

## Researchers to study ramps' market, flavor profile, vulnerability to pest

March 8 2018, by A'ndrea Elyse Messer

---



A rising number of producers wish to manage ramps as an agroforestry crop, and this research will provide the Pennsylvania Department of Agriculture with information on the trade of ramps at farmers markets, grocery stores and restaurants to better understand market opportunities, concerns and constraints for guiding forest farmers. Credit: Eric Burhart / Penn State

A good way to describe ramps, it has been said, is to note what they are not. Ramps are not leeks, nor are they scallions or shallots. Ramps look like scallions, but they're smaller and have one or two broad, flat leaves.

Among the first green things to pop out of the ground in the spring across the sprawling forests of Appalachia, ramps (*Allium tricoccum*) taste stronger than leeks, which generally have a mild onion flavor, and are more "garlicky" than a scallion. As such, the uniquely pungent plant has become the darling of chefs and foodies and a much-sought-after commodity.

All the attention on ramps of late has convinced Pennsylvania Department of Agriculture officials that they need to know more about the market for ramps and the wild stocks of the plants to manage and perhaps protect them. So, with a Specialty Crop Block Grant, they funded a novel, interdisciplinary study led by researchers in Penn State's College of Agricultural Sciences. In addition to assessing supply and demand, researchers will analyze the plant's phytochemistry and nutritional makeup.

The study, which starts this month, will also evaluate ramps' vulnerability to a new exotic pest, the allium leaf miner—which threatens onion and garlic crops. Researchers want to know if ramps may be a host for the invasive insect from Europe, and whether leaf miners may be spreading by leap-frogging from one patch of wild ramps to another.

The allium leaf miner was found in leeks and onions collected in December 2015 in Lancaster County, Pennsylvania, and was the first confirmed infestation in the Western Hemisphere. The insect is native to Poland and Germany, but recently its range has been expanding rapidly. The allium leaf miner is now present throughout Europe and has recently been reported in Asia.





Ramps taste stronger than leeks, which generally have a mild onion flavor, and are more 'garlicky' than a scallion. They are uniquely pungent. Credit: dano 272 / Flickr

"There have only been two studies done on ramp chemistry, so we don't know much about them as an edible plant," said Eric Burkhart, co-lead researcher, an instructor in the Ecosystem Science and Management department.

By performing tests on plants, researchers intend to learn how the known key chemicals—sulfur compounds such as allicin—vary in the plants based on factors such as time of harvest, stage of growth and part consumed—leaf versus bulb.

A rising number of producers wish to manage ramps as an agroforestry crop, noted Burkhart, who also is plant science program director at the University's Shaver's Creek Environmental Center. So the researchers will be gathering information on the ramp trade in the state to better understand market opportunities, concerns and constraints for guiding forest farmers.

To investigate the trade in ramps, researchers will work to identify harvesters and forest-based producers in the state who are involved in the sale and trade of ramps at farmers markets, grocery stores and restaurants.

"We have a project partner, Laurel Vista Farms of Somerset, that is producing value-added products such as ramp mustards," said Burkhart, who also conducts research on other nontimber forest products in



Pennsylvania, such as ginseng and goldenseal. "This particular partner will serve as a sampling collaborator and also a key informant to help us better understand the current and potential market for ramps."



Allium leaf miner pupae are shown on an onion plant with the beginning of damage they cause. Adult leafminers are shown in the inset. Scientists fear the invasive pest is spreading on ramps. Credit: Sven Spichiger / Pennsylvania Department of Agriculture

Ramps have a purported medicinal aspect as well. The plant was cherished by early native peoples and is still valued by herbal healers for its perceived medicinal properties. High in vitamins A and C, iron and antioxidants, the plant is believed by some to offer the same blood-

cleansing, heart-healthy qualities of garlic that may also contribute to lower blood pressure.

"Because the knowledge of ramps' nutritional and medicinal composition is limited, our research will quantify phytochemicals of importance to both flavor profile and human health as they vary in relation to plant stage and seasonality," said Joshua Lambert, associate professor of food science, the other co-lead researcher of the project.

The research also will include an integrated greenhouse study overseen by Shelby Fleisher, Penn State professor of entomology. Researchers will cultivate ramps and infest them with allium leaf miner pupae to see if the invasive insects prefer the [plants](#) to leeks and onions. And ramps will be examined in the forests across the state using citizen science partners to determine the presence or absence of leaf miners.

Fleisher has kept a colony of allium leaf miner pupae alive that he collected in Huntingdon County last fall, just for this study.

Provided by Pennsylvania State University

Citation: Researchers to study ramps' market, flavor profile, vulnerability to pest (2018, March 8) retrieved 28 June 2024 from <https://phys.org/news/2018-03-ramps-flavor-profile-vulnerability-pest.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.