

Plant Propagation Protocol for *Drosera rotundifolia*
 ESRM 412 – Native Plant Production
 Spring 2008



Photographer: [Weyand, Phyllis](#)

http://www.wildflower.org/gallery/result.php?id_image=3794

TAXONOMY	
Family Names	
Family Scientific Name:	<i>Droseraceae</i>
Family Common Name:	Sundew
Scientific Names	
Genus:	<i>Drosera</i>
Species:	<i>Rotundifolia</i>
Species Authority:	Linnaeus
Variety:	<i>Drosera rotundifolia</i> var. <i>rotundifolia</i>
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	Linnaeus
Common Synonym(s) (may repeat this section multiple	

times as needed)	
Genus:	
Species:	
Species Authority:	
Variety:	<i>Drosera rotundifolia</i> L. var. <i>gracilis</i>
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	Laestad
Variety:	<i>Drosera rotundifolia</i> L. var. <i>comosa</i>
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	Fernald
Common Name(s):	Roundleaf sundew, common sundew
Species Code (as per USDA Plants database):	DRRO
GENERAL INFORMATION	
General Distribution (geographical range (states it occurs in), ecosystems, etc):	Round-leaved sundew is distributed from Greenland and Newfoundland west to Alaska. It occurs south along the Pacific coast to California and inland as far as western Montana and western Colorado. In the East, round-leaved sundew is found from Nova Scotia south to Georgia, Florida, and Alabama and west to the Mississippi River, Iowa, and Minnesota. Round-leaved sundew is known from at least two locations in west-central Montana. In Colorado, it is known from one bog in Gunnison County, a site that has been given special protection. There is also one record of round-leaved sundew from a bog in Bottineau County, North Dakota ⁱ . Most commonly found in sphagnum bogs. Occurs throughout much of Northern Hemisphere.
Climate and elevation range	Grows typically in very wet areas, such as swamps, bogs, and near lakes and rivers. Round-leaved sundew is usually confined to sites with a high water table or high precipitation and humidity ⁱⁱ . It requires continually moist or wet situations ⁱⁱⁱ .
Local habitat and abundance; may include commonly associated species	
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	Seral. Shade/drought intolerant. A well-adapted competitor in nutrient-poor wetland sites.
PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols,	

and is a description of where the seed that was tested came from):	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants
Propagation Method (Options: Seed or Vegetative):	Seed
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	N/A
Stock Type:	N/A
Time to Grow (from seeding until plants are ready to be outplanted):	N/A
Target Specifications (size or characteristics of target plants to be produced):	3-5 cm long.
Propagule Collection (how, when, etc):	Seed dispersal generally begins in July ^{vi} . Fruit is a capsule and seeds can be collected when capsule is dried or rotting. Seeds are also very buoyant, and can be collected by submerging in water.
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	The fusiform seeds are 0.06 to 0.07 inch (1.5-1.8 mm) long and 0.008 inch (0.2 mm) wide and have an inflated testa ⁱ . Seed weight is usually around 20µg.
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	The seeds are generally collected and stored at low temperatures (2-7°C) and sown the following spring. Damp-cold stratification. Seed trays are watered with a fungicide and kept moist ^{iv} .
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	Organic acid soils, low in nutrients, such as nitrogen and calcium. High calcium concentrations may be toxic to the plant ^v . It may also grow on peat soils of other bryophyte or of graminoid origins ^{vi} . Pots should be kept in a sealed terrarium or in plastic bags to keep moisture in.
Establishment Phase (from seeding to germination):	Seeds should be kept in a damp soil, lots of humidity and lots of light.
Length of Establishment Phase:	The longest period of dormancy recorded has been 4 years ^{vii} . Usually germinate in 4 weeks.
Active Growth Phase (from germination until plants are no longer actively growing):	N/A
Length of Active Growth Phase:	Growth begins anywhere between February and April. Flowering occurs from May to October, mainly in June and July ^{vi} .

