

Summary & Resources - Seedleaf's Headwater Farm April 2025 OAK Farmer Field Day



Cover Crops, Perennials and Diversified Plantings: Sustainable Practices for Long-Term Farming

Event Summary

In 2017, Lexington nonprofit [Seedleaf](#) leased two acres in Fayette County for an urban farm, creating opportunities for growers to produce nutritious food for the community without the barrier of land cost. In 2023, Seedleaf acquired 30-acre Headwater Farm to expand its community education and provide land access to Seedleaf Market Garden Program participants and local refugee farming groups. Dozens of local growers, farmers and allies gathered for a recent Field Day at Headwater Farm to learn about Seedleaf's community approach to food access and education, observe Seedleaf's stewardship of natural and shared resources and see demonstrations of field and high tunnel food crops, cover crop management, production equipment and orchard design. OAK's Conservation Coordinator and Natural Resources Conservation Service (NRCS) staff provided details on small-scale and whole-farm conservation practices and the associated technical and financial assistance available through NRCS programs. OAK's Organic Transition Specialist, Soil Health Specialist and Organic Production Specialist provided insights into the regulations, resources and science of Seedleaf's work.

Getting to Know Seedleaf

As a community gardening organization, Seedleaf provides horticultural training and supports the practice of gardening and small-scale farming in the urban spaces of Lexington, Kentucky. Its mission supports the development of a robust and healthy local food economy and a just and equitable system of stewardship over urban land. Through its year-long Market Garden Program, Seedleaf guides participating Fayette County residents through basic horticultural practices, food safety and general business planning. Once their instruction is complete, the Market Gardeners are provided with land for their own vegetable production at Headwater Farm. Market Gardeners keep all proceeds earned from their efforts.

Seedleaf also provides needed land access to a global community of farmers displaced from their native farming lands, including the refugee farmers' cooperative Empucate International, serving 40

families primarily from central Africa; a Nepalese farming organization, Anka and a Bhutanese refugee group.

Orchard at Headwater Farm

The orchard at Headwater Farm consists of 350 trees and shrubs of varying species, planted by members of the [Seedleaf Agroforestry Program \(SAP\)](#). The SAP Coordinator, Russ Turpin, organizes a monthly volunteer day to establish and maintain all [Agroforestry Practices](#) at Headwater Farm. In 2024, SAP planted paw paws, persimmons, hazelnuts, apple trees, peach trees, blackberries and aronia berries (chokeberry) to establish the orchard. Any non-native species grown in the orchard is substituting for a less-desirable native species (e.g., a cultivated apple for a crab apple) to improve market crop selection while ensuring species diversity. Trees and shrubs are mulched with wood chips, and trenches run between the plants to create a passive rainwater irrigation system. The trees are kept in deer tubing all winter to protect them from browsing.

The edge of the orchard borders neighboring property and railroad tracks, where native trees like black cherries and oak trees grow. Seedleaf planted Chinese/American chestnut trees, dogwoods and bur oaks along this wooded edge for increased native species diversity. SAP has also planted native willows and willow cultivars as a vegetative buffer between its farm fields and Elkhorn Creek, filtering run-off water and holding creek bank soil in place to support the health of the creek and offer additional market products.

OAK's Conservation Coordinator, Mad Marchal, and NRCS representatives described the technical assistance and cost-share programs available to support tree- and shrub-planting projects for native species diversity, erosion control and water quality, wildlife support and other natural resource concerns. Through the Environmental Quality Incentives Program (EQIP), NRCS may support [Tree and Shrub Establishment](#) (minimum area of 1/10-acre), [Tree and Shrub Site Preparation](#) and [Riparian Buffer Establishment](#).

Supporting Local Pollinators with Beekeeping

Seedleaf recently added two honeybee hives to the Headwater Farm orchard for pollination support and honey production. The hives are small and light for accessibility and were sourced from [Dadant and Sons](#) in Frankfort, KY. Seedleaf has also supported its learning journey in beginning beekeeping through the regional [Bluegrass Beekeepers Association](#), statewide [Kentuckiana Beekeepers Association](#) and the U.S. organization [Honey Bee Health Coalition](#).

A [2024 US beekeeper survey](#) showed significant honeybee colony loss rates that could reduce crop pollination nationwide. Contributing factors include pesticide exposure, poor nutritional sources, varroa mite infestations and viruses spread by the mites. Beekeepers are encouraged to educate themselves about nutritionally dense pollinator plantings and [hive management](#) for varroa mites.



