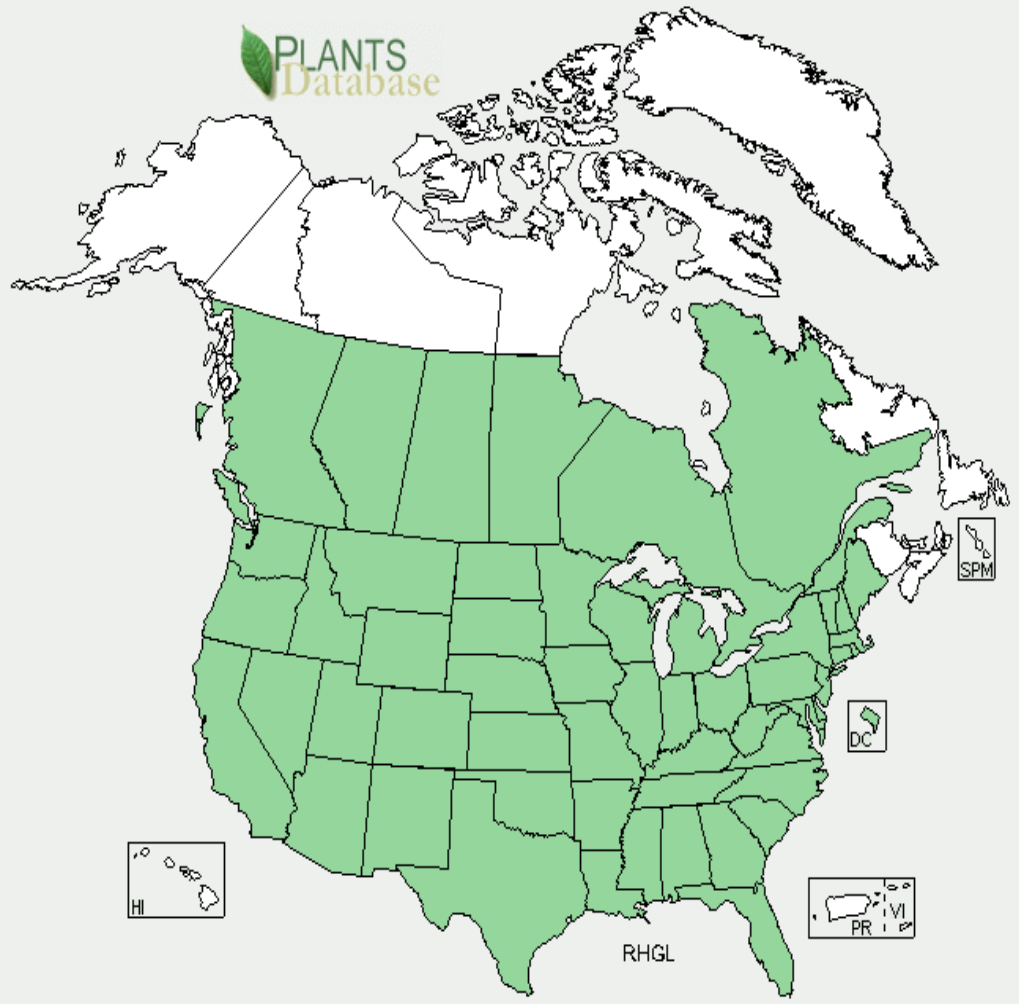
Plant Propagation Protocol for *Rhus glabra*

ESRM 412 – Native Plant Production

TAXONOMY	
Family Names	
Family Scientific Name:	Anacardiaceae
Family Common Name:	Sumac Family
Scientific Names	
Genus:	*Rhus* L.
Species:	*Rhus glabra* L.
Species Authority:	L.
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s)	*Rhus borealis* Greene, *Rhus calophylla* Greene, *Rhus glabra* L. var. *cismontana* (Greene) Cockerell, *Rhus glabra* L. var. *laciniata* Carriere, *Rhus glabra* L. var. *occidentalis* Torr.
Common Name(s):	Smooth Sumac
Species Code:	RHGL
GENERAL INFORMATION	
Geographical range:	Sumac is distributed throughout the U.S and Mexico (1). In Canada it extends from Lake Huron to central British Columbia (1). It is not found in California (1).

