



Oregon Grape Root: A Brief Introduction to Harvesting and Marketing Oregon Grape as a Medicinal Herb from Small Private Forestlands in the Pacific Northwest

by Lita Buttolph and Eric T. Jones, Institute for Culture and Ecology

Overview

Oregon grape (*Mahonia spp.*) is a native understory shrub found in Pacific Northwest forests. The plant has several uses, including medicine (roots), landscaping (whole plant), dyes, and food (from berries). The inner bark of its roots, stems and leaves contain several alkaloids (most notably berberine) with anti-inflammatory and anti-bacterial properties, giving it commercial value in the medicinal herb market. This report is tailored to owners of small to medium-sized forestlands as well as harvesters interested in supplementing their income from the sale of Oregon grape root. It briefly describes how to identify, harvest, process, and market Oregon grape root for the medicinal market.¹



Dwarf Oregon grape (*Mahonia nervosa*)

Identifying Oregon Grape

Two species of Oregon grape are found in Pacific Northwest forests: tall Oregon grape (*Mahonia aquifolium*), and dwarf Oregon grape (*Mahonia nervosa*). Tall Oregon grape (*M. aquifolium*) is found at elevations below 4000 ft., occurs in sunny-to-shaded areas, ranges in height from 2-5 ft. (but can grow up to 15 ft.), and has composite leaves with holly-like leaflets, small yellow flowers and blue-black berries. Its roots are long, straight, and yellow inside, and can grow up to 2-3 inches thick. It is the preferred species of Oregon grape among medicinal herb buyers and processors due to its color and its ease in processing.



Tall Oregon grape (*Mahonia aquifolium*)

Dwarf Oregon grape (*M. nervosa*) can be found in Douglas-fir and Western redcedar forests in partly- shaded to shaded spots. It only grows to 1-2 ft., with compound leaves emerging from a single, short stem, yellow flowers, and dark blue berries. Its roots are thinner than *M. aquifolium* and more spindly and are less brightly yellow, although exploratory research including chemical analyses has shown it to have an amount of berberine equal to that in *M. aquifolium*. Although many companies will accept dwarf Oregon grape roots, it is less desired than tall Oregon grape.



Bundle of dwarf Oregon grape root.

Harvesting and Processing

Select sites with abundant stands for harvest. Harvest larger plants, allowing the smaller plants to grow. Avoid sites where pesticides, herbicides, and other chemicals or toxins, such as lead or other heavy metals, may be present. Oregon grape roots are best harvested in the late fall or winter after seed formation. To harvest, pull the plant up from the base of the stem and clip as much root as can be lifted from the soil. Gently brush off any soil and debris, taking care not to damage the outer root bark. Keep stems intact or at least 3 ft. in length.

¹ A more in-depth report on Oregon grape can be found in Buttolph, L., S. Vasquez and E.T. Jones. 2011. Oregon Grape Root Market Analysis: A Business Planning Guide for Small Woodland Owners. Institute for Culture and Ecology. Available at www.ntfpinfo.us.

Once collected, the stems and leaves should be separated from the roots and the roots washed with potable water. Some stem material may be allowed with the roots, but check with your buyer. Material can then be sold to a processor or further processed by cutting or chipping and then drying in a drying rack at 95 to 100°F. Drying time can range from 24 hours for chipped material to one week for intact roots. Check with your buyer for requirements on moisture content (e.g., many buyers require a maximum of 10% moisture content to prevent mold/bacterial growth). Further processing should be done within 1-2 days after harvesting. Dried material can be packaged in clean plastic polyethylene (“poly”) bags that are food or pharmaceutical grade. Material should be stored in a dry, cool site free of sunlight and pests; it can be stored for up to two years.



Cut section of tall Oregon grape root (*Mahonia aquifolium*)

Marketing Oregon Grape

Thomas and Schumann (1993) recommend conducting a feasibility study as the first step to initiating a business harvesting and selling any medicinal herb. The study might involve researching existing literature, talking with herb businesses, and taking steps to estimate the amount of product your land can produce.² Oregon grape has a relatively small market (20-30 tons worldwide), so a volume sufficient to attract a buyer might be 500 pounds. There are two types of buyers: consolidation buyers (i.e., brokers) and processors. Consolidation buyers buy raw Oregon grape root and do their own processing or may buy material that is already dried and packaged. Consolidators purchase from many harvesters to fill large orders that individual harvesters cannot fill alone. Processors are similar to consolidation buyers in that they purchase from multiple harvesters in both raw and dried forms. Product is processed to its end uses such as medicinal tinctures, capsules, powders, or teas. Processors often have an established set of suppliers, may only be interested in purchasing large volumes of product, and may require a guarantee of steady supply.

Aggregated together, a suite of low value products produced from your property could be quite lucrative over time and mitigate the risks of depending on a single, high value species that is vulnerable to fire, disease and low prices from global competition. Another option for making Oregon grape a viable economic pursuit is marketing directly to customers with value-added products. Since Oregon grape is a medicinal product you should be careful to follow guidelines to protect consumers, but there are many small businesses built around medicinals that harvest, process and direct market.

Prices for Oregon grape will depend on market demand and the level of processing, as well as the producer’s reliability in meeting an order and product cleanliness. Table 1 shows an example for 2011.

Form	Price/Unit	Source
Raw root/stem	\$0.70/lb.	Local buyer
Dried root/stem	\$2.50/lb.	Consolidation buyer
Dried root after consolidation	\$4 to \$5/lb.	Processor
Powdered root, bulk retail	\$9.75/lb.	Natural food store
Quartered root, bulk retail	\$9.50/lb.	Natural food store
Liquid Extract	\$11.20/oz.	Retail Website

Acknowledgements

Many thanks to Patrick Mooney for his assistance with this report. Funding was provided by a grant from USDA National Institute for Food and Agriculture. For more information on nontimber products, including resources for small woodland owners, go to www.ntfpinfo.us.



United States
Department of
Agriculture

National Institute
of Food and
Agriculture

² Thomas, M.G. and D.R. Schumann. 1993. Income opportunities in special forest products: Self-help suggestions for rural entrepreneurs. USDA Forest Service Agriculture Information Bulletin 666. Washington D.C.