

Vitaceae—Grape family

# *Vitis labrusca* L.

fox grape

Franklin T. Bonner

Dr. Bonner is a scientist emeritus at the USDA Forest Service's Southern Research Station Mississippi State, Mississippi

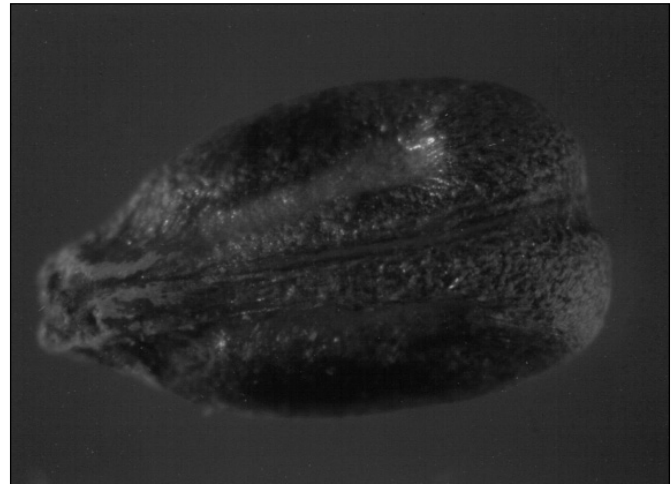
**Other common names.** northern fox grape, plum grape, northern muscadine, swamp grape, wild vine.

**Growth habit, occurrence, and use.** Fox grape—*Vitis labrusca* L.—a deciduous, woody vine, grows naturally from New England to Illinois and south to Georgia and infrequently, Arkansas (Vines 1960). It may climb on trees to a height of 12 m. Fox grape hybridizes readily with other *Vitis* species, and it has been the most important grape in the development of North American viticulture (Vines 1960), notably the 'Concord' varieties (Cawthon and Morris 1982). The fruits are important as food for many birds and mammals.

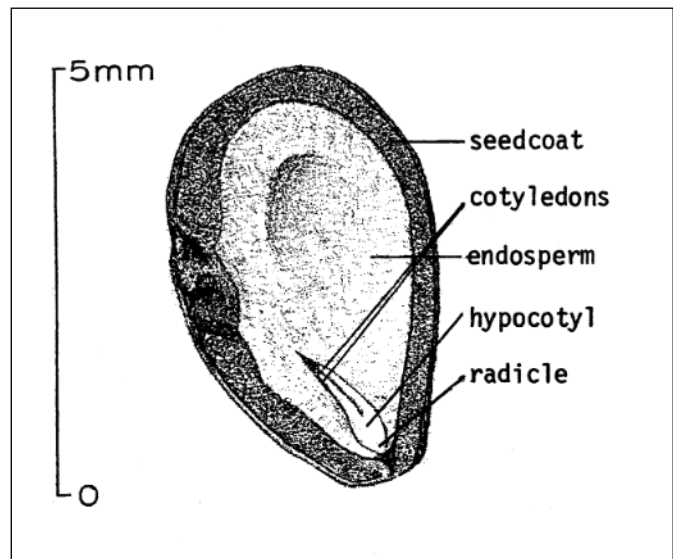
**Flowering and fruiting.** The dioecious flowers are both borne in short panicles, 5 to 10 cm long, in May or June. The fruit clusters usually have fewer than 20 globose berries, 8 to 25 mm in diameter. The berries mature in August to October and drop singly. Mature berries are brownish purple to dull black and contain 2 to 6 brownish, angled seeds that are 5 to 8 mm long (Vines 1960) (figures 1 and 2). Seed maturity is indicated by a dark brown seedcoat (Cawthon and Morris 1982).

**Collection, extraction, and storage of seeds.** Ripe berries can be stripped from the vines by hand or shaken onto canvas sheets. The seeds can be extracted by placing the berries in screen bags with 1.4-mm openings (approximately 14-mesh) and directing a solid stream of water at about 181 kg (400 lb) of pressure onto them. This removes the skins and pulp, most of which will be washed through the screen. The remaining fragments can be washed off in a pail of water. Seeds can also be extracted by running berries through a macerator or hammermill with water and washing the pulp away (Bonner and Crossley 1974). Six samples of fox grape seeds ranged from 32,900 to 34,000/kg (14,920 to

**Figure 1**—*Vitis labrusca*, fox grape: seed.



**Figure 2**—*Vitis labrusca*, fox grape: longitudinal section through a seed.



15,430/lb) at a moisture content of 10%; the average was 34,600 seeds (15,070/lb). No storage data are available for fox grape, but other *Vitis* species have been stored successfully at low moisture contents at 5 °C in sealed containers (Bonner and Crossley 1974; Vories 1981). These results suggest that fox grape seeds are orthodox in storage behavior and can be stored successfully for at least several years.

**Pregermination treatments.** Fox grape seeds exhibit dormancy that can be overcome by moist stratification at 2 to 5 °C for several months. There are no specific data for

fox grape, but a similar wild species—riverbank grape, *V. vulpina* L.—requires 90 days of stratification for germination testing (AOSA 1993) and up to 4 months has been recommended for spring planting in nurseries (Vories 1981). Soaking stratified seeds in solutions of nutrients or growth substances for 12 hours before sowing has also been reported as helpful in Europe (Simonov 1963).

**Nursery practice.** Seedlings rarely run true to type; hence, propagation by cuttings is common (Vines 1960).

---

### References

- AOSA [Association of Official Seed Analysts]. 1993. Rules for testing seeds. *Journal of Seed Technology* 16(3): 1–113.
- Bonner FT, Crossley JA. 1974. *Vitis labrusca* L., fox grape. In: Schopmeyer CS, tech. coord. *Seeds of woody plants in the United States*. Agric. Handbk. 450. Washington, DC: USDA Forest Service: 853–854.
- Cawthon DL, Morris JR. 1982. Relationship of seed number and maturity to berry development, fruit maturation, hormonal changes, and uneven ripening of 'Concord' (*Vitis labrusca* L.) grapes. *Journal of the American Society for Horticultural Science* 107: 1097–1104.
- Simonov IN. 1963. [The influence of micro-elements and growth substances on seed germination and seedling growth of vines.] *Venogradarstvo* 23(4): 35–37 [Horticultural Abstracts 34(518); 1964].
- Vines RA. 1960. *Trees, shrubs, and woody vines of the Southwest*. Austin: University of Texas Press. 1104 p.
- Vories KC. 1981. *Growing Colorado plants from seed: a state of the art*. Gen. Tech. Rep. INT-103. Ogden, UT: USDA Forest Service, Intermountain Forest and Range Experiment Station. 80 p.