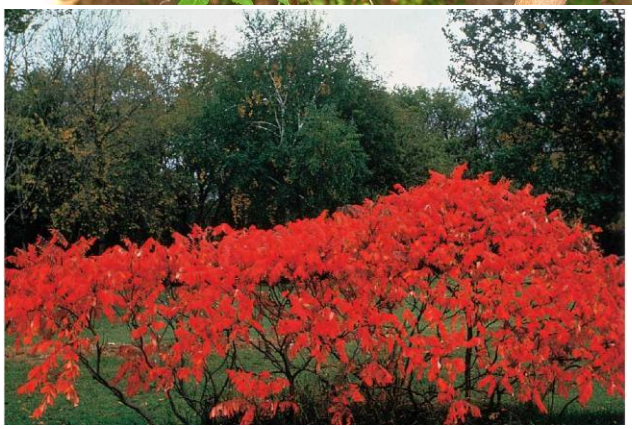
	
Ecological distribution:	*Rhus glabra* usually occurs near streams, woodland edges, prairies, canyons, and deserted farmlands (3). It is found in many different soil conditions from dry to moist and a verity of textures (3). It can grow in shallow or deep soil conditions (3).
Climate and elevation range	Arid, lower elevations, rocky canyons and washes (6).
Local habitat and abundance; may include commonly associated species	
Plant strategy	Colonizer
Plant characteristic	Shrub Perennial plant with deciduous leaf retention. It has an alternating pinnate leaf arrangement. Rhus glabra generally grows from 10-20 ft tall. It is a dioecious

	breeder with drupe fruit type. The fruit length is typically 1/8 in. and reddish brown in color (4). This species stabilizes soil for erosion prevention.
PROPAGATION DETAILS	
Ecotype:	Shenandoah National Park, George Washington Memorial Parkway (5)
Propagation Goal:	Plants
Propagation Method:	Seeds
Product Type:	Container plug (4).
Stock Type:	Container seedling (4).
Time to Grow:	1 year
Target Specifications:	"Stock Type: Bare root and container plants. Height: About 12 inches. Caliper: N/A. Root System: Container plants have firm root ball."(5)
Propagule Collection:	Flowers from May to July. Fruit ripens in September and October and can be picked by hand as soon as it is ripe or until late in the year (3).
Propagule Processing/Propagule Characteristic:	Seeds per kilogram: 52,910-277,780 (3).
Pre-Planting Propagule Treatments:	If seeds are collected early in the year they may need additional drying by spreading them out into thin layers. Dried clusters can be broken down by beating in canvas sacks then screen or fan to remove debris (3). Remove damaged seeds by placing in water; viable seeds will sink (3). Seeds can be stored in sealed containers at 0-5˚C for two to ten years (3).
Growing Area Preparation / Annual Practices for Perennial Crops:	Propagation Environment: Outdoor nursery beds. Seed Propagation Method: Pre-treated seeds hand-sown in rows. Container Type and Volume: Bare root plants may be transplanted into quart to gallon size containers, depending on planting needs. Growing Media: In containers, plants are grown in woody mix (3.8 cu ft. bale Sunshine #1, 4 cu. ft. of pine bark mulch, 20 oz. Nutricote and approximately 20 oz. endo-mycorrhizae) (5).
Establishment Phase :	Due to the hard seed coat, pretreatment is necessary. Seeds should be soaked from 1 to 3 hours in sulfuric acid. Then they should either be kept at a continuous 20˚C or at alternating temperatures of warm and cool. Constant light can also help. (3) "Sowing Date: October-November for field sowing. % Emergence and Date: Seedlings emerge the following spring after fall sowing. Sowing/Planting Technique: Seeds are dusted with fungicide and hand sown into rows (rows are 5 to 6 inches apart; seeds are sown approximately 1/4 inch apart). Endomycorrhizae are sprinkled over the seed before covering with about 3/4 inch of soil. The beds are then mulched with aged sawdust. Establishment Phase: Sawdust mulch is scraped back in spring prior to

