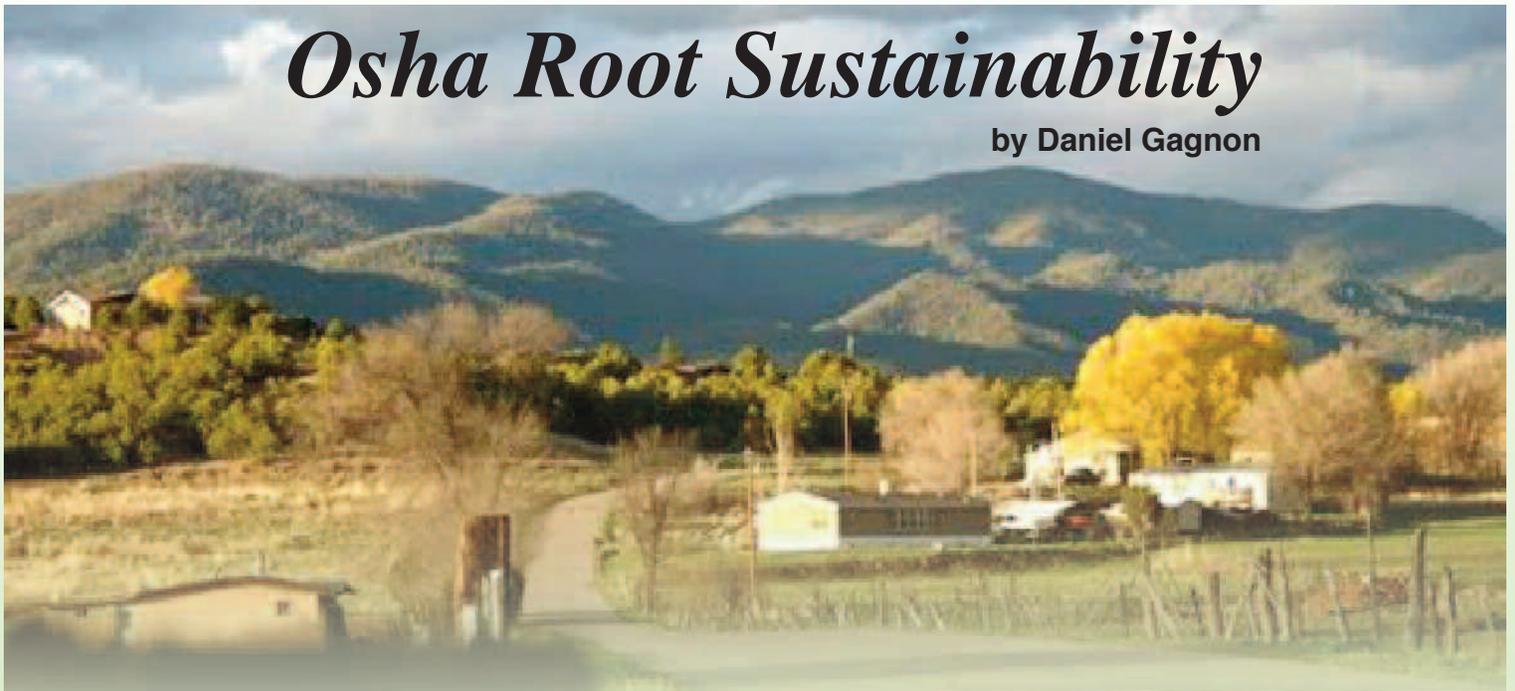


Osha Root Sustainability

by Daniel Gagnon



Osha: A Southwestern herb

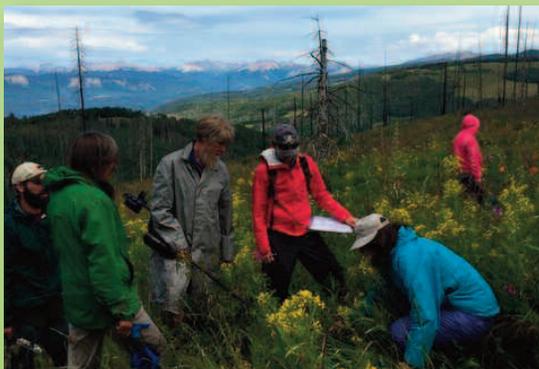
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Osha (*Ligusticum porteri*) is an herb that grows in the Southwestern United States. The part harvested and used in herbal medicine is the root. Osha is not available as a cultivated crop; It has not yet been grown successfully outside of its native habitat. The seeds are notoriously difficult to germinate. The herb doesn't grow well in conventional flat fields. Osha thrives at high altitudes of 9,000 feet and up. Until recently, there was no authoritative information available to evaluate the resilience of this herb to the impact of human activities or intensive harvesting pressures in the wild. United Plant Savers (UPS), an organization dedicated to the preservation of medicinal plants, has put Osha on its "At-Risk" list. UPS isn't saying that Osha is endangered per se. However, the organization believes that additional information is needed to properly assess the viability and long-term sustainability of this botanical in commerce. I wholeheartedly agree with their assessment. That is why **Herbs, Etc., a member of United Plant Savers for years, officially adopted Osha in 2013 as part of UPS "Adopt an Herb Program"** and made a five year financial commitment with them. For additional information see http://www.unitedplantsavers.org/content.php/161-species-at-risk_1.



Assessing the impact on Osha harvested in the wild: initial study

Since 2000, I have been personally involved in evaluating the impact of Osha harvesting on the sustainability of this botanical. The first study I participated in was instigated in 2000 and was sponsored by the Colorado State Forest Service and the Denver Botanic Gardens. The study location, near the Cumbres Pass, is situated in the Rio Grande National Forest, southern Colorado.



Study Design: Three sections were cordoned off and each section was subdivided into 10 plots. Each plot measured 3 meters wide by 10 meters long and was identified at the corners by steel rebar. The density of Osha per plot was evaluated by counting every plant in each lot: seedlings, immature plants, mature non-reproductive plants, and mature flowering plants, as well as the

height and size of each plant in the plot. After a thorough count was completed, 33% of the plants were harvested from ¼ of the plots, 66% from another ¼ of the plots, 100% from an additional ¼ of the plots, while ¼ of the plots were left untouched. In 2001, a second census of the plants in every plot was performed. Unfortunately, the following year, the person who was in charge of the study at the Colorado State Forest Service was transferred and the project was abandoned.



A second study in progress

