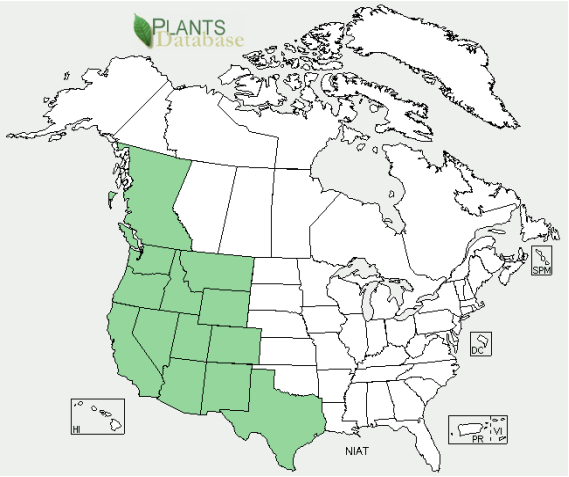
Plant Propagation Protocol for *Nicotiana attenuata*
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/NIAT.pdf

Distribution in North America



Distribution in Washington State

Source: USDA Plants Database[1]

TAXONOMY	
Plant Family	
Scientific Name	Solanaceae
Common Name	Nightshade family, potato family
Species Scientific Name	
Scientific Name	*Nicotiana attenuata* Torr. ex S. Watson
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	
Common Name(s)	Coyote tobacco
Species Code (as per USDA Plants database)	NIAT
GENERAL INFORMATION	
Geographical range	**USA** (AZ, CA, CO, ID, MY, NM, NV, OR, TX, UT, WA, WY), **CAN** (BC)[1] Grows in direct sun in dry habitats from British Columbia to Baja California, east to New Mexico, Colorado, and northern Idaho.[2] See above
Ecological distribution	Yellow Pine Forest, Red Fir Forest, Lodgepole Forest, Subalpine Forest, Foothill Woodland, Chaparral, Valley Grassland, Wetland-riparian[3]

Climate and elevation range	Elevation: 160 to 3390 meters. Annual precipitation: 8-35 inches. Wet season: 0-7 months. Temperature: 14- 94° F.[3]
Local habitat and abundance	Occurs in disturbed areas, dry sandy bottomlands, rocky washes, and other dry open places. Populations declining in Washington State.[7]
Plant strategy type / successional stage	Post-fire germination.[5] Readjusts metabolic and growth hormones to accommodate environment.[6]
Plant characteristics	Annual herb with white flowers.[2] Glandular-pubescent and 3-10 cm tall.[7]
PROPAGATION DETAILS	
Ecotype	
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	
Time to Grow	At least one month.[4]
Target Specifications	Plant at least 3 cm tall, leaves at least 1.5 cm long.[7]
Propagule Collection Instructions	
Propagule Processing/Propagule Characteristics	
Pre-Planting Propagule Treatments	Germination occurs at 30D/20N C alternating temperature cycle. Germination occurs in the presence of light.[4] Physiological dormancy broken with smoke induced germination.[5]
Growing Area Preparation / Annual Practices for Perennial Crops	Medium, coarse soil with a pH of 6.1-7 and a minimum depth of 56 cm. Maximum salinity: 1 mmhos/cm (non-saline). Maximum CaCO3: 3% (very low). Minimum water capacity: very high.[3] Grow in a container at least 1 inch wide.[4]
Establishment Phase Details	Germination occurs nine days after smoke exposure.[5]
Length of Establishment Phase	9 days.[5]
Active Growth Phase	Until about 60 days after germination.[8]
Length of Active Growth Phase	About 8 weeks.[8]
Hardening Phase	
Length of Hardening Phase	
Harvesting, Storage and Shipping	
Length of Storage	None needed.[8]
Guidelines for Outplanting / Performance on Typical Sites	Bloom period: May-October.[3] Plants typically bloom between 40-45 days after germination.[8]
Other Comments	Common pest: ‘Glassy-winged sharpshooter’

	Homalodisca vitripennis[3]
INFORMATION SOURCES	
References	See below
Protocol Author	Katherine Hartke
	05/20/2014

References

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[2]"NPIN: Native Plant Database." *Lady Bird Johnson Wildflower Center.* The University of Texas at Austin, 2014. Web. 14 May 2014. http://www.wildflower.org/plants/result.php?id_plant=NIAT

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Other sources consulted

[1]Wells, P. V. (1959). An ecological investigation of two desert tobaccos. Ecology 40, 626-644.

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[3]Baldwin, Ian T., Lynn Staszak-Kozinski, and Robert Davidson. "Smoke-derived Germination Cues for Postfire Annual,Nicotiana Attenuata Torr. Ex. Watson." *Journal of Chemical Ecology* 20.9 (1994): 2345-371. LinkSpringer.com. Kluwer Academic Publishers: Plenum Publishers, 01 Sept. 1994. Web. 19 May 2014. <http://link.springer.com/article/10.1007/BF02033207>.

[4]Hummel, G. M., M. Naumann, U. Schurr, and A. Walter." Root growth dynamics of *Nicotiana attenuata* seedlings are affected by simulated herbivore attack." *National Center for*

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