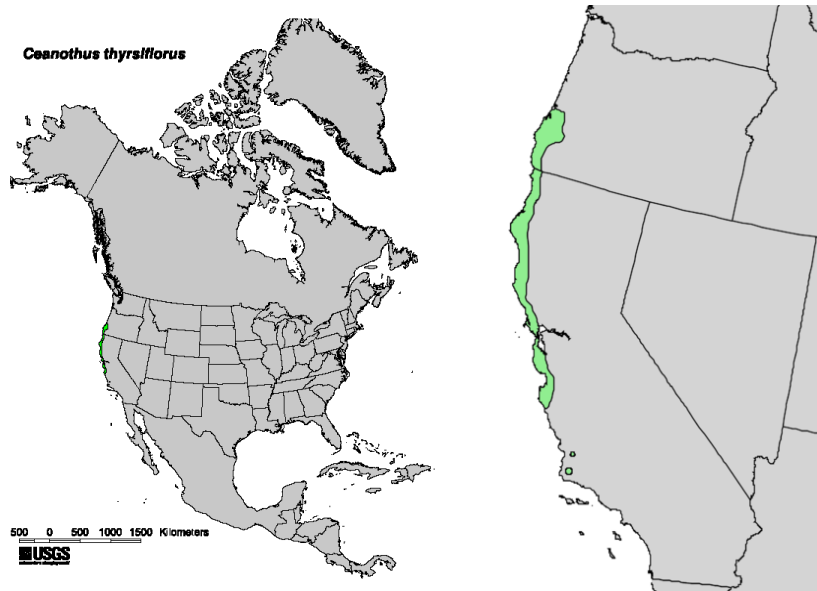


**Plant Propagation Protocol for [*Ceanothus thyrsiflorus*]**

ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocolsCETH.pdf>



Source: <http://esp.cr.usgs.gov>

**TAXONOMY**

<b>Plant Family</b>	
Scientific Name	Rhamnaceae
Common Name	Buckthorn Family
<b>Species Scientific Name</b>	
Scientific Name	<i>Ceanothus thyrsiflorus</i> Eschsch.
Varieties/Sub-species	<p><b>Groundcover Ceanothus:</b></p> <ul style="list-style-type: none"> <li>- Centennial Wild Lilac Ceanothus 'Centennial'</li> <li>- Point Reyes Mountain Lilac Ceanothus gloriosus</li> <li>- Diamond Heights Ceanothus</li> <li>- Ceanothus griseus horizontalis 'Diamond Heights'</li> </ul> <p><b>Ceanothus Shrubs:</b></p> <ul style="list-style-type: none"> <li>- Born Again Wild Lilac: Ceanothus thyrsiflorus 'Born Again'</li> <li>- Dark Star Wild Lilac: Ceanothus thyrsiflorus 'Dark Star'</li> <li>- Julia Phelps Mountain Lilac Ceanothus thyrsiflorus 'Julia Phelps'</li> <li>- Tuxedo Wild Lilac: Ceanothus 'Tuxedo'</li> <li>- Vandenburg Santa Barbara Ceanothus: Ceanothus impressus 'Vandenburg'</li> <li>- Victoria Wild Lilac: Ceanothus impressus 'Victoria'</li> </ul>

Cultivar	
Common Synonym(s)	<ul style="list-style-type: none"> <li>- <i>Ceanothus thyrsiflorus</i> Eschsch. <i>repens</i></li> <li>- <i>Ceanothus thyrsiflorus</i></li> <li>- CETHR</li> <li>- CETH</li> <li>- CEATHY</li> </ul>
Common Name(s)	<ul style="list-style-type: none"> <li>- Blueblossom</li> <li>- Bluebrush</li> <li>- blue blossom ceanothus</li> <li>- California Wild Lilac</li> <li>- Wild Lilac</li> <li>- Mountain Lilac</li> </ul>
Species Code (as per USDA Plants database)	- CETH
<b>GENERAL INFORMATION</b>	
Geographical range	<ul style="list-style-type: none"> <li>- From Canada, south to Mexico &amp; Guatemala</li> <li>- The West Coast from British Columbia</li> <li>- Some in the Rocky Mountains &amp; eastern US.</li> <li>- About 30 species are from California &amp; some grow in southern, and SW Oregon.</li> <li>- Refer to maps above for distribution in North America.</li> </ul>
Ecological distribution	Coastal wooded slopes & canyons below 2000 ft
Climate and elevation range	<ul style="list-style-type: none"> <li>- A large, sometimes tree-like, shrub from 3-18 ft.</li> <li>- Sub-Species Elevation Range: 5-20' (Class of 12-36 ft)</li> </ul>
Local habitat and abundance	Ideal habitat has temperatures that are low enough in summer and mild enough in winter to support this plant. (BC, CA; OR, U.S., CA, U.S.)
Plant strategy type / successional stage	<ul style="list-style-type: none"> <li>- Fast growing.</li> <li>- Does not tolerate temperatures below 15 degrees.</li> <li>- Full sun to part shade - hardiness varies - most are Zone 7-8, 0-20f</li> <li>- The plant adapts to a wide range of soil types, but prefers to be dry or have excellent drainage in summer. Plants in very rich garden soil grow fast but are shorter lived.</li> <li>- Limiting summer water for plants growing in the ground (opposed to container-grown plants) &amp; limiting fertilizer will help.</li> </ul>

