

Monarch Germplasm Seaside Goldenrod

Solidago sempervirens L.



Monarch Germplasm seaside goldenrod (*Solidago sempervirens* L.). Photo by, William Skaradek, USDA NRCS.

Monarch Germplasm seaside goldenrod is a source-identified composite germplasm released by the Cape May Plant Materials Center, Cape May NJ, in 2010.

Description

Monarch Germplasm seaside goldenrod is a perennial forb native to the Mid-Atlantic region. This late-flowering goldenrod may grow up to six feet tall at maturity, blooming August through October. The terminal flowering heads are dense, clustered spikes of bright yellow flowers that are larger than those of other goldenrod species.

Stems arise from short, stocky rhizomes. It grows in coarse to medium soils with a pH range from 5.5–7.5 and has a low soil fertility requirement. The root-length is a minimum of 14 inches and provides excellent erosion control.

Flowering is initiated by shortened photoperiods in the fall. Cross-pollination is required for viable seed. The species can readily hybridize with rough-stemmed goldenrod (*Solidago rugosa*), producing *S. xasperula*. Desf. *S. sempervirens* can also hybridize with *S. juncea* and *S. stricta*.

Source

Monarch germplasm seaside goldenrod is a source-identified composite germplasm from several native populations. Seed collections were taken from natural stands among the dunes of several Mid-Atlantic States: New Jersey, Delaware, and the eastern shore of Virginia.

Conservation Uses

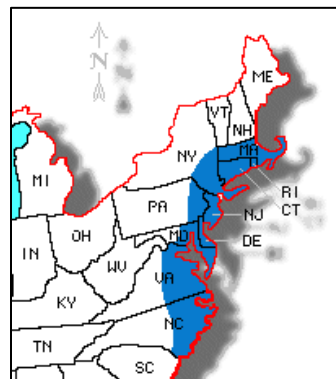
Monarch seaside goldenrod is a native perennial that has been successfully used in dune stabilization and erosion control projects. In such cases it has been found to initiate dune formation by trapping sand and debris. Sites with seaside goldenrod help the secondary establishment of annual forbs such as seaside sandmat (*Chamaesyce polygonifolia*), and American searocket (*Cakile edentula*) (Ailstock, n.d.). Seaside goldenrod often occurs with other native dune plants such as coastal panicgrass (*Panicum amarum*), salt meadow cordgrass (*Spartina patens*), and American beachgrass (*Ammophila breviligulata*).

S. sempervirens can also be used to increase biodiversity in sand dune restoration projects. Like many *Solidago* spp., the seaside goldenrod is an important resource for over-wintering gall-producing insects. Some of these insects are predatory wasps that are beneficial to nearby crops. In addition, gall larvae provide an excellent source of nutrition in the winter for birds such as the chickadee or woodpecker. It may also be used to increase the value of wildlife habitat by providing food and shelter for butterflies, birds, and small mammals. The migrating monarch butterfly uses seaside goldenrod as one of its primary food sources in the fall.

Along with American beachgrass (*Ammophila breviligulata*), seaside goldenrod plays an important role in providing nesting habitat between primary and secondary dunes for birds such as willets (*Catoptrophorus semipalmatus*), killdeer (*Charadrius vociferous*), piping plovers (*Charadrius melodus*), and black skimmers (*Rynchops niger*) (Safina and Burger, 1983).

Area of Adaptation and Use

Seaside goldenrod is found to naturally occur throughout the East and Gulf coast states. However, Monarch Germplasm is only recommended for use along the coastal regions of Southern New England to the Mid-Atlantic.



Map of 'Monarch' seaside goldenrod distribution.

Establishment and Management for Conservation Plantings

Seaside goldenrod may be propagated by seed or division. Currently the only developed method of establishing seed production plots and dune restoration plantings is through the use of containerized stock. Transplants should be planted in late winter to early spring.

Seaside goldenrod was evaluated at the Cape May Plant Materials Center for over ten years. The first year of establishment is the most critical for survival. Once the stand is established, little maintenance and only minimal irrigation is needed due to its ability to withstand hot and dry conditions. Irrigation may be needed if an extended dry period occurs. Fertilization will increase vigor of seaside goldenrod, but is not necessary for survival.

When planting into a weed-free dune site, it is important to keep the substrate attached to the roots of the seedling so as to prevent desiccation (Shumway, 2008).

Ecological Considerations

It has been reported that the release of root exudates by seaside goldenrod produce allelochemicals that negatively affect the growth of nearby vegetation. Studies by Cheplick and Aliotta (2009) have found that seaside goldenrod has a negative effect on the growth of native grasses such as purple sandgrass (*Triplasis purpurea*) and sanddune sandbur (*Cenchrus tribuloides*). Being a perennial, seaside goldenrod should also have a distinct advantage over annuals when competing for limited resources. Nevertheless, because seaside goldenrod has a moderate growth rate, a shorter life span than other *Solidago* spp., a limited ability to spread through seed, and produces seedlings with low vigor, it is not considered an invasive plant.

There is no significant herbivory recorded. Coastal or island herbivores such as rabbits and deer will occasionally browse plants. White-tailed deer have been observed browsing the leaves in fall and winter.

Seed and Plant Production

Seaside goldenrod produced 75 lbs/acre of seed (first year of establishment) to 220 lbs/acre of seed (2 years after establishment) at the Cape May Plant Materials Center, in Cape May, NJ. Plants were sown in a greenhouse in March, transferred to 2in deep, 32-cell flats in May, and transplanted as vegetative plugs into production plots in August. Plants were sown 1.5 feet apart, in rows with 3.5 ft between centers. For this same population, the germination rate was 72 percent after one year of storage at 40°F and 64 percent after two years of storage. The plant bed was prepared with a pre-emergent herbicide and

the weeds in the inter-rows were cultivated once per season.

Germination can be assisted by cold stratification and dormancy broken with use of a light source. Seed will germinate only on the surface of sand at high temperatures.

Availability

For conservation use: Monarch Germplasm is only available from a limited number of growers.

For seed or plant increase: Monarch Germplasm is an eastern US source-identified release. NRCS maintains foundation stock at the Cape May Plant Materials Center in Cape May Court House, NJ. Please contact the Plant Materials Center for availability.

For more information, contact:

USDA-NRCS

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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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