Plant Propagation Protocol for *[Agastache cusickii]*
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/*[2022]*/*[AGCU.pdf]*


[13]

TAXONOMY	
Plant Family	
Scientific Name	Lamiaceae
Common Name	Mint or sage family
Species Scientific Name	
Scientific Name	*Agastache cusickii* Genus: Agastache Species: cusickii Authority: Heller *Agastache cusickii* Heller
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	*Lophanthus cusickii* Greenman (see citation)
Common Name(s)	Cusick's giant hyssop, Giant hyssop, Horse-mint, Cusick horse-mint
Species Code (as per USDA Plants database)	AGCU
GENERAL INFORMATION	
Geographical range	*A. cusickii* is native to the Pacific Northwest, specifically the mountains of southeast Oregon, Montana, Nevada and central Idaho. This species is not native to Washington.[1]

	In Oregon, this species is found in Harney and Malheur counties.[2] In Montana, in the Tendoy Mountains is the only. known location where this species exists.[3]
Ecological distribution	*A. cusickii* is found on dry, rocky sites, sage brush, alpine ecosystems and limestone talus.[1]  [12]
Climate and elevation range	Mid to high elevations Drought tolerant, enjoy full sun.[4]
Local habitat and abundance	At mid to high elevation sites, *A. cusickii* is commonly found with *Pinus flexilis.* In Oregon *A. cusickii* may be associated with *Juniperus occidentalis* and *Populus tremuloides* or high-elevation sage brushes.[5]
Plant strategy type / successional stage	Extremely tolerant to drought.[4]
Plant characteristics	*A. cusickii* is an aromatic herbaceous perennial forb with numerous woody stems and generates spiky pinkish flowers from June to August.[2] Growing into an erect height of 16-20 inches and 18-24 inches in diameter.[6] Selected for longevity and compactness.[7] Grown best in moist, well-drained soil of sand or loam with an acidic pH. Best positioned in areas of full sun.[4]
PROPAGATION DETAILS	

Ecotype	Unknown information on *Agastache cusickii* in particular. *Agastache urticifolia,* a more common northernly distributed hyssop in the same family as *cusickii,* is used for this propagation method report. Empirical seed zones unknown.[8] Moses Lake, WA.[8] Pullman, WA[8]
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	10 inch cubic conetainer[9]
Time to Grow	4 months
Target Specifications	2-3 feet [10]
Propagule Collection Instructions	Seed harvesting is optimal in the summer months went the flowers are dry and the seeds are hard.[8]
Propagule Processing/Propagule Characteristics	Seeding rate: 1 lb/ac.[10]
Pre-Planting Propagule Treatments	Seeds can be cleaned by hand or machine cleaning, air column separator. Seeds require no pretreatment. Needs to be stored in a cool, dry short-term storage as soon as possible away from rodents.[8]
Growing Area Preparation / Annual Practices for Perennial Crops	Sunshine #4 potting mix was used in 10-inch conetainers in an experiment by PMC Pullman. A thin layer of pea gravel was added on top to prevent seeds from floating.[8]
Establishment Phase Details	Plants were grown in a greenhouse setting. In the Aberdeen study, 5 to 25 seeds were planted in conetainers with #4 potting mix. The temperature in the greenhouse was left around 70º F and were watered for 20 min a day by irrigation.[8]
Length of Establishment Phase	Seedlings emerge within 1 to 2 weeks of seeding in 4-inch conetainers.[11]
Active Growth Phase	Conetainers were watered deeply every other day. Complete fertilizer with micronutrients was used once a week.[8]
Length of Active Growth Phase	8 to 10 weeks according to the study done at PMC Pullman.[8] 4 months according to a study done at Aberdeen PMC.[8]
Hardening Phase	Plants were moved to a cold frame in March and April and watered every other day on cool days and every day during hot temperatures. At Aberdeen PMC, seedlings were hardened for one week with 60-minutes of watering by irrigation.[8]
Length of Hardening Phase	1 week.[8, 9]
Harvesting, Storage and Shipping	In a refrigerated truck at 50º F for 2 days.[8]
Length of Storage	2 days in Aberdeen study.[8]