Plant characteristics	<ul style="list-style-type: none"> <li>- Around 50 species of evergreen &amp; deciduous shrubs &amp; small trees.</li> <li>- Small flowers in clusters are often scented and attract bees. Flowers are white, pink or several shades of blue, and come in mid spring.</li> <li>- Three-lobed seed capsules follow.</li> <li>- Leaves are small with serrated edges and can be crinkled or holly-shaped. They are mostly green, with some varieties having gold or white variegation and others tinged purple.</li> <li>- All Ceanothus are nitrogen fixing plants &amp; improve soils where they are grown. In the wild they're often the first plants to grow after a fire and they fill in quickly, but are often short-lived (5-20 years).</li> <li>- Short life-span.</li> </ul>
<b>PROPAGATION DETAILS</b>	
Ecotype	Marin County, California
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	Deepot 16
Time to Grow	<ul style="list-style-type: none"> <li>- Seeds are collected between June 3rd and June 20th.</li> <li>- Seeds are sown on July 1<sup>st</sup></li> <li>- Seeds germinate 40 days after sowing</li> <li>- Seedlings are transplanted 40 days after germination</li> </ul>
Target Specifications	Height: N/A Caliper: N/A Root System: Firm plug in container
Propagule Collection Instructions	Seed is very dark brown, almost black at maturity. Seeds/gram: 77
Propagule Processing/Propagule Characteristics	Seed Cleaning: Mature hulls are separated from seed by rolling over with a rolling pin. Seed fill varies from year to year, so it is important to check for seeds first. Storage Conditions: Seeds are kept dry and stored in a refrigerator.

Pre-Planting Propagule Treatments	Seeds are scarified in a hot water bath for 20 minutes and then soaked for 48 hours. Heat water to a boil, place seeds in water and immediately remove from heat source Add cool water after 20 seconds. Seeds are placed in cold stratification for 84 days. Many seeds sprout after 12 weeks in stratification.
Growing Area Preparation / Annual Practices for Perennial Crops	Shade house. Sowing Method: Direct Seeding. 2 seeds are sown per 2"x7" tubes (Deepot 16) container containing standard potting mix of peat moss, fir bark, perlite, and sand. Seeds are mixed with media to sow and are covered 2 times the depth to diameter of seed. Containers are watered in with an automatic irrigation/mist system. It is very important not to overwater seeds. Seeds are sown on July 1st. % Germination:59%
Establishment Phase Details	Seeds germinate 40 days after sowing. Seedlings are transplanted 40 days after germination to individual containers 2"x7" tubes (Deepot 16) containing standard potting mix of peat moss, fir bark, perlite, and sand. Transplant Survival averages 50%.
Length of Establishment Phase	2.5 months
Active Growth Phase	Do not over water seedlings.
Length of Active Growth Phase	
Hardening Phase	
Length of Hardening Phase	
Harvesting, Storage and Shipping	
Length of Storage	
Guidelines for Outplanting / Performance on Typical Sites	
Other Comments	
<b>INFORMATION SOURCES</b>	
References	<ul style="list-style-type: none"> <li>- <a href="http://esp.cr.usgs.gov/data/little/">http://esp.cr.usgs.gov/data/little/</a></li> <li>- <a href="http://portlandnursery.com/plants/shrubs-vines/ceanothus.shtml">http://portlandnursery.com/plants/shrubs-vines/ceanothus.shtml</a></li> <li>- <a href="http://plants.usda.gov/core/profile?symbol=CETH">http://plants.usda.gov/core/profile?symbol=CETH</a></li> <li>- <a href="http://www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Ceanothus+thyriflorus">http://www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Ceanothus+thyriflorus</a></li> <li>- <a href="http://www.wildflower.org/plants/result.php?id_plant=CETH">http://www.wildflower.org/plants/result.php?id_plant=CETH</a></li> </ul>

	<ul style="list-style-type: none"> <li>- Young, Betty 2001. Propagation protocol for production of container <i>Ceanothus thyrsiflorus</i> Eschsch. plants (Deepot 16); , San Francisco, California. In: Native Plant Network. URL: <a href="http://www.nativeplantnetwork.org">http://www.nativeplantnetwork.org</a> (accessed 26 April 2015). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.</li> </ul>
Other Sources Consulted	<ul style="list-style-type: none"> <li>- <a href="http://horticulture.oregonstate.edu/content/ceanothus-evaluation-landscapes-western-oregon">http://horticulture.oregonstate.edu/content/ceanothus-evaluation-landscapes-western-oregon</a></li> <li>- A California Flora and Supplement, Munz, P., University of California Press, Berkeley and London, 1973.</li> <li>- <a href="http://tmousecmouse.blogspot.com/2010/07/preparing-to-prepare-to-prepare.html">http://tmousecmouse.blogspot.com/2010/07/preparing-to-prepare-to-prepare.html</a></li> <li>- <a href="https://books.google.com/books?id=CP7c7vH1ikoC&amp;pg=PT156&amp;dq=ceanothus+thyrsiflorus+growth&amp;hl=en&amp;sa=X&amp;ei=sds9VefEOtTcoAT4yoGwDQ&amp;ved=0CFUQ6AEwCQ#v=onepage&amp;q=ceanothus%20thyrsiflorus%20growth&amp;f=false">https://books.google.com/books?id=CP7c7vH1ikoC&amp;pg=PT156&amp;dq=ceanothus+thyrsiflorus+growth&amp;hl=en&amp;sa=X&amp;ei=sds9VefEOtTcoAT4yoGwDQ&amp;ved=0CFUQ6AEwCQ#v=onepage&amp;q=ceanothus%20thyrsiflorus%20growth&amp;f=false</a></li> </ul>
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