



**Plant Propagation Protocol for *Cicuta virosa* L.**

ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2026/CIV15.pdf>

<b>TAXONOMY</b>	
<b>Plant Family</b>	
Scientific Name	Apiaceae Lindl.
Common Name	Carrot Family
<b>Species Scientific Name</b>	
Scientific Name	<i>Cicuta virosa</i> L.
Varieties	Not recognized by USDA.
Sub-species	Not recognized by USDA.
Cultivar	Not recognized by USDA.
Common Synonym(s)	<i>Cicuta mackenzieana</i> Raup.
Common Name(s)	Mackenzie's water hemlock
Species Code (as per USDA Plants database)	CIV15
<b>GENERAL INFORMATION</b>	
Geographical range	

	
Ecological distribution	Usually found near wetlands. These can include marshes, swamps and shallow waters. They are also found near forested areas and within ditch banks. <sup>2, 3</sup>
Climate and elevation range	Although not much information is provided for the elevation. Similarly, the Water hemlock <i>Cicuta douglasii</i> , are noted to be in “higher elevations during June or July. While some sources point that the <i>Cicuta virosa</i> can be found at elevations of 300–3300 m. <sup>7, 10</sup>
Local habitat and abundance	Not much information is available. However, within the same genus <i>Cicuta maculata</i> , have been in association with elderberry. Their environments are similar as well as their flowering structures. This species also grows in wetland/marsh areas of land. So, caution is needed for harvesting fruits from the elderberry species to not mix it up with Mackenzie’s water hemlock. <sup>5</sup>
Plant strategy type / successional stage	Not much available information on this specific species. However, within the same genus, <i>Cicuta maculata</i> have been found in forested wet areas near streams and banks. They are noted as emergent near shallow waters and seem to be an understory plant considering their growth habits noted in forested areas. <sup>6, 10</sup>
Plant characteristics	This species is a perennial that grows up to about 4 feet in height. The rootstock is a green-yellow-ish color that is around 2-4 cm wide. Their flowers are white and bloom in July, eventually senescing in August. Also, they possess both the female and male reproductive structures to be considered perfect flower structures.

They are usually pollinated by bees or other pollinators.<sup>4,10</sup>



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**PROPAGATION DETAILS: FROM SEED**

Ecotype	Not applicable.
Propagation Goal	Plants.
Propagation Method	From the same genus, <i>Cicuta maculata var. victorinii</i> was noted to best be produced through seed production. <sup>4</sup> <ul style="list-style-type: none"> <li>- However it has been noted that this species is poisonous and needs necessary caution when handling.</li> </ul>
Product Type	Plug.
Stock Type	
Time to Grow	Similarly, <i>Cicuta maculata var. victorinii</i> takes around 2 years to flower. However, the process for out planting would most likely be viable within the year of first leaf appearances. Since these species require prolonged cold temperatures to flower. <sup>4</sup>
Target Specifications	Although there is not much information, the <i>Cicuta maculata var. victorinii</i> forms a small rosette after germination indicating the growth of the plant for at least the first year. <sup>4</sup>
Propagule Collection Instructions	Not much information is provided. However, considering they flower, most likely seed production is taken from the flowering structures.

Propagule Processing/Propagule Characteristics	Although not any specific information on the species, within the same genus <i>Cicuta maculata</i> var. <i>victorinii</i> has been found to germinate under a period of cold temperatures. This is typically from 6 to 8 weeks at temperatures around 40°F. Also, seeds that are over two years old are most likely not successful. <sup>4,9</sup>
Pre-Planting Propagule Treatments	Seeds are suggested to be planted within a cold frame during spring or autumnal seasons to efficiently capture the heat during colder, winter months. <sup>8</sup>
Growing Area Preparation / Annual Practices for Perennial Crops	If your seed is sufficient, you can plant outside during the autumnal season. Although there is not much information on the exact type of soil, similar species such as <i>Cicuta maculata</i> are noted to do best in moist and sometimes wet medias. When they're established, they prefer loamy/sand soil that can retain high moisture. Also, full to partial sun exposure is necessary. <sup>3, 6, 9</sup>
Establishment Phase Details	Not much information on the establishment details.
Length of Establishment Phase	Similar species like <i>Cicuta maculata</i> seeds usually germinate within 1-4 weeks after sowed. It is good to note that their germination rates may be delayed even under prime conditions. After stratifying the seeds, they can be moved to areas and temperatures around 60-70°F for germination. <sup>9</sup>
Active Growth Phase	After germination occurs, they are recommended to have around full sun for 6 or more hours and partial shade for 2-6 hours out of the day. <sup>6</sup> Once they are large enough to handle, they can be placed into individual pots for planting out. If planting in a permanent location, it is best to proceed in the summertime. <sup>8</sup>
Length of Active Growth Phase	No information found other than it is a perennial that has similar counterparts that bloom during the summer months, until September
Hardening Phase	No information was found.
Length of Hardening Phase	No information was found.
Harvesting, Storage and Shipping	No information was found.
Length of Storage	No information was found about the length of storage.
Guidelines for Outplanting / Performance on Typical Sites	Plant in well-draining mediums that are mildly acidic. Preferencing full sun but can grow in partial shade woodland areas. <sup>3</sup> Since this plant is naturally occurring in wetlands, it can be hard to completely propagate and repot. However, if grown in a suitable environment, the plant

