Plant Propagation Protocol for *Apocynum cannabinum* L.

ESRM 412 – Native Plant Production

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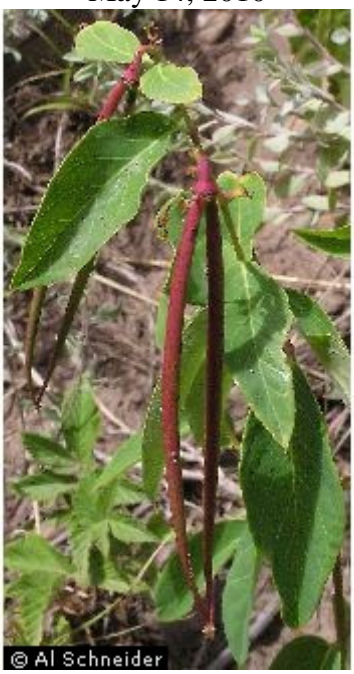
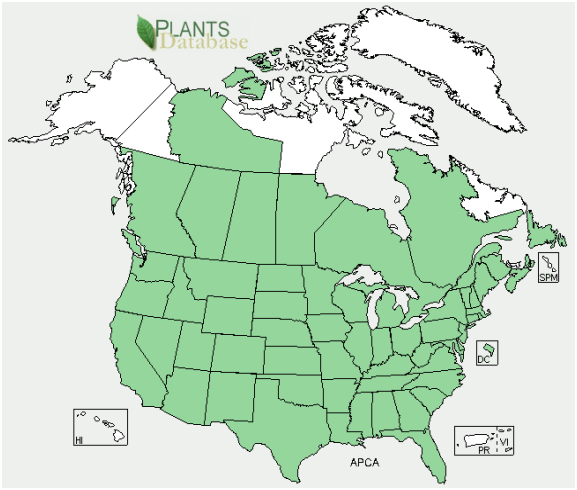


TAXONOMY	
Family Names	
Family Scientific Name:	Apocynaceae
Family Common Name:	Dogbane
Scientific Names	
Genus:	*Apocynum*
Species:	*cannabinum*
Species Authority:	L.
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s) (include full scientific names (e.g., *Elymus glaucus* Buckley), including variety or subspecies information)	*Apocynum hypericifolium* Aiton *Apocynum pubescens* Mitchell ex R. Br. *Apocynum sibiricum* Jacq. *Apocynum suksdorfii* Greene
Common Name(s):	Indian Hemp, Dogbane, Common Dogbane, Hemp Dogbane

Species Code:	APCA
GENERAL INFORMATION	
Geographical range:	Distribution is throughout the lower 48 United States and most of the Canadian provinces. Distribution maps for the state of WA were not yet available. North American Distribution:  http://plants.usda.gov/java/profile?symbol=APCA&mapType=large&photoID=apca_005_avp.jpg
Ecological distribution:	Found near borders of woods, paths, or clearings, riparian areas along streams, springs, and levees with moist soils. (USDA)
Climate and elevation range	Grows in temperate climates with an upper elevation range of 5,000 – 7,000 ft.(Calflora) (USDA)
Local habitat and abundance; may include commonly associated species	Can be found in or around roadsides; thickets; fields; lakeshores; waterways; and disturbed areas. Commonly found around the edges of farm fields and grazing pastures.
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	Early successional colonizer, in some areas considered a noxious weed that requires active management. (USDA) (Bradley)
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	A perennial, weedy, erect herb that can reach up to 6 ft in height. Leaves are entire margined, ovate to elliptic in shape, and arranged oppositely along the stem. Flowers are small white, occasionally greenish-white, and are produced in terminal clusters. The fruit consists of a pair of long narrow follicles.(Pojar) Reproduction mainly occurs vegetatively after colonization, through the production of a horizontal root from the initial tap root, but new colonies produced via wind dispersed seeds. (Bradley) (Cardina)
PROPAGATION DETAILS	
Ecotype:	Seeds were collected on land managed by the Bureau of Land Management in Chuchill County, Nevada, just west of the Stillwater Mountains, at an elevation of 5,000 ft.(Barner)
Propagation Goal:	Seeds
Propagation Methods:	Seed
Product Type:	Propagules (seeds, cuttings, poles, etc.)
Stock Type:	No information found for *Apocynum cannabinum* however, for *Apocynum*