In 2012, Dr. Kelly Kindscher of the University of Kansas, Kansas Biological Survey, spearheaded a collaborative effort between the University of Kansas, the Missouri Botanical Garden, and the U.S. Forest Service to conduct a survey on the impact of harvesting Osha in the wild. The American Herbal Products Association (AHPA), through its Education and Research on Botanical (ERB) Foundation, became a sponsor of this second study. Herbs, Etc. is a member of (AHPA), and I serve as a trustee on its board of directors. Dr. Kindscher's initial thought was to go back to the initial site and start his research there. He and his team spent a day locating the steel rebars that identified the plots measured and surveyed in 2000. I volunteered and worked alongside Dr. Kindscher's team. Of the 25 plots identified, we were unable to tell which plots had been harvested at 33%, 66%, or 100%, and which plots had not been harvested. All of the plots were brimming with Osha plants. However, since only 25 of the 30 plots were located, too much data would have been missing from the previous study. Dr. Kindscher made the decision to start over at a new location close to the original one. He implemented essentially the same study design as the previous one. In 2014, I worked with Dr. Kindscher's team. Once again, I was unable to see or guess where Dr. Kindscher's team had previously harvested the Osha and which plots had not been harvested. All 80 plots were replete with Osha plants. **In 2012, Herbs, Etc. became a significant donor to AHPA's Education and Research on Botanicals (ERB) Foundation Osha Sustainability Research Project. Herbs, Etc. currently has a three-year financial commitment to the project.** See <http://www.ahpafoundation.org/Osha.html> for additional information.

The resiliency of Osha

Osha appears to be resilient to responsible, sustained harvesting in its habitat. Why is that? Part of the reason for Osha's resilience resides in the fact that when roots are harvested, it is nearly impossible to get all of them out of the ground. Smaller roots break off the main rhizome and are left in the soil. Though it's too early to tell, preliminary evidence seems to indicate that Osha plants regenerate and replenish from these remaining roots. In the third year of this second study, it was difficult to tell which plots had been



harvested and at what percentage because there was an abundance of Osha in each plot. Dr. Kindscher has noted that Osha fares better in meadows than in forested areas. It does well in areas where there is a reduced canopy cover either from the effects of logging or from recent tree die off. In the last few years, the Colorado forest has been decimated by bark beetle infestation; many conifers are dying or dead. The unexpected consequence of this tragedy is that more light is reaching the Osha plants. The availability of additional light has created the opportunity for Osha to thrive in Southern Colorado.

