability**

*For conservation use:* Cheyenne is generally commercially available in the seed trade.

*For seed or plant increase:* Despite not being formally released, Cheyenne Indiangrass seed is produced at the Manhattan Plant Materials Center, but obviously is not a Foundation Class Seed. Thus, there is no Certified or Registered seed class for this release either.

*For more information, contact:*  
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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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