

Plant Propagation Protocol for *Nama densum*

ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/NADE2.pdf>



Image of *Nama densum*¹

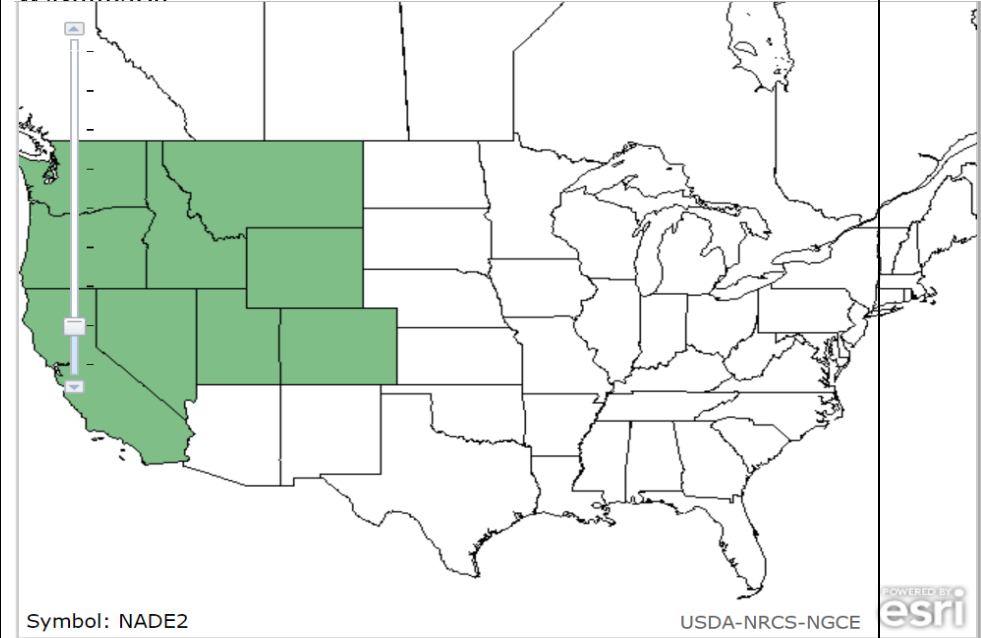
TAXONOMY	
Plant Family	
Scientific Name	<i>Nama densum</i> ²
Common Name	leafy nama ²
Species Scientific Name	
Scientific Name	<i>Nama densum</i> Lemmon ²
Varieties	<i>Nama densum</i> Lemmon var. <i>densum</i> ³ <i>Nama densum</i> Lemmon var. <i>parviflorum</i> (Greenm.) C.L. Hitchc. ⁴
Sub-species	
Cultivar	
Common Synonym(s)	
Common Name(s)	leafy nama, ⁵ matted nama ⁵

Species Code (as per USDA Plants database)	NADE2 ²
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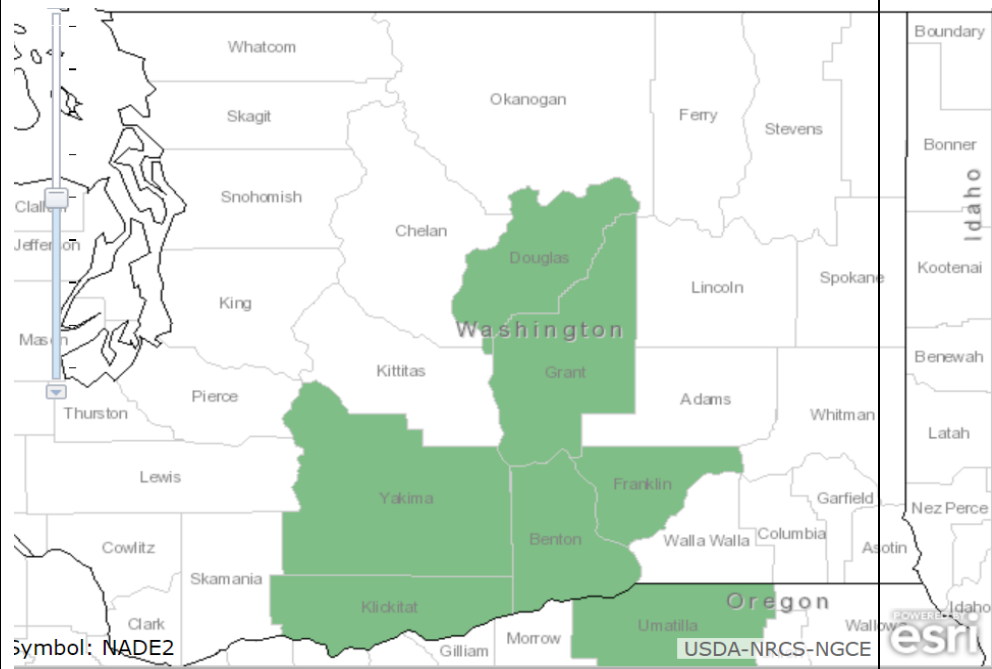
GENERAL INFORMATION

Geographical range

It can be found in California, Idaho, Nevada, Utah, Montana, and Oregon.² One can find this species within southeastern Washington.⁵



