



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

# 'Osage' Indiangrass

*Sorghastrum nutans* (L.) Nash.

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



Figure 1. Field of Osage Indiangrass showing plant inflorescences and foliage. Photograph taken by Alan Shadow, East Texas Plant Materials Center.

'Osage' Indiangrass (*Sorghastrum nutans*) is a cultivar released in 1966 in cooperation with the Kansas Agricultural Experiment Station and the USDA, Agriculture Research Service.

### 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

The variety Osage is an eight clone synthetic developed from seed collected in eastern and central Kansas and Oklahoma in 1953. This variety is tall, vigorous, leafy, late-maturing and rust resistant. It was tested for release as Experimental Strain 3.

### Conservation Uses

Indiangrass grows singly or in mixtures with other native grasses to provide livestock with forage in pasture and rangeland situations. Its forage is nutritious and palatable

for cattle and horses throughout 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.

### Area of Adaptation and Use

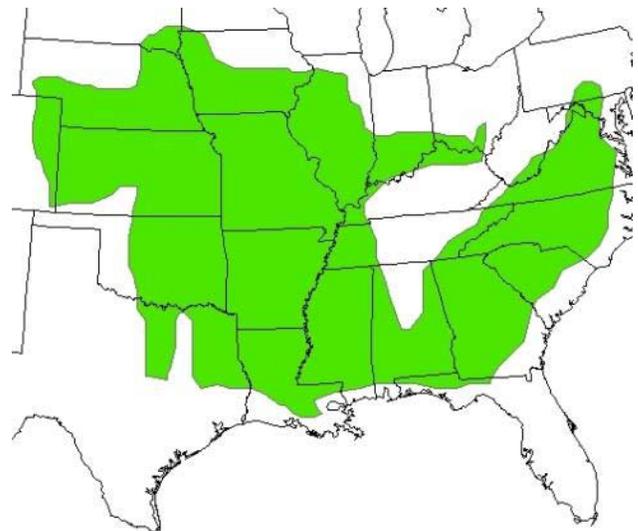


Figure 2. Area of adaptation and use of Osage Indiangrass.

### Establishment and Management for Conservation Plantings

The most common causes of warm-season grass failures in establishment 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 impression when tread upon by an adult. Indiangrass seed requires a 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 debarbed. A moist, firm, weed free seedbed is essential for successful establishment. The recommended seeding depth is 1/4 to 1/2 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 limited 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 restriction from 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 Indiangrass cultivars. Osage was one of the cultivars subjected to pathogenic screening to the leaf spot fungus. In a rating scale of 1 to 9 Osage was rated at a 7.3 which translates to severely infected by the pathogen seven days after inoculation. Other Indiangrass cultivars were rated in a range from 5.7 to 7.3 which is moderate to severe infection. *Puccinia virgata* damage was noted on Indiangrass specimens collected in South Dakota. Also reported on Indiangrass in Brookings 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 nine year average of Osage seed production at Manhattan, Kansas yielded 135 pounds of pure live seed (PLS) per acre with an average germination of 50 percent and average dormant seed of 18 percent. Average purity of those lots was 91.6 percent with an inert material percentage of 8.4. 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 labor intensive and does not greatly increase the number of plants.

### Availability

*For conservation use:* Osage Indiangrass is widely available from several commercial seed vendors.

*For seed or plant increase:* The Manhattan Plant Materials Center maintains breeder and foundation seed. There is no registered seed class of Osage Indiangrass.

*For more information, contact:*  
Manhattan Plant Materials Center  
3800 South 20<sup>th</sup> Street  
Manhattan, Kansas 66502  
(785) 539-8761 FAX (785) 539-2034  
<http://www.plant-materials.usda.nrcs.gov>

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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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