Soil Health and Season Extension with High Tunnels

Participants toured Seedleaf's [high tunnel](#), in transition from overwintered Alabama Blue Collards, arugula and "cut and come again" lettuce mix to summer tomatoes and cucumbers. The 15'x44' high tunnel, provided and constructed by Grow Appalachia, has an inflation blower which helps control the temperature between the double layers of plastic, and roll-up sides for ventilation. Seedleaf farm managers are learning as they go, adjusting row size and placement for optimal harvesting and transitioning from soaker hoses to drip tape irrigation. **TIP:** The best orientation for a high tunnel for summer production is North/South and the best orientation to maximize sunlight for winter production is East/West.

Seedleaf's cost for the high tunnel was roughly \$6,000, including taxes and installation. The "[Modular Movable](#)" high tunnel from Grow Appalachia is a pared-down, movable, lower-cost tunnel that is effective for many growing goals. **TIP:** Kayla Preston, Grow Appalachia's Social Enterprise Manager, says that the most important thing about using a high tunnel to grow is knowing [how to maintain](#) the tunnel so that it stays effective and doesn't become vulnerable to weather damage.

To support soil health, plant resiliency and water conservation, the NRCS offers cost-share assistance for [High Tunnels](#), [Water Catchment](#) on high tunnels, and [Microirrigation](#) for crops grown in tunnels.

Crop Production Infrastructure and Tools

Seedleaf has modified a storage container to serve as tool storage and shared cooler space for harvested crops. **TIP:** [University of Vermont Ag Engineering](#) has great educational videos and case studies to help design the optimal infrastructure on the farm!



The farm managers at Seedleaf use a variety of tools to manage land cultivation, cover crops and direct seeding. They use a Grillo walk-behind tractor with rotary plow and tiller, sourced from [Earth Tools](#) in Owenton, KY (which has a helpful [YouTube channel](#) showcasing tool problem diagnostics and maintenance videos). For crimping cover crops on a small scale, farm managers at Seedleaf use straps connected to a board.

Seedleaf has two precision seeders: the Earthway seeder and the Jang seeder. The Earthway seeder is a good starter precision seeder. Wheels with different-sized holes for different-sized seeds are interchangeable so that spacing and accuracy can be consistent when seeding different plant species. The Jang seeder is a more complex (and more expensive) precision seeder that spaces individual seeds more precisely than the Earthway, eliminating the need for thinning and saving on seedling costs. Multiple Jang seeders can be attached to a tractor for multi-row seeding.

Seedleaf staff uses a flame weeder to create "stale seedbeds." The heat kills broadleaf weeds (not grasses) that come up after the bed is formed or the soil is disturbed and before a crop has emerged

or been seeded. Silage tarps are used at the farm to reduce weed pressure. Left to cover the soil for two-plus weeks, silage tarps can kill the majority of weeds through passive occultation.

All Seedleaf Market Gardeners have access to the Headwater Farm greenhouse to start plants in a controlled environment before “hardening off” or transplanting them. The greenhouse tables (~\$1,000) allow excess water to drain and ventilation to plant roots, keeping nursery plant starts healthy. As the best tool for disease management on any farm is sanitation, Seedleaf’s greenhouse includes benches, seeding trays, equipment and tools that can all be sanitized between each use.



Healthy Soil with Cover Crops and Soil Tests

In early October 2024, Headwater staff sowed a [cover crop](#) on production fields with a winter mix of winter rye, vetch, lentils, daikon radish and clover. Rye cover crops break up “hardpan” soils, add organic matter to the soil and survive cold weather, supporting the soil through the winter season. **TIP:** Rye cover crops are best in beds planned for late summer crops, as they need spring months to reach maturity. Triticale, wheat and oats are less vigorous cover crops that are easier to terminate where you want to plant earlier spring crops. Buckwheat is a summer cover crop that is quick to establish and quick to break down.

The rye outcompeted the other species yet the legumes (vetch and clover) thrived and helped to boost nitrogen in the soil. Legumes contain rhizobium bacteria which uses carbohydrates from the plant to “fix” atmospheric nitrogen into an organic form that plants can use. These cover crop benefits provide fertility to support plant health and prevent erosion and weathering of the soil.

Seedleaf tests soils regularly to determine which nutrients are deficient, requiring additional cover crops or amendments to support the soil, and which nutrients are high, requiring a balancing of fertility through cover crops, reduced amendments or intentional crop rotations. [University of Kentucky College of Agriculture](#) offers free or low-cost soil tests and recommendations to Kentucky growers through County Extension offices. [Waters Agricultural Lab](#) provides more detailed (and more expensive) soil tests that can further define nutrient levels and provide crop-specific recommendations. NRCS and Extension Agents can help to interpret soil test results. OAK’s [Soil Test Records and Interpretation Tool](#) allows growers to document soil test results and see changes over time.

