*Propagation Protocol for Poison Sumac (*Toxicodendron vernix*)*

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NOMENCLATURE: USDA NRCS (1999)

Deep in the heart of southeastern Washington, DC, lives a very nasty plant. Hidden among enticing highbush blueberries (*Vaccinium corymbosum* L. [Ericaceae]) and sweetbay magnolias (*Magnolia virginiana* L. [Magnoliaceae]) is poison sumac (*Toxicodendron vernix* (L.) Kuntze [Anacardiaceae]), waiting to brush the unwary visitor with a dose of its itching oil. Poison sumac is closely related to other such nasties as poison ivy (*Toxicodendron radicans* (L.) Kuntze), the poison oaks (*Toxicodendron pubescens* P. Mill. and *Toxicodendron diversilobum* (Torr. & Gray) Greene), and the benign, nonpoisonous sumacs (*Rhus* spp. L.), all members of the cashew family (Anacardiaceae).

Poison sumac is a multi-stemmed, deciduous shrub that grows to 5 m (16 ft) tall. Its stems, when broken, exude a milky sap. It has compound leaves composed of 7 to 13 oblong leaflets that have entire margins (unlike *Rhus* spp. that have serrated leaf edges). The leaves are hairless and smooth, with petioles that are reddish or maroon. The leaves turn yellow or red in fall, a characteristic common to most sumacs. Plants in the vegetative stage may be confused with young ash (*Fraxinus* L. [Oleaceae]) saplings (Magee 1981).

The flowers of poison sumac are not particularly noticeable; they are tiny, green, and form drooping clusters (up to 20 cm [8 in] long) from leaf axils in May and June. In contrast, poison sumac fruit is distinctive and a key feature of the species. Each fruit is a creamy white drupe about 4 to 5 mm (0.18 in) in size and makes up part of a dangling cluster. Fruit, leaves, and other juicy parts of poison sumac contain an oil called urushiol that causes an allergic rash at any time of the year when susceptible individuals touch the plant (AAD 1999).

Poison sumac grows in swamps, wet woodlands, and shrub-tree bogs, usually in the shade. It is a species found in threatened mid-Atlantic coastal plain "magnolia bogs" as described by McAtee (1918) in the early part of the 20th century. Its range is from southern Maine and southwestern Nova Scotia to Minnesota and southwestern Ontario, south to Maryland, Ohio, and Indiana, and along the coast from Delaware to Florida and Texas (Gleason and Cronquist 1991).

Photo by R Mohlenbrock

Poison sumac

RATIONALE FOR PROPAGATION

Posion sumac was propagated for a revegetation project at Oxon Run Parkway in southeastern Washington, DC. Oxon Run is a "stream corridor park that contains several northern magnolia bogs and a rare wetland complex, the only such example in the national park system" (Rudy 2000) and has been impacted over the years by US Army ordnance testing during World War I, subway tunnel construction beneath the bog, runoff from an adjacent hospital parking lot, and urban pollution.

To mitigate the effects of unexploded ordnance removal and other recent activities at Oxon Run, the National Park Service asked the National Plant Materials Center (NPMC) to propagate and transplant a number of representative magnolia bog species, including poison sumac. All propagules were collected on site.

PROPAGATION

We propagated poison sumac from seeds. Ripe seeds were collected in late summer (end of August at Oxon Run Parkway); collectors wore long sleeves and latex gloves. After seeds were brought back to the NPMC, processing procedures similar to those for *Rhus* species (Brinkman 1974) were used. Seeds were allowed to dry for several weeks, after which they were rubbed over a wire screen or wire kitchen strainer to remove the outer white seedcoat and any remaining pulp. Cleaned seeds were stored dry in paper envelopes at 4 °C (40 °F) and 35% relative humidity. Because we collected so few seeds, we did not experiment with pre-germination treatments, but seeds may benefit from a scarification treatment, as is the case with poison oak (Evans 2001) and related *Rhus* spp.

(Brinkman 1974). Our nonscarified poison sumac seeds had only 3% germination.

Seeds were sown in late winter on Sunshine Mix #1 (containing sphagnum peat moss, perlite, major and minor nutrients, gypsum, dolomitic lime, and a wetting agent; Sun Gro Horticulture Inc, Bellevue, Washington). Seed flats were set on a bench in the greenhouse under natural light and were hand watered as needed. Greenhouse temperatures ranged from 26 to 29 °C (80 to 85 °F) during the day, while night temperatures were maintained at 18 to 20 °C (65 to 68 °F). By late spring, seeds had germinated. Seedlings were transplanted into 1-l (quart) containers using a woody plant potting mix composed of 201 l (7.1 ft^3) Sunshine Mix #1, 113 l (4 ft^3) of shredded pine bark mulch, and 565 g (20 oz) Nutricote Total 18N:8P_2O_5:6K_2O (270 d release rate at 25 °C [77 °F]). Staff wore latex gloves at all times when handling seeds, as well as long sleeves when working with container plants. Seedlings were moved outside to a shade house during the first season; quart pots were overwintered in a cold storage room at 4 °C (40 °F) and 60% relative humidity. During the second growing season, seedlings were transplanted into 3-l (1-gal) containers using the same woody plant mix that was used for quarts. These larger plants were overwintered outside under a 6-mm-thick (0.25-in) microfoam insulating blanket and were ready for outplanting in spring of the third growing season.

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