	seedling emergence. Newly emerged seedlings are monitored closely for irrigation needs. Young seedlings are shaded as soon as they emerge with poly screening at 30%. Shade cloth remains over seedlings until mid-August" (5).
Length of Establishment Phase:	
Active Growth Phase:	"Because NPMC soil is a nutrient poor sandy loam, seedlings are fertilized from mid-April with a granular 10-10-10 once a week through early June. From mid-June through late July, the 10-10-10 is alternated with a granular urea every other week. From late July through late August the seedlings are fertilized with 10-10-10 every two weeks. Overhead irrigation is used after every fertilization. The rate of water applied is determined by soil moisture prior to irrigation" (5).
Length of Active Growth Phase:	
Hardening Phase :	"During mid- to late summer, fertilization is cut back to twice monthly. Beginning in September, irrigation is only used in a severe droughty situation."(5)
Length of Hardening Phase:	
Harvesting, Storage and Shipping:	"Harvest Date: Dormant bare root plants are harvested in early to mid-December. Total Time to Harvest: Generally, bare root plants are harvested 1 year after sowing. Container plants, depending on size, will require 1 to 2 additional seasons before they are field-ready. Storage Conditions: Bare root plants are bundled into groups of 25 (or whatever is manageable), and long roots are trimmed. Root trimmings are saved for vegetative propagation use. Bundles are placed into plastic bins; roots are covered with sawdust. Bins are placed into a cold storage room (40ºF) and watered as needed during the winter. Gallon size container plants are stored outside. Containers are laid on their side on weed barrier fabric, and covered with 2 layers of a micro foam insulating blanket. The blanket is secured over plants by threading a rope over the blanket between rebar anchors on either side of a block of plants. Seed storage: Seeds are stored dry in cloth bags or paper envelopes in seed cooler at 40ºF, 35% relative humidity."(5)
Length of Storage:	Three months (5).
Guidelines for Out planting / Performance on Typical Sites (e.g.,	

percent survival, height or diameter growth, elapsed time before flowering):	
Other Comments (including collection restrictions or guidelines, if available):	"Some sources recommend scarifying seed for 1 to 3 hours in sulfuric acid; we generally go with a shorter time in acid (30 minutes) to avoid damaging seed."(5)
INFORMATION SOURCES	
References (full citations):	1) Ross, Christopher. "Rhus glabra." (2002) Web. 10 Apr 2010. http://www.fs.fed.us/database/feis/plants/shrub/rhugla/all.html#GENERAL%20DISTRIBUTION 2) PLANTS Profile for Rhus glabra (Smooth sumac)| USDA PLANTS." *USDA PLANTS*. USDA NRCS.Web. 11 Apr 2010. http://plants.usda.gov/java/profile?symbol=RHGL 3) Rose, Robin, Chachulski, Caryn E.C., and Hasse, Diane L. *Propagation of Pacific Northwest Native Plants.* Corvallis, Oregon: Oregon State University Press, 1998. Print. 4) Houck, Morris J. "Rhus glabra." (2001) Web. 12 Apr 2010. http://nativeplants.for.uidaho.edu/Network/ViewProtocols.aspx?ProtocolID=502 5) Englert, John M. "Rhus glabra." (2001) Web. 12 Apr 2010. http://nativeplants.for.uidaho.edu/Network/ViewProtocols.aspx?ProtocolID=519 6) Robson, Kathleen A., Richter, Alice, and Filbert Marianne. *Encyclopedia of Northwest Native Plants for Gardens and Landscapes.* Portland, Oregon. Timber Press, 2008.
Other Sources Consulted (but that contained no pertinent information) (full	

citations):	
Protocol Author:	Melody Rosecrans
Date Protocol Created or Updated:	04/20/10