NRCS offers technical assistance and cost-share support through EQIP for [Cover crop](#), [Conservation cover](#) and [Cover crop for pollinators](#) conservation practices.

Irrigation at Seedleaf

Seedleaf farm staff is installing new irrigation pipelines throughout the production fields at Headwater Farm, ensuring one frost-free hydrant for every ½ acre plot at the farm. Seedleaf will collect data on Market Gardener water use and needs and then plan to collect an on-farm water use fee from each grower to support their collective irrigation supply. Layflat and poly hoses are used to irrigate field production, providing water to drip tape in the beds and releasing water every 12 inches through emitters.

Reach out!

If you have additional questions about the Field Day at Headwater Farm or would like to learn more about conservation practices and the Natural Resource Conservation Service programs, please reach out to [OAK's Conservation Outreach Coordinator](#). You can also directly contact NRCS by finding your [local NRCS office](#).

Gratitude

OAK is grateful to Megan Pilsbury, Em J Parsley, Christine Smith and the Seedleaf Farm Market Gardeners for their time and efforts for this Field Day, to USDA's Natural Resources Conservation Service (NRCS) for providing essential participant support and conservation guidance, and to all the farmers and ag professionals who took time out of their busy schedules to share in the learning and conversation.

This event was supported by a cooperative agreement with the U.S. Department of Agriculture (USDA)'s Natural Resources Conservation Service (NRCS).

NOTE: All links and program information were verified in April 2025 and may not reflect future updates.

Related Resource Links:

OAK Resources:

- [Annual Organic Farming Conference](#) - Save the date and check back for details in summer 2025 for OAK's 15th Annual Organic Farming Conference, from January 30-31, 2026.
- [Upcoming OAK Farmer Field Days](#) - Hosted on working farms, these events highlight organic practices used in crop and livestock systems and best practices in production, marketing, business and resilience on Kentucky farms. Register today to learn from and with other farmers!
- [OAK Conservation Program](#): Conservation Outreach Coordinator provides one-on-one assistance for Kentuckians interested in adding conservation practices to their land or farm management on owned or leased land. Eligible participants are Kentucky farmers and landowners with production or subsistence farms, urban or rural growing spaces, community-run projects or privately managed lands.
- [OAK Transition Program](#) - Organic Transition Specialists assist farmers who are interested in transitioning to USDA-certified organic production. Organic Specialists are available for one-on-one consultations, providing a personal level of service and technical assistance on-site, at the farmer's convenience.

- The [Midwest Transition to Organic Partnership Program \(TOPP\)](#) is a coalition of partners across 11 states providing mentorship, technical assistance, and wrap-around support for transitioning and existing organic producers. With TOPP support, OAK connects farmers transitioning to organic with local, experienced organic mentors in the [Organic Farmer Mentorship](#) program.
- [Organic Production Assistance Program](#) - The organic production consultation services provide dedicated organic technical assistance to Kentucky farmers who are currently using or interested in adopting or expanding organic practices.
 - [OAK Farming Tools and Templates](#)
- [Join OAK today!](#) The sustainable food and farming network in Kentucky is growing, and together, we can create a thriving local food system. Your support and participation helps OAK deliver educational programming, provide community outreach and enhance market opportunities for growers across Kentucky! Receive discounts on OAK events and other member benefits!
- [Sign up for OAK newsletters](#) - For farmers and consumers, OAK offers a variety of regular communications to stay connected to Kentucky food and farming news, research and events.
- [OAK YouTube](#) - View recordings, snapshots and lessons learned from host farmers in past conference and field day playlists.
- [Suppliers and Farm Resources](#) on OAK's Find-A-Farm Directory

OAK-Seedleaf 2025 Field Day Resources:

- Conservation Resources:
 - [OAK Conservation Program](#): Conservation Outreach Coordinator provides one-on-one assistance for Kentuckians interested in adding conservation practices to their land or farm management.
 - **Upcoming:** Conservation Chat - May 20, 2025, 6 -7 pm ET. Free Virtual Gathering. Visit the website to join the conversation and learn more about on-farm conservation assistance/resources.
 - [Seedleaf - NRCS Conservation Practice Document](#)
 - [340](#) - Cover Crop
 - [327](#) - Conservation Cover
 - [386](#) - Field Border
 - [314](#) - Invasive Species Removal (Brush Management)
 - [391](#) - Riparian Forest Buffer
 - [345](#) - Residue and Tillage Management, Reduced Till or Conservation Tillage
 - [325](#) - High Tunnel System
 - [441](#) - Micro irrigation
 - [422](#) - Hedgerow Planting
- Partner Resources:
 - [Grow Appalachia](#) addresses food insecurity throughout central Appalachia through home and community garden initiatives, foodways, farming, and hunger relief programming. As a [Strategic Initiative of Berea College](#), Grow Appalachia provides an engaging [Beginning Farmer Series](#) and supportive [Garden Grants](#), as well as [High Tunnels and Growing Supplies](#) through its [Social Enterprise](#) work: contact [Kayla Preston](#)

