Planting Guide

Indiangrass in South Carolina

(Sorghastrum nutans)

GENERAL USE

Indiangrass is a native, perennial, warm season grass noted for its rapid growth in the mid to late summer when high temperatures retard the growth of cool season grasses. The primary use of Indiangrass is as livestock forage seeded in pure stands or mixtures. It is rated as excellent for bird nesting and rearing. Undisturbed nesting and hatching are possible in fields of Indiangrass because grazing and haying operations are done after the prime nesting season for most wildlife species.

CHARACTERISTICS

Indiangrass produces a deep, extensive, fibrous root system and short rhizomes. It can be distinguished from other warm season grasses, even when they are young, by its fuzzy stem and a claw-like extension of its sheath. When mature, it has a single, narrow, plume-like, golden seed head.

Growth begins in late April or early May, and increases rapidly with higher temperatures. It produces about seventy percent of its annual growth after July 1. If undisturbed, it attains a height of five to eight feet, and has good stem strength. Mature, unharvested stems will remain standing well into the winter for increased protective cover for wildlife.

ADAPTABILITY

Indiangrass is winter hardy, and will grow throughout South Carolina. It is adapted to all soil textures and drainage classes except very poorly drained conditions. Deep, well-drained soils are preferred for optimum production.

ECOTYPES AND CULIVARS

Stands established from seed of local stands will be well adapted to the area in the proximity of the collection site and will preserve the genetic integrity of the plant communities in the area. The adaptation of that seed beyond the immediate area will be unknown without testing. The seed production and quality, forage production and quality, and wildlife habitat value will also be unknown. Commercial seed producers will set their prices based on the risk of seed production and the potential market for seed with unknown adaptation. Newberry germplasm of indiangrass, originally from Newberry County, South Carolina and released by the Americus, Georgia Plant Materials Center, may be adapted to the northwestern half of South Carolina (plant hardiness zone 7). Suther germplasm, originally from Cabarrus County, North Carolina and released by the Cape May, New Jersey Plant Materials Center, may also be adapted to the northwestern half of South Carolina (plant hardiness zones 7).

Regionally adapted cultivars are the products of extensive collection and testing within a region. The plant material is tested extensively for its adaptation throughout the region and dependability of seed production, forage production, and wildlife habitat value. Commercial seed producers set their price with full knowledge of the cultivars' potential

seed production and its market based on the area of adaptation.

'Rumsey', originally from Jefferson County, Illinois and released by the Elsberry, Missouri Plant Materials Center, is adapted to the northwestern half of South Carolina (plant hardiness zones 7). 'Osage', originally from Kansas and released by the Manhattan, Kansas Plant Materials Center, is also adapted to the northwestern half of the state (plant hardiness zone 7). 'Americus', a cultivar selected from ecotypes from Georgia and Alabama and released by the Americus, Georgia Plant Materials Center, is adapted to the entire state (plant hardiness zones 7 and 8). 'Lometa', originally from Texas and released from the Knox City, Texas Plant Materials Center is adapted to the entire state (plant hardiness zones 7 and 8).

ESTABLISHMENT

For optimum germination and growth, freshly collected seed of indiangrass requires a cold, moist stratification before it will germinate at high temperatures. Ecotypes and cultivars from further south will germinate without stratification at a higher rate than cultivars from further north, but earlier seedings will germinate earlier and survive summer droughts better.

It should be drilled into prepared seedbeds or no-till. Prepared seedbeds must be fine, firm surfaces free of competition. The seeding must be packed after drilling to insure good seed to soil contact. Seedings into fields that have been pastures or hayfields must have good weed control of the live vegetation on the site before drilling. No-till seedings are recommended in fields that have been pastures or hayfields to minimize the exposure of weed seeds to ideal germination conditions.

Native grass and forb seed is bought, sold, and seeding rates are developed by pounds of pure live seed. Pure live seed is the amount of actual seed that will germinate in an amount of seed. Because the germination of native seeds is not dependable year to year and many species have awns, hairs or other impurities attached to the seed, pure live seed is the only dependable way of handling native seeds. Drills must be calibrated to sow the correct amount of bulk seed to deliver the specified pure live seed. For example, to deliver 5 pounds of pure live seed with 50% germination and 50% purity, the drill must sow 5/0.5 X 0.5 = 5/0.25 = 20 pounds of bulk seed.

Seeding Dates – Optimum - Before the local date of last frost
Northwestern South Carolina – May 1
Southeastern South Carolina – April 1
Last date to avoid extensive summer drought mortality – May 15
Seeding Rate – 175,000 seeds per pound, pure stand rates based on 30 pure live seeds per square foot drilled for wildlife habitat and restoration, 50 pure live seeds per square foot drilled for forage and erosion control, rates mixtures should be reduced in proportion to the number of species in the mix and the desired representation of each species in the mix:
At 30 seeds per square foot (1.3 million seeds per acre),
8 pounds of pure live seed per acre drilled in pure stands
At 50 seeds per square foot (2.2 million seeds per acre),
13 pounds of pure live seed per acre drilled in pure stands
Seeding Depth – ¼ to 1/2 inch

Indiangrass seed is chaffy, and must be debearded mechanically, sown with drills with

chaffy seed boxes capable of handling the seed, or mixed with an inert material (weight of the inert material equal to the weight of the seed). Mechanical debearding will add one dollar per pound to the price of the seed, but will allow seeding with conventional drills.

The seedling vigor of indiangrass is poor, as it is for all perennial, native warm season grasses. Weed control is critical for stand survival. The only residual herbicide approved for use with perennial native warm season grasses is Plateau, which may be applied at or after seeding. Weed control may also be done with contact herbicides or mowing. Most contact broadleaf herbicides are approved for use on warm season grasses. Annual weeds may be controlled by mowing over the top of the indiangrass to prevent the weeds from making seed. All cool season grasses may be controlled when the indiangrass is dormant with a contact herbicide; some are controlled by Plateau.

The stand should be fertilized to raise the levels of phosphorus and potassium to moderate levels for corn (100 bushes per acre yield) before seeding. Nitrogen should not be applied until mid-summer once the stand is established and competing well with any weeds. Nitrogen rates the first year should be thirty to forty pounds per acre. The pH should be maintained between 6.0 and 6.5 for optimum production.

MANAGEMENT

Stands managed for forage should be fertilized annually with eighty pounds of nitrogen per acre, split into two applications in June and August. Nutrient contributions from manure of grazing livestock should be accounted for. Moderate soil test levels of phosphorus and potassium should be maintained.

Pastures should be grazed when the stands reach twelve to sixteen inches tall. Animals should be removed when the grass is six to eight inches tall. Hay should be cut when the grass is at boot stage, and a stubble height of six inches should be left. A height of twelve inches should be left at frost. After frost, the grass may be grazed to six inches.

Weed control may be accomplished by maintaining plant vigor. Broadleaf weeds may be controlled with contact herbicides applied during the growing season; some may be controlled by Plateau before or during the growing season. Cool season grasses may be controlled with contact herbicides applied when the Indiangrass is dormant; some may be controlled by Plateau before or during the growing season.

Stands managed for wildlife and not harvested for forage should be burned every three to five years to stimulate the stand and reduce excessive mulch accumulations that restrict the movement of new hatchlings and attract nest predators.

Prepared by Robert Glennon, USDA-NRCS Natural Resource Specialist, Washington, DC, (former plant materials center manager in Florida and Louisiana and specialist for Florida and the Gulf Coast and Pennsylvania and West Virginia), February 2007,pgindiangrassAL.doc