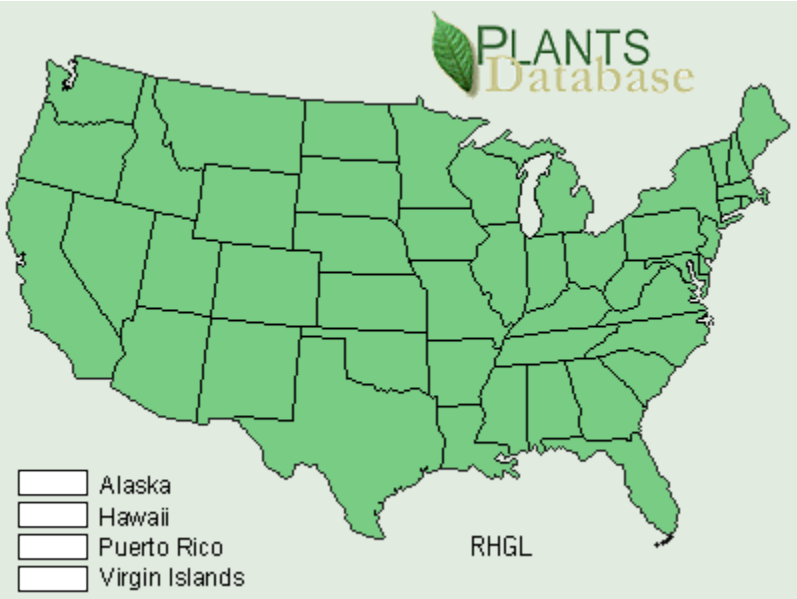


Species: Rhus glabra Other names: Dwarf Sumac, Mountain Sumac, Scarlet Sumac, Smooth Sumac, Upland Sumac, White Shoemake, Vinegar-tree, Red sumac

Native name: tant į t

Traditional uses: Used extensively by Native Americans for food and medicine. Young shoots and roots are peeled and eaten raw. The fruit is also eaten raw, cooked or made into a lemonade-like drink. The edible fruit is a large erect cluster of small bright red berries. The edible young shoots are gathered in spring, roots and berries in fall. Dried for later herb use. Believed by some Native American tribes to foretell the weather and the changing of the seasons, for this reason it was held as a sacred plant.

Range: Native to North America found in all 48-mainland states of USA and in southern Canada.



Local occurrence: Mostly east of the cascades. Open woodlands prairies, on dry rocky hillsides and in canyons.

Habitat preference: Found growing in thickets and waste ground, open fields and roadsides. It prefers well-drained acid soil and full sun.

Plant strategy type: Weedy colonizer.

May be collected as: root cuttings are best long taken in December

Seed germination: Continuous light alternating warm and cool temperatures

Propagation recommendations: high seedling vigor, one year old seedlings are used for planting large areas. Sprouting is encouraged by cutting or fire injury.

Soil or medium requirements: Poor well drained soils with partial to full sun. Adapted to Coarse and Medium Textured Soils, ph minimum 5.3 maximum 7.5

Installation form: Bare root, container, and seeds.

Recommended planting density: 300 to 1200 per acre

Care requirements after installed (water weekly, water once etc.)

Normal rate of growth or spread, lifespan: Bloom period late spring, Fruit seed period begins summer ends fall,

Sources cited:

Plants National Database
http://plants.usda.gov/cgi_bin/topics.cgi?earl=plant_profile.cgi&symbol=LODI

Alternative Nature Online Herbal
http://altnature.com/gallery/sumach.htm

Data compiled by: Karen Suyama, June 2005

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