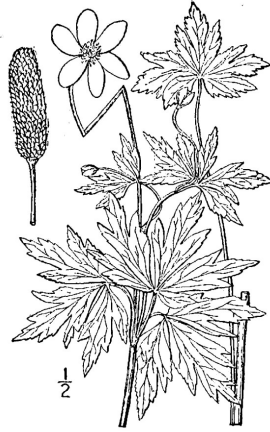


Plant Propagation Protocol for [*Anemone cylindrica*]

ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2022/ANCY.pdf>

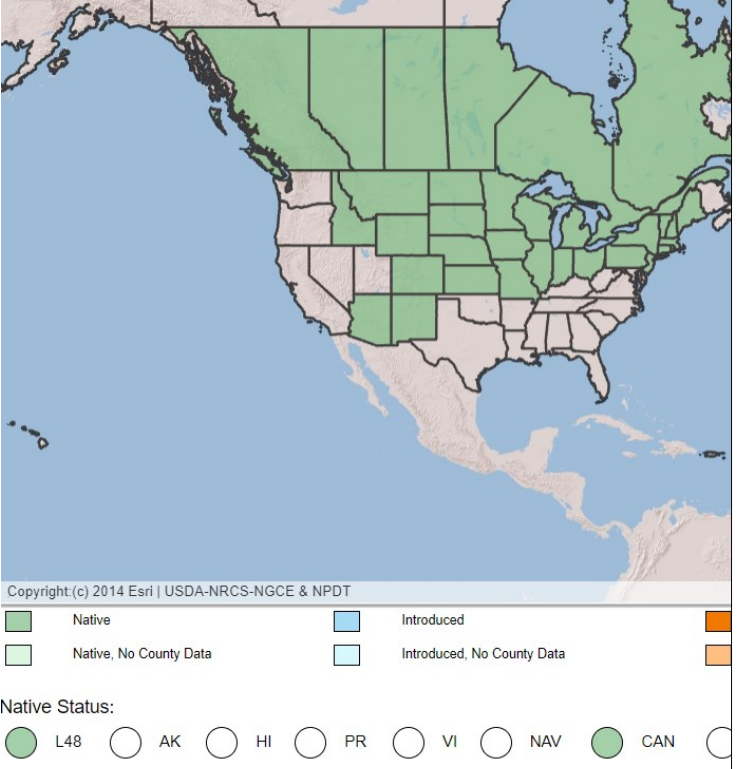


1st image: Larry Allain @ USDA-NRCS PLANTS Database

2nd image: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. Vol. 2: 99

<https://plants.usda.gov/home/plantProfile?symbol=ANCY>

TAXONOMY	
Plant Family	Buttercup family
Scientific Name	<i>Ranunculaceae</i>
Common Name	candle anemone
Species Scientific Name	<i>Anemone cylindrica</i>
Scientific Name	<i>Anemone cylindrica</i> A. Gray
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	N/A
Common Name(s)	thimbleweed, long-headed anemone ^[2] / long-headed windflower ^[3]
Species Code (as per USDA Plants database)	ANCY
GENERAL INFORMATION	

Geographical range	 <p>source: USDA plant database¹</p>
Ecological distribution	meadows, woodlands, and fields ^[3] . prairies, dry-open woods, and pastures ^[2]
Climate and elevation range	300-3000m ^[2]
Local habitat and abundance	No information found
Plant strategy type / successional stage	the roots of candle anemone produces protoanemonin which slows down or prevents the growth of nearby plants ^[3]
Plant characteristics	<p>perennial herb/ forb^[1]</p> <p>radially symmetrical^[3]</p> <p>leaves: Consists of compound toothed leaves^[7] located at the base of the stem. They also have a fuzzy underside and usually blow off the plant in the winter^[3]</p> <p>flowers: each flower has five petals and has a greenish-white color^[6] another resource mentioned that the number of petals can be 4, 5, or 6^[3]</p> <p>flowers have both carpels and stamens^[3] and can range from 2-7^[7]</p> <p>fruit: dry fruit of 1.8-3mm length^[3]</p> <p>achenes (does not separate or split when mature)^[3]</p>
PROPAGATION DETAILS	
Ecotype	N/A