Guidelines for Outplanting / Performance on Typical Sites	Must be planted in full sun and may not flower as well in partial shade. At BFI Native Seeds, outplanting of greenhouse grown seedlings into a 0.1-to-0.25-acre field.[11] Seedlings started in the greenhouse in winter are typically ready for outplanting the following fall or winter.[8]
Other Comments	Monitoring program was initiated in 1993 in the Tendoy Mountains of Montana to ensure there is no habitat loss for *A. cusickii,* which was in danger due to human activity at the time.[3] In climates where the annual rainfall exceeds normal conditions for this species, it may grow as an annual instead of a perennial.[8]
INFORMATION SOURCES	
References	See Below
Other Sources Consulted	See Below
Protocol Author	Karinna Gensert
Date Protocol Created or Updated	05/2/2022

References:

1. Agastache cusickii (Greenm.) A. Heller. USDA plants database. https://plants.sc.egov.usda.gov/home/plantProfile?symbol=AGCU. Accessed May 1, 2022.
2. Meinke RJ. *Threatened and Endangered Vascular Plants of Oregon: An Illustrated Guide*. Portland, Or., oregon: U.S. Fish and Wildlife Service, Office of Endangered Species, Region 1; 1982.
3. Vanderhorst JP, Program. MNH, States. U. Monitoring of Agastache cusickii in the Tendoy Mountains of southwestern Montana. 1993 - Monitoring of Agastache Cusickii in the Tendoy Mountains of southwestern Montana. https://www.biodiversitylibrary.org/item/61638#page/6/mode/1up. Published January 1, 1993. Accessed May 3, 2022.
4. Hayloft. https://hayloft.co.uk/growingagastache. Accessed May 1, 2022.
5. Index of Species Information. Agastache cusickii. https://www.fs.fed.us/database/feis/plants/forb/agacus/all.html. Accessed April 30, 2022.
6. Cusick's giant hyssop. Native Roots LLC. https://www.native-roots.net/product/cusicks giant-hyssop/. Published April 8, 2018. Accessed April 30, 2022.
7. Agastache cusickii . Native Roots LLC. https://native-roots.net/wp content/uploads/2017/08/Agastache_cusickii.pdf. Accessed April 30, 2022.
8. Void. Western Forbs: Biology, ecology, and use in restoration: Agastache urticifolia . Great Basin Fire Science Exchange. https://greatbasinfirescience.org/western-forbs restoration/. Published September 19, 2018. Accessed May 3, 2022.

9. Vanderhorst JP, Program. MNH, States. U. Monitoring of Agastache cusickii in the Tendoy Mountains of southwestern Montana. 1993 - Monitoring of Agastache Cusickii in the Tendoy Mountains of southwestern Montana. https://www.biodiversitylibrary.org/item/61638#page/6/mode/1up. Published January 1, 1993. Accessed May 3, 2022.
10. Ogle D, Tilley D. Plants for pollinators in the Intermountain West - nrcs.usda.gov. Plants for Pollinators in the Intermountain West . https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/idpmctn1343.pdf. Published March 2019. Accessed May 4, 2022.
11. Success stories. BFI Native Seeds. http://www.bfinativeseeds.com/success.php. Accessed May 3, 2022.
12. Sidonie. Lamiaceae Oregon Natives (mint family). nwnativeplantslist. https://nwnativeplantslist.wordpress.com/2015/05/27/lamiaceae-oregon-natives-mintyfamily/. Published May 29, 2015. Accessed May 3, 2022.
13. Plantfiles pictures: Agastache species, Cusick's horse-mint, anise hyssop (agastache cusickii) by ally_ut. Dave's Garden. https://davesgarden.com/guides/pf/showimage/195828/#b. Accessed April 30, 2022.

Referenced but not helpful

1. Great Basin Native Plant Selection. Great Basin Native Plant Selection and Increase Project 2009 Progress Report . https://www.fs.fed.us/rm/boise/research/shrub/projects/documents/2009_ProgressReport.pdf. Published April 2010. Accessed May 3, 2022.