

Final Report

APPROPRIATE TECHNOLOGY TRANSFER FOR RURAL AREAS

May 16, 2024 ~ May 15, 2025



ATTRA
SUSTAINABLE AGRICULTURE

Appropriate Technology Transfer for
Rural Areas Program
Final Performance Report
(May 16, 2024 - May 15, 2025)

Submitted to:

USDA Rural Business – Cooperative Service
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Washington, DC 20250

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Background

The ATTRA program was created in the 1985 Farm Bill and has been reauthorized in all subsequent Farm Bills. ATTRA is housed within the USDA's Rural Business-Cooperative Service (RBS) and managed by the National Center for Appropriate Technology (NCAT) through a cooperative agreement with USDA/RD. ATTRA is a trusted source of sustainable agriculture information and maintains a knowledge base of practical multimedia resources for farmers, ranchers, and educators. Historically, the producers who access ATTRA's services most frequently are family-scale, small-scale, beginning, limited-resource, and returning veteran farmers. Assistance is provided to clients in a variety of ways, including via telephone conversations and responses; emailed/mailed technical responses and publications; other electronic information dissemination; in-person and virtual education through workshops, conferences, one-on-one meetings, publications, and tutorials; and other appropriate outreach methods, including social media.

NCAT's agriculture specialists work directly with producers across the country. Headquartered in Butte, Montana, NCAT has staff in Arkansas, California, Florida, Kentucky, Louisiana, Mississippi, Montana, New Hampshire, New Jersey, North Carolina, Pennsylvania, and Texas.

For more than 35 years, NCAT's ATTRA program has been a trusted source of information for farmers and ranchers, providing individualized technical assistance and in-depth resources to support sustainable agriculture. NCAT is regarded as an honest broker of credible information—farmers and ranchers know they can rely on NCAT's ATTRA program to provide the resources and connections they need. NCAT offers practical solutions to the clients we serve, helping them strengthen self-reliance, reduce poverty, and protect natural resources. NCAT facilitates meaningful connections among sustainable agriculture producers, researchers, USDA agencies, and other industry professionals, resulting in valuable networks and lasting change.

This report covers the performance period of May 16, 2024, through May 15, 2025.



Task 1: Provide Technical Assistance to Producers and Rural Communities

From May 16, 2024, through May 15, 2025, NCAT specialists provided technical assistance to **26,486** clients. In **2,109** cases, the technical assistance required in-depth research. Following are examples of the breadth of questions received and assistance provided by our technical specialists to farmers, ranchers, and agriculture educators across the country.

- **New York:** An ATTRA specialist provided information to a farmer on cover crops and their benefits to soil health.
- **California:** An ATTRA specialist provided information to a farmer on food safety topics.
- **Texas:** ATTRA provided information to a producer on beekeeping and equipment.
- **Pennsylvania:** An ATTRA specialist assisted a client with questions related to farm start-up and enterprise selection.
- **Wisconsin:** An ATTRA specialist provided information to a military veteran about starting a farm and farming resources.
- **New Hampshire:** An ATTRA specialist provided technical assistance to a producer about farm business structures and liability insurance.
- **Florida:** An ATTRA specialist assisted a client with issues related to nutsedge control.
- **St. Croix, USVI:** An ATTRA specialist provided information to a client regarding educational resources and training opportunities.
- **Mississippi:** An ATTRA specialist provided information to a client on USDA resources available for military veterans.
- **Louisiana:** An ATTRA specialist provided information to a producer on cash flow issues for farmers.
- **South Dakota:** An ATTRA specialist assisted a producer with cost-share opportunities for compost application.
- **New Mexico:** ATTRA provided technical assistance on agroforestry and silviculture.
- **Colorado:** ATTRA assisted a farmer with locating a wool processor.
- **New Jersey:** ATTRA assisted a farmer with designing a greenhouse irrigation system.
- **Delaware:** An ATTRA specialist provided information to a client regarding resources for land use questions.
- **Virginia:** An ATTRA specialist provided technical assistance to a producer about grain production.
- **Massachusetts:** An ATTRA specialist provided information to a client on irrigation.
- **Idaho:** An ATTRA specialist assisted a producer with wool marketing resources.
- **North Carolina:** ATTRA provided technical assistance on microgreens production and marketing.
- **Oregon:** An ATTRA specialist provided information to a farmer on sources for seed packet supplies.
- **Indiana:** An ATTRA specialist assisted a producer with an on-farm research grant.
- **Kentucky:** ATTRA provided technical assistance on strawberry production.
- **New Hampshire:** An ATTRA specialist provided information to a farmer on fertilization.



