



United States Department of Agriculture

# 'Tioga' deertongue

*Dichanthelium clandestinum* (L.) Gould

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



Close up of Tioga stem and leaf blades. Photo taken at the USDA NRCS Big Flats Plant Materials Center.

'Tioga' deertongue (*Dichanthelium clandestinum* (L.) Gould) is a cultivar released in 1975 in cooperation with the Pennsylvania Agricultural Experiment Station, and Cornell University Agricultural Experiment Station and is the only cultivar of deertongue.

## Description

Tioga is a perennial, cool season grass native to the eastern United States and southeastern Canada. The mid-summer growth normally reaches a height of 1 to 3 feet. Leaves are ½ to ¾ inches wide and 4 to 8 inches long. Tioga produces short, strong rhizomes. Two seed crops are produced annually, an early crop on an open terminal panicle and a later crop on a panicle enclosed in the swollen leaf sheath. Most of the early crop is sterile and shatters easily. The second crop produces an abundance of seed.

## Source

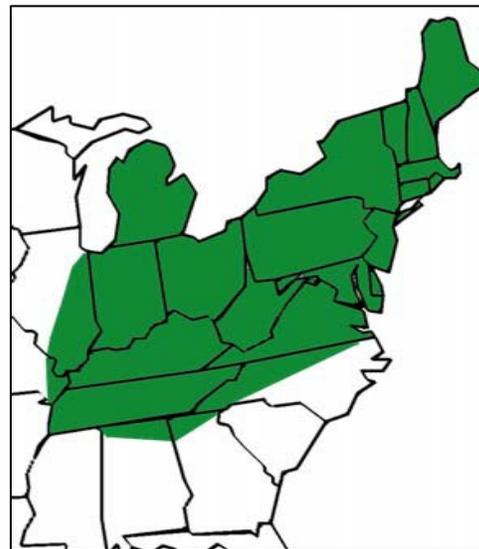
Tioga is a composite of 20 accessions, collected from 1967-1969, from Pennsylvania, New York and New Hampshire. There are 18 accessions from Pennsylvania, and one from New York and New Hampshire. Factors evaluated in making these selections were (1) seedling vigor, expressed in emergence and rapidity of seedling development, (2) growth habit and general plant vigor and, (3) disease resistance or insect predation. Seed of the composite was used to establish a seed production field at the Big Flats Plant Materials Center.

## Conservation Uses

Tioga is used for re-vegetating disturbed areas where site conditions limit the use of other species.

A common conservation use of deertongue is for re-vegetating abandoned acid coal mines and other surface mine spoils, and sandy infertile disturbed areas such as highway slopes and gravel pits. It can be planted successfully with warm season grasses. Tioga has considerable value for wildlife food and cover. Turkeys eat the seeds readily and will eat new growth in June and July. The seed is consumed by gamebirds and songbirds common to the northeast U.S. Deer will graze on new, fall rosette growth. Tioga is not recommended as a livestock forage due to its low nutrient content.

## Area of Adaptation and Use



Area of adaptation and use of Tioga.

Tioga is adapted to droughty sites and can tolerate moist soils and streambanks. It is a pioneer species of low fertility and disturbed areas. It occurs naturally on sites with a pH of 4.0 to 7.5. At low pH, it is reduced in stature and vigor but persists and spreads.

Tioga lodges over winter and forms a mat of vegetative cover. This is an important factor in the natural spread of deertongue in areas without vegetation. The old stems and leaf parts form a layer of mulch that aids in seedling establishment.

## Establishment and Management for Conservation Plantings

Tioga should be seeded as early as possible in the spring. Dormancy of deertongue seed can be broken by 4 weeks of cold-moist stratification at approximately 37° F. If the

site conditions are such that planting cannot be done in the early spring, it is advisable to make a dormant seeding in the late fall or early winter. Seed with a grain or grass drill. Seed should be drilled at a depth of ¼ to ½ inch but no deeper than 1 inch. On rough, rocky sites not suitable for conventional tillage and seeding equipment, but accessible to power equipment, some method of scarifying the surface should be used. Operations should be carried out on the contour or across the slope. On these sites, it is generally necessary to broadcast seed, then tracked in with a bulldozer.

Tioga can be hydroseeded on steep, rough areas not accessible to equipment and where no site preparation can be carried out. Two tons of agricultural limestone and 300 to 400 pounds of 10-10-10 fertilizer per acre are suggested for plantings on critical areas in lieu of soil test. Where conditions permit, these materials should be worked into the soil surface during site preparation. After a good cover has become established, plant vigor will be maintained without additional fertilizer treatments.

Mulching is beneficial for seedling establishment and erosion control. Two tons of straw or hay tacked down is the most desirable method. Where this is not possible, wood fiber mulch should be used at 1,500 pounds per acre. Mulching is essential on all areas where no seedbed preparation is performed and all broadcast seedings.

Tioga should be seeded at a rate of 8 lb per acre. In grass mixes, only 2-3 lb of deertongue is required. Seedings should be done in the early spring while the soil is still cool. Early growth of Tioga seedlings is relatively slow. Therefore, it may be desirable to seed small quantities of redtop seed. When a thin stand of deertongue is established on disturbed sites, it will gradually increase in density by re-seeding.

#### **Ecological Considerations**

Tioga does not have disease or insect problems.

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

Production of deertongue seed is relatively simple when compared to most other conservation cover plants. Stands are easily established, long-lived, produce good yields, and few problems are encountered in either the harvest or cleaning of the seed.

Tioga seed can be produced on most well-drained, tillable soils. Weed control in seed production fields is important. In the first year, one option is to mow the weeds when they over-top the deertongue.

Tioga may be harvested by direct combining. Two seed crops are produced annually: an early crop, on an open terminal panicle; and a later crop, in a panicle enclosed in the leaf sheath. The second crop produces an abundance

of seed. Deertongue has 350,000 seeds per pound. Seed is easily cleaned with any standard 2- or 3-screen seed cleaners. Some glumes will remain attached to the seed and is not necessary to remove for seed germination.

#### **Availability**

*For conservation use:* Tioga is routinely available throughout the northeast U.S. in commercial nurseries.

*For seed or plant increase:* Tioga seed for nursery propagation is available at the USDA NRCS Big Flats Plant Materials Center.

*For more information, contact:*  
USDA NRCS Big Flats Plant Materials  
Center  
3266 State Route 352  
Corning, New York 14830  
607-358-6009 (phone)  
Or  
Shawna.clark@usda.gov  
<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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