- Kentucky State University [Organic Farmer Survey](#) - The Organic and Conventional Farmer survey will support KSU's cooperative extension services to understand the challenges, research needs, and insights to improve organic farming in Kentucky.

Cover Crop Resources:

- [Cover Crops for Sustainable Crop Production](#) - Sustainable Agriculture Research and Education (SARE)
- [Managing Cover Crops Profitably](#) and [Building Soils for Better Crops](#) - SARE
- [Covers Under Cover: Managing Cover Crops in High Tunnels](#) - University of Kentucky et al
 - [Cool-Season Cover Crops for High Tunnels in the Southeast](#)
 - [Warm-Season Cover Crops for High Tunnels in the Southeast](#)

Soil Health Resources:

- Soul Fire Farm's [How Alive Is My Soil?](#)
- [Cornell Soil Health Manual](#) - Cornell University's College of Ag and Life Sciences
- [Building Soil Health in the South](#) - Organic Farming Research Foundation (OFRF)

Crop Production Resources:

- [OAK Farming Tools and Templates](#)
- [General Production Resources | Center for Crop Diversification](#)
- [Organic Agriculture | Center for Crop Diversification](#)
- [Crop Rotation on Organic Farms | SARE](#)
- [Community Supported Agriculture \(CSA\) Production Manual](#) of the Organic Farming Unit at the University of Kentucky
- Post-Harvest Infrastructure: [Shipping Container DIY cold storage](#) - University of Vermont Ag Engineering
- Suppliers:
 - [High Tunnels and Growing Supplies](#) - Grow Appalachia, Berea KY
 - [Walk-Behind Tractors and Hand Tools](#) - Earth Tools, Owenton KY
 - [Farm/Garden Supplies](#) - Martin's Produce, Liberty KY
 - [Farm/Garden Supplies](#) - Shrock's Garden/Farm Supplies, Crab Orchard, KY
 - [Farm/Garden Supplies](#) - Deerfield Supplies, LLC, Elkton, KY
 - [Organic Farm And Garden Supplies](#) - Fresh Start Growers Supply, Louisville, KY

Beekeeping Resources:

- [Kentucky State University Beginner Beekeeping Program](#)
- [Honey Bee Health Coalition](#)
- [Kentucky State Apiarist](#)
- [Kentuckiana Beekeepers Association](#)
- [Bluegrass Beekeepers Association](#)
- 2025 Colony Loss Results: Survey Data and Sample Analyses [Webinar Recording](#)
- Why Bee Health Matters to Your (Farm's) Bottom Line: A Seeds for Bees® [Webinar Recording](#)

Funding /Technical Assistance Resources and Service Providers:

- Kentucky Center for Agriculture and Rural Development ([KCARD](#))
 - Free [business planning](#) for Kentucky farms and agribusinesses
 - [Funding assistance and grant information](#) (Kentucky and beyond)
 - Sign up under “GET UPDATES” on [KCARD website](#) to receive e-newsletters
- U.S. Department of Agriculture (USDA)
 - Read this first! [A Guide to USDA Resources for Historically Underserved Farmers](#)
 - USDA [Farm Service Agency \(FSA\)-Kentucky](#)
 - [How to Start a Farm: Beginning Farmers and Ranchers](#)
 - Find your county’s office in [West Kentucky](#) or [East Kentucky](#)
 - [USDA Natural Resources Conservation Service \(NRCS\)-Kentucky](#)
- Kentucky Department of Agriculture (KDA)
 - [Organic Marketing Program](#)
 - [Grants and Funding Opportunities](#)
- University of Kentucky:
 - [Extension Publications](#)
 - [Food Connection](#) - Value Chain Coordinators' [contact information](#)
 - [Center for Crop Diversification](#)
- Grants:
 - [SOAR loan](#) - southern and eastern KY
 - [KSU Small-Scale Farm Grant](#)
 - [Beginning Beekeeper grant](#)
 - [County Ag Investment Program \(CAIP\)](#) grant: county-specific! Ask your County Cooperative Extension Agent