Geographical range of *Nama densum* in North America²



Geographical range of *Nama densum* in WA²

Ecological distribution

It can be observed in the following plant communities: Sagebrush scrub, Pinyon-Juniper woodland, yellow pine forest, red fir forest,

	and lodgepole forest. ⁶
Climate and elevation range	
Local habitat and abundance	One can generally find this species in dry, sandy places within deserts and foothills. ⁵ Locally, it is primarily found in Adams County, Franklin County, and Benton County, WA. ⁵ Commonly associated species include: <i>Chrysothamnus viscidiflorus</i> , <i>Gilia inconspicua</i> , <i>Aliciella leptomeria</i> , and <i>Streptanthella longirosris</i> . ⁷
Plant strategy type / successional stage	It does well in moderate levels of disturbance that create open space for seedling establishment and lower competition from large perennial species. ⁷
Plant characteristics	It is an annual forb characterized by a hairy overall exterior, alternate, oblanceolate leaves that grow 4 cm. long and 6 mm. wide, and solitary, terminal flowers that are funnel shaped and 2.5-5 mm. long. ⁵ It is dwarfed, prostrate, and taprooted ⁵ with globose capsules containing many seeds. ⁷
<p>PROPAGATION DETAILS (experimentally derived) for <i>Nama hispidum</i> A. Gray⁸ (due to extremely limited information on <i>Nama densum</i>)</p> <p>Background: Pendleton & Pendleton studied the germination response of <i>Nama hispidum</i> along with 20 other forb species from the grasslands of New Mexico—subjecting seeds to 1 of 3 treatments (no treatment, 3-wk stratification at 5 degrees Celsius, 3-wk warm-moist treatment at 30 degrees Celsius) in addition to alternate, incubatory temperature regimes for 6 weeks following treatment (10/20 degrees Celsius).</p>	
Ecotype	Seeds were collected from grasslands of central New Mexico that are characterized by Chihuahuan desert scrub and Plains-Mesa grasslands. ⁸ These grasslands are generally in moisture deficit most times of the year whereas in surplus during August, December and January. ⁸
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Propagules (seeds)
Stock Type	
Time to Grow	
Target Specifications	Seeds were considered germinated if the radicle extended 5 mm or showed signs of geotropic bending. ⁸
Propagule Collection Instructions	Seeds used in the experiment were collected during the spring and summer of 2006, 2008, and 2010—mostly from the Sevilleta National Wildlife Refuge. ⁸ However, some seeds were collected from grasslands in nearby towns. <i>N. hispidum</i> was collected from Belen in 2008. ⁸
Propagule Processing/Propagule Characteristics	2 to 4 replicates of 25 seeds or more from each species were used in the experiment. ⁸
Pre-Planting Propagule Treatments	Seeds were stored in a laboratory at room temperature to allow for after-ripening before the start of the experiment. ⁸

Growing Area Preparation / Annual Practices for Perennial Crops	Seeds were placed in 100 x 15 mm Petri dishes over 2 circles of blue blotter paper, saturated with tap water, and sealed in plastic bags. ⁸ Treatments and temperature regimes were applied accordingly. ⁸
Establishment Phase Details	Incubation chambers were set to 12 hr light/dark cycles in synchrony with changing temperatures. ⁸ Tap water was added to blotters as need. ⁸ Germination was checked thrice weekly. ⁸ <i>N. hispidum</i> was a part of Subgroup #4 that exhibited germination mainly during the warm-moist treatment (3 weeks) with minimal additional germination during the incubation period (6 weeks). ⁸
Length of Establishment Phase	This phase lasted 3-6 weeks in a lab setting. ⁸ <i>N. hispidum</i> is a winter annual, and such species typically germinate during the fall through spring. ⁸
Active Growth Phase	
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	<i>N. hispidum</i> germinated to 22% and primarily in the warm-moist treatment. ⁸
Other Comments	
INFORMATION SOURCES	
References	<ol style="list-style-type: none"> 1. Carr, G. D. (2018, May 15). [Photograph]. Burke Museum of Natural History and Culture, Seattle. http://biology.burke.washington.edu/herbarium/imagecollection.php?ID=2188 2. Plants Profile for Nama densum (leafy nama). (n.d.). Retrieved May 15, 2018, from https://plants.usda.gov/core/profile?symbol=NADE2 3. Plants Profile for Nama densum densum (leafy fiddleleaf). (n.d.). Retrieved May 15, 2018, from https://plants.usda.gov/core/profile?symbol=NADED2 4. Plants Profile for Nama densum parviflorum (leafy fiddleleaf). (n.d.). Retrieved May 15, 2018, from https://plants.usda.gov/core/profile?symbol=NADEP 5. Legler, B. (n.d.). Retrieved May 15, 2018, from http://biology.burke.washington.edu/herbarium/imagecollection.php?ID=2188 6. Nama densum. (n.d.). Retrieved May 15, 2018, from

	<p>http://www.cnplx.info/nplx/species?taxon=Nama+densum</p> <p>7. Nama — Nama densum. Montana Field Guide. Montana Natural Heritage Program. Retrieved May 16, 2018, from http://FieldGuide.mt.gov/speciesDetail.aspx?elcode=PDHYD0A040</p> <p>8. Pendleton, R.L & Pendleton B.K. (2014). Germination patterns of a suite of semiarid grassland forbs from central New Mexico. USDA Forest Service. Retrieved May 16, 2018, from https://www.fs.fed.us/rm/pubs_other/rmrs_2014_pendleton_r002.pdf</p>
Other Sources Consulted	
Protocol Author	Megan Burns
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