Task 2: Produce Sustainable Agriculture Educational Materials

ATTRA Online and Print Publications Library

The NCAT publication library includes more than **350** ATTRA publications, including more than **140** publications in Spanish. The ATTRA website includes an audio player for publications that allows clients to listen to publications in multiple languages. During this project year, NCAT staff produced **15** new and updated publications.

2024-2025 New and Updated Publications (15)



Upland Wildlife Habitat Management: Central and Southern Appalachian Region (new)



Regenerative Grazing in the South: Case Studies from Arkansas (new)



Regenerative Grazing in the South: Case Studies from Virginia (new)



Regenerative Grazing in the South: Case Studies from Mississippi (new)

Kudos from our clients

"Following ATTRA guides have been like a cheat code to production success. I just need to follow what an ATTRA specialist wrote, and if I do the work, I reap the rewards."
—Commercial producer, New York



Regenerative Grazing in the South: Case Studies from Texas (new)



Vertical Farming (update)



Overview of Cover Crops and Green Manure (new)



Agricultural Riparian Areas in Southern Appalachia (new)

ATTRA Online and Print Publications Library (continued)

2024-2025 New and Updated Publications (15)



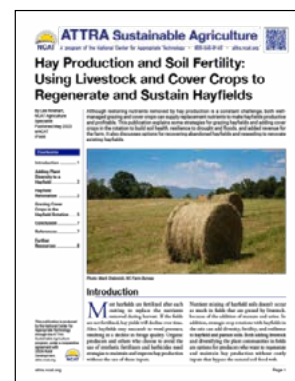
Poultry Meat Processing: Choosing an Approach for Your Farm (new)



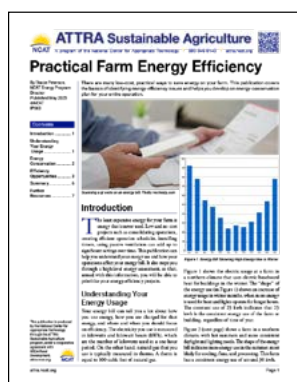
Sorghum Syrup Production (update)



Roots to Revenue: Making Agritourism Work for Your Farm (new)



Hay Production and Soil Fertility: Using Livestock and Cover Crops to Regenerate and Sustain Hayfields (new)



Practical Farm Energy Efficiency (new)



Introduction to Forest Garden Planning, Design, and Maintenance (new)



Poultry on Diversified Farms: A Guide to Profitability and Sustainability (new)



Podcasts

ATTRA's *Voices from the Field* podcast features interviews with our specialists, farmers, and educators highlighting new ATTRA resources, current innovations in sustainable agriculture, and success stories. The podcast is available on Apple Podcasts, Google Play, Spotify, YouTube, the ATTRA website, and many other streaming platforms. In the 2024-2025 project year, NCAT produced **25** podcast episodes that received **37,094** listens.



2024-2025 New Podcasts (25)

