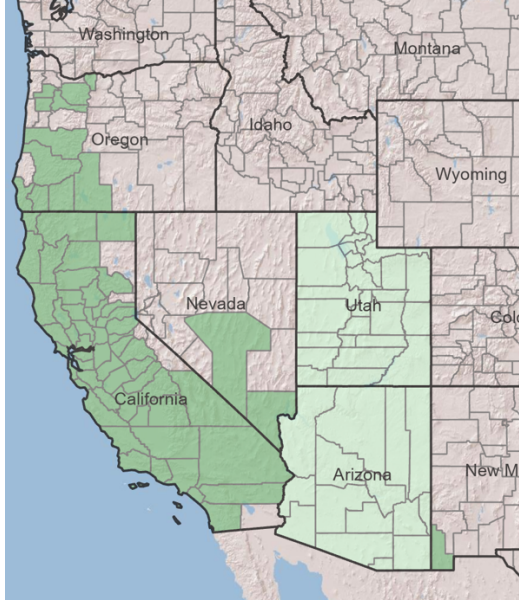


Plant Propagation Protocol for *Dipterostemon capitatus*
ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2023/DICA14.pdf>

TAXONOMY	
Plant Family	There is discrepancy in the reported family of <i>Dipterostemon capitatus</i> . Some report it to be in the Asparagaceae family ⁵ while others identify it as Amaryllidaceae ¹¹ . The USDA has the family as Liliaceae ⁹ , which will be used in this protocol as highest authority, but even then, others argue the most current research supports Themidaceae ¹⁰ as the correct taxonomy.
Scientific Name	Liliaceae Juss. ⁹
Common Name	Lily
Species Scientific Name	
Scientific Name	<i>Dipterostemon capitatus</i> (Benth.) Alph. Wood FKA <i>Dichelostemma capitatum</i> (Benth.) Alph. Wood ⁵
Varieties	
Sub-species	<i>Dipterostemon capitatus</i> subsp. <i>lacuna-vernalis</i> (L.W.Lenz) R.E.Preston ³ <i>Dipterostemon capitatus</i> subsp. <i>pauciflorus</i> (Torr.) R.E.Preston <i>Dipterostemon capitatus</i> subsp. <i>capitatus</i>
Cultivar	
Common Synonym(s)	<i>Brodiaea pulchella</i> (Salib.) Greene ⁴ <i>Dichelostemma capitatum</i> (Benth.) Alph. Wood <i>Milla capitata</i> (Benth.) Baker <i>Hookera capitata</i> (Benth.) Kuntze <i>Dichelostemma pulchellum</i> (Salis.) A. Heller <i>Dichelostemma pauciflorum</i> (Torrey) Standley ¹⁰ <i>Dipterostemon pauciflorus</i> (Torrey) Rydberg
Common Name(s)	Blue Dicks ² Wild Hyacinth Purplehead Brodiaea, Brodiea, Brodeia
Species Code (as per USDA Plants database)	DICA14 ⁹
GENERAL INFORMATION	

Geographical range	 <p>(“USDA Plants Database”)</p>
Ecological distribution	Desert scrub, interior chaparral, semidesert grasslands, and pinyon juniper grasslands ⁸
Climate and elevation range	0-2100 m elevation ¹ 2.9-133.4” annual precipitation ² 30.9 – 88.3°F annual temperature 0.09-38.38 g/m ³ humidity
Local habitat and abundance	Dry ridges and open plains, especially in clay heavy or loamy soils. ⁷
Plant strategy type / successional stage	Common post-wildfire successional ²
Plant characteristics	Perennial herby shrub with simple leaves, purple flowers, capsule type fruit, and underground combs. About 2 ft tall in full bloom ⁶
Seed Propagation from Betty Young ¹¹	
Ecotype	Marin County, California
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (Plug)
Stock Type	Treeband #5
Time to Grow	2 Years
Target Specifications	Height: N/A Caliper: N/A Root system: Firm plug in container
Propagule Collection Instructions	Seeds are collected between April 1st and September 1st. Mature inflorescences are brown. Seed is hard and black at maturity.

