Plant Propagation Protocol for *Allium lemmonii*
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/*2024*/*ALLE3.pdf*

TAXONOMY	
Plant Family	
Scientific Name	*Amaryllidaceae*[5]
Common Name	Amaryillis[5]
Species Scientific Name	
Scientific Name	*Allium lemmonii* S. Watson[1]
Varieties	N/A
Sub-species	N/A
Cultivar	
Common Synonym(s)	*Allium anceps* var. *lemmonii* (S.Watson) Jeps. *Allium incisum* A.Nelson & J.F.Macbr. *Allium scissum* A.Nelson & J.F.Macbr.[3]
Common Name(s)	Lemmon's Onion[1]
Species Code (as per USDA Plants database)	ALLE3[1]
GENERAL INFORMATION	
Geographical range	Native to western US (in the Great Basin of Utah, Nevada, Oregon, Idaho, and northern/eastern California)[1]
Ecological distribution	Arid west and western valley, coast, mountain areas[2]
Climate and elevation range	1200-1900 m, favors clay soils [1]
Local habitat and abundance	Relative to Allium falcifolium which relies on and is found near oak trees.[4] Is found in shady forests, meadows, steppes, and deserts.[5] Prefers partly-shady areas with slow draining (clayey) soils.[1]
Plant strategy type / successional stage	Drought tolerant, pollination through bees mostly, host plant to many different types of moths.[1]
Plant characteristics	Perennial forb/herb.[2] Short flattened stem, with a cluster of 10-40 white to pink flowers.[1]
PROPAGATION DETAILS	
Ecotype	Seed collected from The Nature Conservancy's Dye Creek and Vina Plains Preserves in Tehama County, California[6]
Propagation Goal	Bulbs[6]
Propagation Method	Seed[6]
Product Type	Container (plug)[6]
Stock Type	Potted nursery stock[6]

Time to Grow	12 weeks[6]
Target Specifications	First year bulb, typically ranging from 2-5 mm in diameter[6]
Propagule Collection Instructions	Seed may be collected from dry flower heads and cleaned from the bracts.[6] Largely hand collection as the desired species doesn't grow in pure stands. A simple seed stripper can be a valuable tool in collection.[8]
Propagule Processing/Propagule Characteristics	Seed may be collected from May through June or early July. Seed can be retained on the heads well into summer, depending on the year. ~450-650 seeds per gram.[6]
Pre-Planting Propagule Treatments	Seeds were placed into dry cold storage prior to sowing.[6]
Growing Area Preparation / Annual Practices for Perennial Crops	Seed was directly sown into 1.5" deep flats containing a potting mixture of approximately 1:1:1:2 sand:pumice:peat moss:fir bark mixture. Flats were placed in an outdoor cold frame from late-fall through spring.[6] Most seedlings were transplanted into various sized pots ranging from D-pots to 3x4" plastic containers using the same potting mixture. Plants should be allowed to go dormant by early summer. Growth from seed to dormant seedling follows the first fall rains through the spring-summer dry-down.[6]
Establishment Phase Details	Plants should be allowed to go dormant by early summer. Better growth may be obtained during the first year by seeding directly into larger containers rather than flats. Based on results of direct seeding in the field, better growth may be obtained by planting in native soil (e.g.loam) rather than potting soil.[6]
Length of Establishment Phase	3-4 weeks[6]
Active Growth Phase	Active growth was observed following the onset of autumn rains until drying down/dormancy occurred in late spring/early summer. The length of the active growth phase can be somewhat controlled with irrigation, but this species requires summer dormancy. The active growth phase can be somewhat extended by misting plants after the last spring rains, but care must be taken not to encourage root rot. Dormancy can be induced by letting pots dry out and then placing them in dry storage until the following fall rains.[6]

Length of Active Growth Phase	6-8 months[6]
Hardening Phase	None necessary, dormancy is sufficient[6]
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	Dormancy after the spring-summer dry down, can be placed in 60-70 degrees (F) dry storage.[6]
Length of Storage	3-5 months[6]
Guidelines for Outplanting / Performance on Typical Sites	Seedlings transplanted earlier in the year showed better results.[6] Should be cultivated on moist, sunny borders. Bulbs can be thinned two or three years later[7]
Other Comments	Seed sown directly in the field showed rates comparable too, or better than seed grown under controlled conditions in well-drained potting soils. Heavier native soils (loam) may provide better growing conditions when kept moist compared to well-drained potting soils whose moisture and temperature may fluctuate more readily.[6]
INFORMATION SOURCES	
References	1) "Lemmon's Onion, Allium Lemmonii." *Calscape*, California Native Plant Society, calscape.org/Allium-lemmonii-(). Accessed 30 Apr. 2024. 2) "Allium Lemmonii S. Watson." *USDA Plants Database*, United States Department of Agriculture, plants.usda.gov/home/plantProfile?symbol=ALLE3. Accessed 1 May 2024. 3) "The Plant List - A Working List for All Plant Species." *Allium Lemmonii S.Watson - The Plant List*, Missouri Botanical Gardens, www.theplantlist.org/tpl1.1/record/kew-295884. Accessed 1 May 2024. 4) *Allium Falcifolium*, Pacific Bulb Society, www.pacificbulbsociety.org/pbswiki/index.php/Allium_falcifolium. Accessed 1 May 2024. 5) Scobeyeva, Victoria A., et al. "Gene Loss, Pseudogenization in Plastomes of Genus Allium (Amaryllidaceae), and Putative Selection for Adaptation to Environmental Conditions." *Frontiers in Genetics*, Frontiers, 15 June 2021, www.frontiersin.org/journals/genetics/articles/10.3389/fgene.2021.674783/full. 6) Hunt, John W. "Protocol Information Allium (Amplectens)." *Native Plant Network —*

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Other Sources Consulted	9) Raven, Sarah. "How to Plant, Grow & Care for Alliums." *How to Plant, Grow, and Care for Alliums*, Sarah Raven, 8 Jan. 2021, www.sarahraven.com/articles/how-to-plant-and-grow-alliums. 10) Hartmann, Hudson, et al. *Plant Propagation: Principles and Practices*. Prentice Hall, 2002.
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