Hardening Phase (from end of active growth phase to end of growing season; primarily related to the development of cold-hardiness and preparation for winter):	N/A
Length of Hardening Phase:	N/A
Harvesting, Storage and Shipping (of seedlings):	N/A
Length of Storage (of seedlings, between nursery and outplanting):	Seeds are viable for up to 4 years ^{viii} .
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	Plants can live up to 5 years ^{ix} . Seedlings can flower in their first summer, and plants can flower every year. It is not known whether seed is set every year ^x . Plant should be kept cool during dormant period, in a refrigerator or cooler. <i>Drosera rotundifolia</i> is an herbaceous perennial plant with a slender vertical axis about 3 cm long in plants grown in full sun, and up to 5 cm long in shade-grown plants ^{xi} .
Other Comments (including collection restrictions or guidelines, if available):	<i>Drosera rotundifolia</i> is an insectivorous plant that captures and digests insects using sticky leaf hairs to obtain nutrients, such as nitrogen, that are lacking in its natural environment. However, <i>D. rotundifolia</i> can grow, survive, and reproduce in the absence of prey ^x . It is listed as endangered in Illinois and Iowa, threatened in Tennessee, and exploitably vulnerable in New York ^{xii} .
INFORMATION SOURCES	
References (full citations):	See below
Other Sources Consulted (but that contained no pertinent information) (full citations):	International Carnivorous Plant Society Homepage. http://www.carnivorousplants.org/ (last accessed 4/22/08).
Protocol Author (First and last name):	Erik Injerd
Date Protocol Created or Updated (MM/DD/YY):	04/23/08

Note: This template was modified by J.D. Bakker from that available at: <http://www.nativeplantnetwork.org/network/SampleBlankForm.asp>

INFORMATION SOURCES

- ⁱ Matthews, Robin F. 1994. *Drosera rotundifolia*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [2008, April 22].
- ⁱⁱ Crowder, A. A.; Pearcon, M. C.; Grubb, P. J.; Langlois, P. H. 1990. *Biological flora of the British Isles*: No. 167. *Drosera L.* *Journal of Ecology*. 78: 233-267.
- ⁱⁱⁱ Hickman, James C., ed. 1993. *The Jepson manual: Higher plants of California*. Berkeley, CA: University of California Press. 1400 p.
- ^{iv} Finnie JF & van Staden J (1993) XII *Drosera* spp (sundew): Micropropagation and *in vitro* production of plumbagin. In: Bajaj YPS (ed) *Biotechnology in Agriculture and Forestry*, Vol. 24 (pp 164-177). Springer, Berlin
- ^v Lloyd, F. E. 1942. *The carnivorous plants*. Waltham, MA: Chronica Botanica Company. 352 p.
- ^{vi} Andreas, Barbara K.; Knoop, Jeffrey K. 1992. *100 years of changes in Ohio peatlands*. *Ohio Journal of Science*. 92(5): 130-138.
- ^{vii} Kinzel, W. 1913. *Frost und Licht als beeinflussende Kräfte bei der Samen Keimung*. Ulmer, Stuttgart.
- ^{viii} Crowder, A.A., M.C. Pearson, P.J. Grubbs, and P.H. Langlois. 1990. *Biological flora of the British Isles*. *Journal of Ecology* 78:233-267.
- ^{ix} Diels, L. 1906 *Das Pflanzenreich*, Vol IV, p. 112. Engelmann, Leipzig.
- ^x A. A. Crowder, M. C. Pearson, P. J. Grubb and P. H. Langlois *The Journal of Ecology*, Vol. 78, No. 1 (Mar., 1990), pp. 233-267.
- ^{xi} Wolf, E., E. Gage, and D.J. Cooper. (2006, June 29). *Drosera rotundifolia* L. (roundleaf sundew): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/droserarotundifolia.pdf> (last accessed 4/23/08).
- ^{xii} USDA, NRCS 2008. Plants Database. <http://plants.usda.gov/java/profile?symbol=DRRO> (last accessed 4/22/08).