- Episode 354. The Rich Heritage of Chicken Breeds
- Episode 355. Soil-to-Skin: Rebecca Burgess of Fibershed on Building Community
- Episode 356. Tameka Peoples of Seed2Shirt Shares Her Journey
- Episode 357. Soil-to-Skin: Laura Sansone of New York Textile Lab on the Intersection of Growers and Designers
- Episode 358. Abundant Montana "Meet Up" Meets with Success
- Episode 359. Teatime in Mississippi
- Episode 360. Natural Dye Supply Chain: From Field to Fabric
- Episode 361. Understanding the Hawai'i Regional Food Business Center and Food Hub Hui with Dr. Saleh Azizi
- Episode 362. Strategies for Selling to Schools
- Episode 363. The Lost Art of Seed Saving with Bonnetta Adeeb of Ujamaa
- Episode 364. Understanding Through Listening: Connecting with Indigenous Foodways in Montana
- Episode 365. Calcium: The Premier Soil Nutrient
- Episode 366. Guy Ames: Living and Farming with Head and Heart
- Episode 367. The Farming Systems of Puerto Rico
- Episode 368. Lessons from 'The Principal Farmer'
- Episode 369. Functional Movement in Farming with Cynthia Flores
- Episode 370. Vertical Mushroom Farming in Florida
- Episode 371. Forest Farming with 'Joe Ginseng'
- Episode 372. Digging into Healthy Soil with Dr. Faye Smith
- Episode 373. Exploring Syntropic Agriculture with Roger Gietzen & Mauro Rosito-Weber
- Episode 374. Developing Farmers Market Cooperatives with Blake Lineweaver
- Episode 375. Nourishing Native Plants on Farms and Ranches
- Episode 376. Talking 'Health in the Hood' with Asha Walker
- Episode 377. Sustaining Farmers Market Success in Montana and Beyond
- Episode 378. Beekeeping Basics with Eric Fuchs-Stengel



Blog Posts

Through the ATTRA blog, NCAT specialists provide technical information on timely topics, connect clients to USDA programs and NCAT resources, and share practical tips. During the 2024-2025 program year, NCAT specialists wrote **27** blog posts for the ATTRA website.



2024-2025 New Blog Posts (27)

- Heritage Chickens: A Rare Breed in Modern Coops
- Throw Some Shade: Protecting Livestock from Heat Stress
- Double SNAP Dollars: Increasing Equitable Access to Local Produce
- Harmful Algal Blooms in Farm Ponds: Risks to Humans, Livestock, and Pets
- Drought: Objective or Subjective?
- Ag Efficiency: Focus on the 20%
- Building the Market for Climate-beneficial Wool
- Wasabi — A Unique Plant in a Unique Place
- Seeding Root Crops
- Arkansas Carbon Venture Turns Sustainable Forestry Management Residuals into Market-ready Product
- Microgreens: Tiny Crops, Big Profits – A Nutritional Powerhouse for Farmers and Winter Menus
- Bringing the Farm to School Through New Connections
- Power, Profit, and Diversified Farming
- New Publications Showcase Success Stories of Regenerative Grazing in the South
- Regenerative Grazing in the South: Changing Attitudes and Gaining Ground
- Got Calcium?
- Farmers in Hurricane Helene's Path face Hard Winter— But We Can Help
- Winter Farming in Florida: Profit Ripe for Picking
- Farmer Appreciation: A Tribute to Janice Neighbor
- Hurricane Helene and Western North Carolina: New Year, New Challenges and Available Resources
- The Legacy and Future of Small Farms
- Cozy Up with Wool
- The Case for Tractor Farming
- How Syntropic Agriculture Restores Soil and Farms
- Tips on Forest Farming Medicinals From 'Joe Ginseng'
- Agility in Farm Management



Kudos from our clients

"I'm a master gardener, so my focus is on educating the public on back yard gardening & occasionally helping very small-scale farmers, so I'm looking for information that's well researched from major universities & state & federal ag agencies. ATTRA is a great source of new information for me & also for grant info that I can share with our partners."

—Master gardener, California



Educational Videos

Since farmers and agricultural professionals, like the general population, regularly seek answers on YouTube, we have increased our video production and posting on YouTube. During this project year, NCAT produced **37** videos and received **239,308** views. We have **11,900** subscribers to our YouTube channel.