	androsaemifolium referenced refers to a container (plug) stock type. (Schultz)
Time to Grow:	No information found
Target Specifications :	No information found
Propagule Collection:	.6 lbs of seed, hand-collected (Barner). No information provided as to when seeds were collected.
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	Seed lot processing begins with using a Westrup Model LA-H laboratory brush machine, with a #40 mantel, at a medium speed. Followed by an air-screen process that uses an office Clipper, with a top screen: 1/16 x 1/4 slot first then, 8 round and a bottom screen: 24 x 24 wire mesh, at a medium speed with low air. (Barner)
Pre-Planting Propagule Treatments:	No information for pre-planting treatments was found for *Apocynum cannabinum* however, the seeds of spreading dogbane, *Apocynum androsaemifolium,* exhibit physiological dormancy. To overcome this seeds were placed in cold moist stratification for 60 days with germination occurring between 18 to 21 C (Baskin). Stratification achieved by mixing seeds with an equal amount of vermiculite or moist perlite. Mixture is then placed into a sealable plastic bag and placed in a refrigerator for 30 days. (Schultz)
Growing Area Preparation / Annual Practices for Perennial Crops):	No information found for *Apocynum cannabinum* however, for *Apocynum androsaemifolium* the propagation environment is within a standard greenhouse with continuously running fans for air circulation. During the summer months vents were opened for cooling purposes. This species was found to grow best in 24 cell (2" diameter) 14"x8.5"x4" deep flats in a sterile generic plug and seedling soil mix that contains vermiculite and sphagnum peat moss. Thoroughly moisten the soil with water, mixing in the water with a trowel. To prevent loss of soil from the plug tray cells cover the holes in the bottom/sides with newspaper or cotton wads. Fill cells with damp soil press soil down with a spoon. Refill the cell plugs with soil to the top, this time not pressing it down. Water the soil in the plug cells again. Sow the seeds by hand at a rate of about 3 seeds in each cell. Cover the seeds with a thin amount of soil. Sow spreading dogbane seeds at all times of the year due to their unpredictable germination (Schultz).
Establishment Phase:	1-3 weeks (Barner) Soil is to be kept consistently damp with no artificial light to be used (Schultz)
Length of Establishment Phase:	No information found
Active Growth Phase:	No information found for *Apocynum cannabinum* however, for *Apocynum androsaemifolium* the soil does not need to be kept moist and no fertilizers are used. Trays are moved to a cooler section of the greenhouse. (Schultz)
Length of Active Growth Phase:	No information found
Hardening Phase:	No information found for *Apocynum cannabinum* however, for *Apocynum androsaemifolium* mature plants can be moved into a cold frame in early to late spring. Some sort of covering material should be present to prevent the scorching of plants by the sun. Plants can be left directly outside once any danger of frost has passed. The frequency of watering can also is decreased at this time. (Schultz)
Length of Hardening Phase:	No information found
Harvesting, Storage and Shipping (of seedlings):	Cold Storage, 33-38 Degrees Fahrenheit (Barner)

Length of Storage (of seedlings, between nursery and outplanting):	No information found for *Apocynum cannabinum* however, for *Apocynum androsaemifolium* germinates can be held in cold storage for up to three years (Baskin)
Guidelines for Outplanting / Performance on Typical Sites:	No information found
Other Comments:	Complete propagation information for *Apocynum cannabinum* has been hard to come by. Because of this I have referenced information on *Apocynum androsaemifolium*.
INFORMATION SOURCES	
References:	Barner, Jim (2009). *Propagation protocol for production of Apocynum cannabinum L. seeds*; USDA FS - R6 Bend Seed Extractory, Bend, Oregon. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 20 April 2010). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery. Baskin, Carol C.; Baskin, Jerry M. 2002. Propagation protocol for production of container *Apocynum androsaemifolium* L. plants; University of Kentucky, Lexington, Kentucky. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 13 May 2010). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery. Bradley, K. and E. Hagood, Jr. (2009). *Identification and Control of Hemp Dogbane (Apocynum cannabinum L.) in Virginia* (Report No. 450-140 Virginia Cooperative Extension) Retrieved from Virginia Cooperative Extension: http://pubs.ext.vt.edu/450/450-140/450-140.html Calflora: Information on California plants for education, research and conservation, based on data contributed by the Consortium of Calif. Herbaria and dozens of other public and private institutions and individuals. [web application]. 2010. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/ (Accessed: Apr 19, 2010). Cardina, J., Webster, T. (1999). *Apocynum cannabinum Seed Germination and Vegetative Shoot Emergence*. Weed Science,v 47, No.5(Sep. – Oct., 1999), 524-528 Accessed on 19 April 2010 from http://www.jstor.org/stable/4046105?origin=JSTOR-pdf Pojar, J. and A. MacKinnon (1994). *Plants of the Pacific Northwest Coast Washington, Oregon British Columbia & Alaska*. Forest Service of British Columbia and Lone Pine Press; Vancouver, BC Schultz, Jan; Beyer, Patty.; Williams, Julie. 2001. Propagation protocol for production of container *Apocynum androsaemifolium* L. plants; USDA FS - Hiawatha National Forest, Marquette, Michigan. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 13 May 2010). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery. USDA – NRCS Plant Profile online: "*Apocynum cannabinum*" Accessed 19 April 2010 from http://plants.usda.gov/java/profile?symbol=APCA&mapType=large&photoID=apca_005_avp.jpg USDA – NRCS Plant Guide online: "Indian Hemp Plant Guide" Accessed 20 April 2010 from http://plants.usda.gov/plantguide/pdf/cs_apca.pdf
Other Sources Consulted (but that contained no pertinent information) (full citations):	AOSA. Updated 2006. *Suggested purity and/or germination testing methods for species without AOSA Rules testing procedures*. Association of Official Seed Analysts, Stillwater, OK. Flora of North America Online: Accessed 19 April 2010 from: http://www.fna.org/
Protocol Author:	Jerry Krajna
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