	After collection, sow fresh seed immediately or dry for 2 weeks and soak and stratify.
Propagule Processing/Propagule Characteristics	Seed Cleaning: Empty seeds from pods or rub pods over a screen. Storage Conditions: Seeds are kept dry and stored in a refrigerator.
Pre-Planting Propagule Treatments	Soak seeds in fresh water overnight. Cold stratify for 3 months or longer; until seeds begin to germinate.
Growing Area Preparation / Annual Practices for Perennial Crops	Fully Controlled Greenhouse. Sowing Method: Transplanting Germinants. 4 grams of seeds are sown per flat containing Sunshine Mix #4 Aggregate Plus (peat moss, perlite, major and minor nutrients, gypsum, and dolomitic lime). Seeds are mixed with media to sow and are surface sown. Flats are watered in with an automatic irrigation system. Seeds are sown on November 1st. % Germination: 50%
Establishment Phase Details	Seeds germinate 14 days after sowing. Seedlings are transplanted 14 days after germination to individual containers 5 inch (Treeband #5) containing standard potting mix of peat moss, fir bark, perlite, and sand. Transplant Survival averages 80%.
Length of Establishment Phase	1 Month
Active Growth Phase	After seedlings are established, place in the shadehouse for continued growth. After transplanting, the seedlings develop one true leaf that dies back as summer approaches. At this stage, it has formed a small bulb. Be careful not to overwater while the plant is in the dormant stage. The second winter, the plant will grow leaves and die back by summer. Fertilize every 3 months with Nutricote NPK (13-13-13).
INFORMATION SOURCES	
References	¹ Anderson, M. Kat. "Dichelostemma Capitatum Plant Guide." Plants.USDA.GOV, 5 June 6AD. ² "Blue Dicks, Dipterostemon Capitatus." Blue Dicks, Dipterostemon Capitatus, calscape.org/Dipterostemon-capitatus-(Calscape). ³ "Dipterostemon Capitatus (Benth.) Rydb. Plants of the World Online Kew Science." Dipterostemon Capitatus (Benth.) Rydb. Plants of the World Online Kew Science, powo.science.kew.org/taxon/urn:lsid:ipni.org:names:82063-2.

	<p>⁴“Dipterostemon Capitatus.” Dipterostemon Capitatus, ucjeps.berkeley.edu/eflora/eflora_display.php?tid=108599.</p> <p>⁵“Dipterostemon or Dichelostemma - Blue Dicks.” Dipterostemon or Dichelostemma - Blue Dicks, web.stanford.edu/~siegelr/flora/dipterostemon.html.</p> <p>⁶“Lady Bird Johnson Wildflower Center - the University of Texas at Austin.” Lady Bird Johnson Wildflower Center - the University of Texas at Austin, www.wildflower.org/plants/result.php?id_plant=DICA14.</p> <p>⁷University of Arizona. “Species Detail Forb.” Species Detail Forb, 13 Dec. 2022, cals.arizona.edu/yavapaiplants/SpeciesDetailForb.php?genus=Dichelostemma&species=capitatum.</p> <p>⁸University of California, Irvine. “Blue Dicks Dichelostemma Pulchellum Var.” 28 May 2024</p> <p>⁹“USDA Plants Database.” USDA Plants Database, plants.usda.gov/home/plantProfile?symbol=DICA14.</p> <p>¹⁰Western New Mexico University Department of Natural Sciences. “Vascular Plants of the Gila Wilderness.” <i>WNMU.edu</i>, wnmu.edu/academic/nspages/gilaflorea/dipterostemon_capitatus.html. Accessed 4 May 2023.</p> <p>¹¹Young, Betty. 2001. Propagation protocol for production of Container (plug) <i>Dichelostemma capitatum</i> (Benth.) Wood plants Treeband #5; San Francisco, California. In: Native Plant Network. URL: https://NativePlantNetwork.org (accessed 2023/05/04). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources.</p>
Other Sources Consulted	<p>Keator, G. 1992. Blue dicks brodiaea (<i>Dichelostemma capitatum</i>): A common but problematical species. <i>The Four Seasons</i> 9(2):31-42.</p> <p>"<i>Dichelostemma capitatum</i> (Benth.) Alph.Wood". The International Plant Names Index. Retrieved 2023-05-03.</p>
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