Propagation Goal	plants
Propagation Method	seed
Product Type	container (plug)
Stock Type	no information found
Time to Grow	plant seeds in the fall or the beginning of spring ^[4]
Target Specifications	1-3 ft high ^[4] 20-80 cm ^[3]
Propagule Collection Instructions	bloom time: May-June ^[4] . Another resource indicated it to be in late June ^[5] seeds ripen time: mid-July to August ^[4] seed harvesting: July-August ^[5]
Propagule Processing/Propagule Characteristics	It is suggested to use a professional seed cleaner to clean the seeds for processing ^[5] 416000 seeds/lb and 26000 seeds/Oz ^[8]
Pre-Planting Propagule Treatments	dry stratification is not required but can improve germination (in winter) ^[4] in another resource, it is said that moist cold stratification is needed for 12 weeks ^[8]
Growing Area Preparation / Annual Practices for Perennial Crops	full sun or partly shaded environment is best ^[4] In nature, it grows in sandy and rocky soil ^[3] Another resource mentioned only rocky soil media ^[4] gravel was also mentioned in one resource as a suitable growing media with adding on that it is necessary to have well-drained containers ^[6]
Establishment Phase Details	It is necessary to water gently with hands during this time so that seeds stay in the container ^[5] It's also recommended to grow the seeds in a greenhouse during the establishment phase ^[8]
Length of Establishment Phase	In 2.5 weeks this plant reaches approximately 75% germination ^[5]
Active Growth Phase	It is important to fertilize in this stage of growth. start the fertilizing process after the leaves start growing ^[5] . It is also necessary to control the number of plants in each cell or pot and limit them to 2, so pruning and cutting practices are important in this stage. This allows for them to reach their desired growth rate ^[5]
Length of Active Growth Phase	No information found
Hardening Phase	If moved to a hoophouse or shadehouse: Before moving, it is necessary to adjust the conditions of the plant to the new environment including temperature and fertilization ^[5]
Length of Hardening Phase	No information found

Harvesting, Storage and Shipping	collect achenes when they are brown (July - Sept) ^[7]
Length of Storage	4-6 months ^[5]
Guidelines for Outplanting / Performance on Typical Sites	No information found
Other Comments	cold storage is necessary ^[5]
INFORMATION SOURCES	

References	<p>[1] <i>Anemone Cylindrica</i> A. Gray. (n.d.). USDA. https://plants.usda.gov/home/plantProfile?symbol=ANCY</p> <p>2. <i>Anemone Cylindrica</i> (n.d.). Efloras. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=233500053</p> <p>3. <i>Anemone cylindrica</i> -- long-headed windflower (n.d.). Go Botany. https://gobotany.nativeplanttrust.org/species/anemone/cylindrica/#:~:text=Long%2Dheaded%20windflower%20is%20native,anemone%22%20or%20%22thimbleweed%22.</p> <p>4. <i>Anemone cylindrica</i>. (n.d.) Lady Bird Johnson Wildflower Center. https://www.wildflower.org/plants/result.php?id_plant=ancy</p> <p>5. Horvath, D. (n.d.) <i>Anemone (cylindrica)</i>. Native Plant Network. RNGR. https://npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=ranunculaceae-anemone-248</p> <p>6. <i>Anemone cylindrical</i> - Thimbleweed. (n.d.) Friends of the Arboretum. https://arboretum.wisc.edu/content/uploads/2015/03/PI_Thimbleweed.pdf</p> <p>7. <i>Anemone cylindrica</i>. (n.d.) South Dakota State University https://openprairie.sdstate.edu/nativeplant/79/</p> <p>8. Houseal, G. (2007). Tallgrass Prairie Center Native Seed Production Manual https://www.roguenativeplants.org/wp-content/uploads/2018/12/Native_Seed_Production_Manual_Tallgrass_Prairie_Center_2007.pdf</p>
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other sources consulted	<p>BioOne database https://bioone-org.offcampus.lib.washington.edu/search?term=anemone+cylindrica</p> <p>EBSCOhost database https://web-s-ebSCOhost-com.offcampus.lib.washington.edu/ehost/search/advanced?vid=8&sid=b2460d53-4f25-4140-8abf-2c48901d2654%40redis</p> <p>University of Washington libraries database</p>
Protocol Author	Nawres Abdulmohsin
Date Protocol Created or Updated	5/6/2022