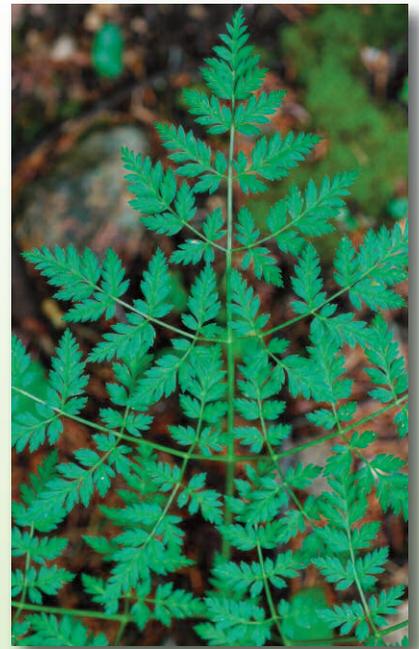
See http://www.ahpa.org/Portals/0/AHPA_Osha_Sustainability_First_Year_report.pdf for Dr. Kindscher's first-year report on the Osha Sustainability Research Project.

American Herbal Pharmacopoeia's (AHP) Osha Monograph

The American Herbal Pharmacopoeia (AHP) is developing an Osha Monograph which will cover history, identity (including botanical, macroscopic, and microscopic identification) as well as commercial sources and handling (including collection, cultivation, environmental sustainability, handling and processing, drying, and storage). It will cover qualitative differentiation, adulterants, and preparations. On the constituents side it will review currently available analytical methods. On the therapeutic side, it will examine pharmacokinetics, clinical efficacy, pharmacodynamics, medical indications supported by clinical trials, as well as traditional or modern experience. Dosages and the safety profile of Osha including side effects, contraindications, interactions, pregnancy, mutagenicity, reproductive toxicity, lactation, carcinogenicity, influence on driving, precautions, overdose, treatment of overdose, and toxicology will be addressed. The monograph is scheduled to be published sometime in 2017.

Herbs, Etc. is a proud financial sponsor of the American Herbal Pharmacopoeia and the Osha Monograph.

See http://www.herbal-ahp.org/documents/mono_contents/Osha_Sponsorship8.12.14.pdf for additional information.



Herbs, Etc. knows its wildcrafters

For over 45 years, Herbs, Etc. has been purchasing Osha roots and many local herbs from Northern New Mexico families. Michael Moore, Herbs, Etc.'s founder, harvested Osha roots and other medicinal herbs from the wild to sell in his store. He supplemented his picking by purchasing local herbs from Northern New Mexico families. In the late 1970s and early 1980s, while working for him, I was introduced to these families. I learned that grandfathers, fathers, and sons have traditionally harvested herbs over large territories. They alternate their harvesting spots from year to year. They know how to harvest

Osha roots in a responsible manner, how to clean them thoroughly, and how to dry them properly for storage. These steps are critical to preserve the roots' essential oils and other delicate constituents and to protect Osha for the future. At Herbs, Etc., we believe that buying herbs from these families ensures that their wildcrafting legacy will remain a strong component of Northern New Mexico's traditions. For many of these families, the income generated from harvesting herbs is an integral element of their livelihood. For these reasons, we value and continue to nurture these long-term relationships.



In summary, Herbs, Etc. is concerned about the long-term viability and sustainability of medicinal herbs. This is why I participate in these field studies. We must understand the impact that harvesting Osha in the wild may have on its long-term sustainability. It's also why we work closely with and fund UPS, AHPA ERB Foundation, and AHP for their ongoing research on Osha and other medicinal herbs. Our concern has strengthened our commitment to ensure the availability of all medicinal herbs, including Osha roots, for generations to come.

Herbally yours,

Daniel Gagnon, MS, RH (AHG)
President and Medical Herbalist