



'Niagara' Big Bluestem

Andropogon gerardii Vitman

A Conservation Plant Release by USDA NRCS Big Flats Plant Materials Center, Corning, New York



Seed head of 'Niagara' big bluestem in full bloom (Photo taken at the USDA NRCS Big Flats Plant Materials Center)

'Niagara' big bluestem (PI-315656) originally was collected in Erie County, New York and was released, in 1986, for its superiority over mid-western cultivars in the East. The USDA Natural Resources Conservation Service, Agricultural Resource Service, Pasture Systems and Watershed Management Research Lab, and Pennsylvania State University cooperated in the release.

Description

Niagara is native perennial, warm-season bunch grass that grows 6 to 8 feet tall and has an extensive root system. This root system allows for it to persist on soils with low moisture content.

Niagara can be distinguished from other big bluestem cultivars by its early seed head emergence date, in late June, dark green leaf color, and quick regrowth after forage harvest. It can be distinguished from other native grasses by its long, white hairs on the upper leaf surface, near the base of the blade. The stems are round and usually hairy with a reddish-purple tint at the base and the leaf blades are long and flat. The seed head normally has three finger-like branches that appear like a 'turkey foot'. Big bluestem exhibits a bluish to bronze color in late summer and fall

Source

Niagara was originally collected from Elma, New York, in Erie County, along Buffalo creek.

Uses

Niagara is a major component of the tall grass vegetation which once dominated prairies of the Central and Eastern United States. It can be utilized widely due to its extensive root system, tolerance of hot, dry conditions, low phosphorus soils, and low pH. It is an excellent plant

for wildlife habitat, critical area seedings, roadside beautification, erosion control and other restoration areas that have sandy or droughty conditions. It can be utilized in mixes with switchgrass, indiangrass, and little bluestem.

Erosion control: Niagara can be planted to stabilize soil. Rhizomes will slowly develop and are typically 1 to 2 inches below the soil surface, while the main roots can extend into the soil, up to 10 feet. It can also be planted to provide aboveground protection against wind erosion.

Forage: Niagara is a high-quality forage species for all classes of livestock. Crude protein content ranges from 16-18% from June through August but drops below 6% in September and October. It can be used alone or in mixtures for livestock forage in pastures and hayland. It provides mid-summer forage to supplement the commonly grown cool-season grasses. This plant can be effectively utilized in rotational grazing systems, but it is best if the pasture is seeded to Niagara alone for easiest management. Plants will re-grow quickly after grazing and has no known disease problems.

Landscaping: Niagara is used in wildflower meadows and prairie plantings in conjunction with coneflowers, asters, and goldenrods. It is also effective as a rear border or accent in native plant gardens.

Wildlife: Niagara provides shelter for nesting birds and insects. Songbirds and other wildlife consume the seeds and graze the vegetative parts. Plus, it is used for nesting and cover in the summer and winter.

Area of Adaptation and Use

Niagara has been successfully grown in the eastern United States as far south as Tennessee and as far west as Kansas, however it is recommended from West Virginia to Maine. It is adapted to various soil types, but grows best on moist, well-drained fertile loams. It also grows well on soils with low moisture holding capacity, which makes it ideal for erosion control and revegetation of droughty sites such as sand and gravel pits, strip mines, and roadsides. It can also tolerate highly acidic soils.

Establishment and Management for Conservation Plantings

Successful plantings of Niagara require a well prepared, firm, weed-free seedbed. The seeding rate for drilling is 8-10 lb pure live seed (PLS) per acre. A drill with a fluffy seed box must be used unless the seed has been debearded. No nitrogen fertilizer should be applied at

establishment. Apply P & K to meet soil test recommendations as needed.

Seeding should be done in the spring before June 1. Niagara is slow to establish, and stands will reach full height at the end of the second growing season. Weed control by mowing or herbicides is important in the first year. Do not graze or cut hay until the stand is established in the second year.

Niagara can also be broadcast seeded, and cultipacking after seeding is crucial for good seed-to-soil contact. For critical areas that cannot be drilled, seed can be broadcasted or hydro-seeded and tracked with a bulldozer. Without incorporation, the seeding will result in failure. It is essential that the seed be incorporated in the soil and the seed bed is firm.

The first harvest of Niagara should not occur until it is 20 inches tall. It should not be cut or grazed below 8 inches and grazing should begin before the first seed head emerges from the sheath. Allow plants to recover to 24 inches before utilizing again.

For hay, Niagara should be cut before heading, leaving a 6-inch stubble height. Take soil tests and apply fertilizer accordingly. For good production, 50 lb of nitrogen applied in the spring will improve the quality and quantity. Dense, vigorous, well managed stands will not need weed control. If weeds develop, control by clipping, increasing grazing pressure, and using herbicides. Prescribed burning can also be effectively used in wildlife habitat managed areas.

Ecological Considerations

Niagara has less leaf spot disease and other foliar diseases than other cultivars of big bluestem.

Seed and Plant Production

Big bluestem produces very fluffy, long-awned seeds. This seed characteristic causes considerable difficulty when planting with conventional drills. Using a drill with a fluffy seed box will aid in seeding big bluestem. There are approximately 165,000 seeds/lb.

Successful planting of big bluestem requires a well-prepared firm seedbed, free from weeds. The preferred

seeding method is to drill the seed from May to early June.

Availability

For conservation use: Niagara is routinely available in the commercial market. For sources of supply or for more information on the availability, planting and use, contact your local NRCS office or Soil and Water Conservation District.

For seed or plant increase: Niagara foundation stock is available at the USDA NRCS Big Flats Plant Materials Center in Corning, New York.

For more information, contact:

UDSA- NRCS

Big Flats Plant Materials Center

3266 State Route 352

Corning, New York 14830

607-562-8404 (phone)

Or

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<http://plant-materials.nrcs.usda.gov/nypmc/>

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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