



United States Department of Agriculture

# 'Shelter' switchgrass *Panicum virgatum* L.

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



'Shelter' switchgrass seed production field, in full bloom.

'Shelter' switchgrass (*Panicum virgatum* L.) is a cultivar released in 1978 by the USDA NRCS Big Flats Plant Materials Center, in cooperation with Cornell University, New York State Division of Fish and Wildlife, and the Pennsylvania Game Commission. The cultivar name reflects the ability of this grass to provide spring nesting cover for ground nesting birds and escape cover for wildlife.

## Description

Shelter is a native perennial, warm season grass. It has short rhizomes, thicker stems and fewer leaves than other released varieties. The mature height of the plant is 3 to 5 feet, depending on soil conditions. It has smooth green leaves which are distinctly veined. The inflorescence is a large open panicle with pointed spikelets. The ligule is fringed with hairs. Shelter was chosen for its upright form and stiff stems, allowing the plants to remain erect through snows which flatten other grasses.

## Source

Shelter is a Northeast ecotype selected for its strong coarse upright stems, for use as a wildlife conservation plant. Original seed was collected near St Mary's, Pleasant County, West Virginia, in 1956. It was assigned the number NY-1388. Reselection from two generations of NY-1388 seedlings was made for leafiness, early maturity, and coarse upright stems. The progeny of this was assigned NY-4006. Advanced selection studies were conducted evaluating NY-4006 in New Jersey, Kentucky and New York. It was then concluded that NY-4006 was superior. Shelter (PI-430240) was then released in 1978. It was resistant to lodging at all sites, in all year's studies. The culms of switchgrass were still upright after 10 snowmelts. This is notably different from mid-western varieties such as Blackwell and Cave-in-Rock. Also, Shelter was consistently slower to emerge after seeding,

had lower seedling vigor, and is slower growing in the first year when compared to 'Blackwell' switchgrass.

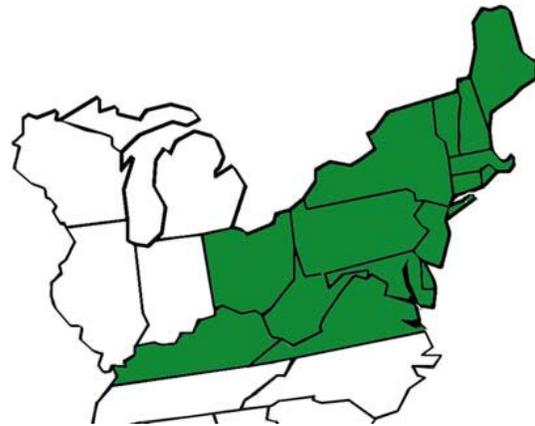
## Conservation Uses

The major conservation use for Shelter is for spring nesting cover for ground nesting birds, especially ring-necked pheasants. It can withstand high snow fall totals over winter and springs back after heavy snow melts. Shelter produces an abundance of seed which can be used as food for pheasants, quail, and songbirds.

Shelter is useful in critical area treatments and suitable for windbreak/wind barrier plantings.

Shelter is not recommended as a forage plant because other switchgrass varieties are superior for that use. However, Shelter can be grazed or hayed at appropriate growth stages with acceptable results.

## Area of Adaptation and Use



Area of Adaptation and use for 'Shelter' switchgrass.

Shelter is an upland variety which is locally adapted from Virginia to Maine. It is adapted to a wide range of soil conditions and can tolerate long periods of moisture stress. However, it is not adapted to poor or very poorly drained soils in the Northeast. It performs well on shallow, acid and droughty soils. Best results will be obtained on well-drained or moderately well-drained sandy loam, silt loam, or silty clay loam soils.

## Establishment and Management for Conservation Plantings

Fields should be treated in advance to control perennial grasses and broadleaves with tillage practices and/or herbicides. Best seeding success is by drilling at ¼” depth. For critical areas that cannot be drilled, seed can be broadcasted or hydroseeded and tracked in with a bulldozer. Hydroseeding or broadcasting without incorporation methods will often result in failure.

Shelter germinates and initially grows slowly. Weed control in new plantings is important. High mowing is a common method of weed control. Also, apply lime if needed to raise the pH to at least 5.5 at the time of planting. It is highly recommended that seeding be accomplished by June 1<sup>st</sup>, with June 15<sup>th</sup> as a cut-off date. Shelter can be readily planted in mixtures with other warm season grasses and wildflowers.

Shelter should be seeded in a pure stand when used for pasture or hay because it can be managed better alone, than in a mixture. A planting rate of approximately 8 to 10 lb per acre PLS is recommended.

Fertilizing Shelter may be needed later to maintain vigor. Mature stands resist weed and brush encroachment but are tolerant of mowing or burning in early spring each year or every few years to increase plant vigor and suppress cool season plants. A Shelter stand will last 20 years or more.

## Ecological Considerations

Shelter has no major disease or insect problems. However, in recent years it has become very susceptible to smut fungus, *Tilletia maclaganii*. Once a stand is infected with smut, plant and seed biomass yields are significantly reduced and, in some cases, no seed is produced. Seed treatments are available and are recommended in areas where smut is known to be present.

Anthracnose and gall midge, *Chilophaga virgate*, also affect Shelter stands. For wildlife and other conservation plantings, plant switchgrass in warm season grass mixtures to reduce disease and pest incidences.

## Seed and Plant Production

When establishing ‘Shelter’ switchgrass for seed production, the field should be treated in advance to control perennial grasses and weeds with tillage equipment or chemicals. Drill Shelter seed in row spacing’s of 30 to 42 inches, at a rate of 20-30 live seeds per foot of row. Planting depth should be ¼- ½ inches. Fertilize the planting area according to soil tests for establishment. In the absence of a soil test, apply 300 lb per acre of 0-20-20 fertilizer at seeding. An annual application of 300 lb per are of 15-10-10 fertilizer should be applied to maximize seed yields. A soil pH of

approximately 6 is best. It is highly recommended that seeding be accomplished by June 1, with June 15<sup>th</sup> as the latest date for establishment.

‘Shelter’ switchgrass seed is typically mature at Big Flats, New York, by October 1<sup>st</sup>. Close monitoring of the maturity of Shelter seed is advised. Generally, a small amount of shattering occurs before the bulk of the seed is ready. Use a combine for harvesting.

Seed of Shelter is easily cleaned with any two screen fanning mill seed cleaner. Screen sizes are 6/64 round and 1/22 round. It is not necessary to remove the glumes for seed germination. Seed yields at Big Flats Plant Materials Center have averaged 62 lbs of pure live seed per acre, which is typical of most warm season grasses at Big Flats.

## Availability

*For conservation use:* Shelter is readily available at commercial nurseries throughout the United States.

*For seed or plant increase:* Breeder and foundation seed of Shelter is maintained at the USDA NRCS Big Flats Plant Materials Center, near Corning New York. There is no registered seed class recognized for Shelter. Seed fields established with foundation seed will be eligible to produce certified seed.

*For more information, contact:*  
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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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