	would need lots of wet medium to reflect its natural habitat. <sup>11</sup>
Other Comments	<ul style="list-style-type: none"> <li>- Vegetative propagation isn't recommended since this plant is highly poisonous especially in the roots (where division would take place)<sup>4</sup></li> <li>- Caution when handling a plant of this species</li> </ul>
<b>INFORMATION SOURCES</b>	
References	Sources 1-10 below.
Other Sources Consulted	Source 11 below.
Protocol Author	Micah Rogers
Date Protocol Created or Updated	05/13/26

- [1] USDA. (n.d.). *Cicuta virosa* L. U.S. Department of Agriculture. <https://plants.sc.egov.usda.gov/plant-profile/civi5>
- [2] LADY BIRD JOHNSON WILDFLOWER CENTER. (n.d.). *Cicuta virosa*. Plant Database. The university of Texas in Austin. [https://www.wildflower.org/plants/result.php?id\\_plant=CIVI5](https://www.wildflower.org/plants/result.php?id_plant=CIVI5)
- [3] Plants for a future. (n.d.). *Cicuta virosa* - L. Plants for a future. [https://pfaf.org/user/Plant.aspx?LatinName=Cicuta\\_virosa](https://pfaf.org/user/Plant.aspx?LatinName=Cicuta_virosa)
- [4] Bennett, B., Brunton, D., Leaman, D., Pellerin, S. (April, 2023). *COSEWIC Assessment and Status Report on the Victorin's Water-hemlock (Cicuta maculata var. victorinii) in Canada*. Committee on the Status of Endangered Wildlife in Canada (COSEWIC). <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/victorins-water-hemlock-2022.html#toc41>
- [5] Florida wildflower foundation. (n.d.). *Spotted water hemlock*. Florida wildflower foundation. <https://www.flawildflowers.org/flower-friday-cicuta-maculata/>
- [6] North Carolina Extension Gardener Plant Toolbox. (n.d.). *Cicuta maculata*. NC State Extension. <https://plants.ces.ncsu.edu/plants/cicuta-maculata/>
- [7] USDA. (June, 2018). *Water hemlock (Cicuta douglasii)*. Poisonous Plant Research: Logan, UT. <https://www.ars.usda.gov/pacific-west-area/logan-ut/poisonous-plant-research/docs/water-hemlock-cicuta-douglasii/>
- [8] Fern, Ken. (n.d.). *Cicuta virosa*. Temperate Plants Database. <https://temperate.theferns.info/plant/Cicuta+virosa>
- [9] The garden of set. (n.d.). *Cicuta maculata Seeds - Water Hemlock*. The Garden of Set. <https://thegardenofset.com/products/cicuta-maculata-50-seeds-water-hemlock?variant=45633129840897>
- [10] eFloras. (n.d.). *Cicuta virosa* Linn. Chinese Plant Names. [http://www.efloras.org/florataxon.aspx?flora\\_id=3&taxon\\_id=200015491](http://www.efloras.org/florataxon.aspx?flora_id=3&taxon_id=200015491)
- [11] One. (n.d.). *Cicuta virosa*. Earth One. [https://earthone.io/plant/cicuta%20virosa?srsId=AfmBOooOglhV\\_rE9qjb98XLqDEerQlmP8lX0K9d1O-fWYwaB2rhKWywm](https://earthone.io/plant/cicuta%20virosa?srsId=AfmBOooOglhV_rE9qjb98XLqDEerQlmP8lX0K9d1O-fWYwaB2rhKWywm)