2024-2025 New Educational Videos (37)

- Climate Beneficial Fiber Partnership: NCAT Introduction
- Climate Beneficial Fiber Partnership: NCAT Northern Great Plains Program Process
- Urban Garden Tips with Echo Global Farms
- Climate Beneficial Fiber Partnership CCI Carbon Farm Planning
- Climate Beneficial Fiber Partnership: NGP Wool Markets and Climate Beneficial Verified
- Climate Beneficial Fiber Partnership Introduction for Producers
- Exploring a Resilient Forest Garden with Dani Baker
- Farm Store Offers 24-Hour Self Service
- Southern Organic Pest Management Through IPM
- Things We've Learned: Safe to Fail Trials
- Bramble Hollow Farm: A Soil for Water Case Study
- Bean Hollow Grassfed Farm: A Soil for Water Case Study
- Ember Cattle Company: A Soil for Water Case Study
- Heaven's Hollow Farm: A Soil for Water Case Study
- Holsinger Homeplace Farms: A Soil for Water Case Study
- Shamoka Run Farm: A Soil for Water Case Study
- Singing Spring Farm: A Soil for Water Case Study
- Swisher Family Farm: A Soil for Water Case Study
- Ellett Valley Beef Company: A Soil for Water Case Study
- Cattle Run Farm LLC.: A Soil for Water Case Study
- Glade Road Growing: A Soil for Water Case Study
- Soil for Water Video Case Studies Introduction
- Mastering Plant Propagation: Division and Grafting Techniques with ECHO Global
- Composting 101 with Sundiata from Compost Community
- Cultivating AI one Byte at a Time
- From Farm to Market: The Organic Advantage
- Soil for Water Video Case Studies Introduction
- Farmer Portrait: Paul Wilson, Warfield, Virginia
- Farmer Portrait: Natasha Crawford, Chesterfield, Virginia
- Farmer Portrait: Kirsten Marra, Wallingford, Connecticut



Task 3: Provide Training Opportunities for Producers

NCAT's ATTRA program has a strong reputation for providing practical training for farmers and ranchers, with a particular emphasis on beginning farmers and military veteran farmers. NCAT/ATTRA staff regularly attend and present materials at agriculture conferences, host in-person and virtual workshops, and facilitate a variety of producer trainings. In the 2024-2025 project year, NCAT specialists reached **17,424** producers through **192** training events.

Military Veterans

Armed to Farm is NCAT's weeklong training that introduces veterans to different farming ventures in their region and provides a mix of classroom and on-farm training. Training topics include business planning, risk management, soil health, crop and livestock production, marketing, and access to USDA programs. During this project year, ATTRA supported seven Armed to Farm trainings with **136** participants. These trainings took place in Arkansas, Iowa, Kentucky, Louisiana, Virginia, and Washington. In addition to the weeklong Armed to Farm trainings, ATTRA was involved in **19** trainings that targeted military veterans, reaching **481** veterans.



Kudos from our clients

"I loved this workshop! Going in, I had zero knowledge of farming. There is so much info. I am already looking at land and researching starting up small. I loved the farm tours. I met so many wonderful people."

—Armed to Farm Kentucky participant

Training for Beginning Farmers

NCAT's ATTRA program continues to serve and provide training for beginning farmers. In the 2024-2025 project year, ATTRA provided **103** trainings that served **5,320** beginning producers. Training topics included soil health, niche crops, pest management, conservation planning, livestock production, and more.

Kudos from our clients

"It was an amazing workshop! I learned so much info in such a short time. And anything we didn't cover (NCAT staff) all pointed us in the right direction to where we can find answers."

—Armed to Farm Pennsylvania participant



Task 4: Connect Producers to Resources, Market Opportunities, and Each Other

NCAT strives to be a trusted, practical connector for farmers and ranchers. We seek to provide peer-to-peer learning opportunities for producers because we know they learn best from each other. We also facilitate meaningful connections to our trusted specialists and our practical training and resources. In addition, we work to connect producers to USDA programs and other researchers and industry professionals. NCAT's role as a connector results in valuable networks and lasting change.

Website, Social Media, and E-newsletters

The ATTRA site is interactive, includes multilingual audio players on many of the publications, features a peer-to-peer learning forum, and hosts a free nationwide internship hub. These features complement the hundreds of publications, podcasts, blogs, news stories, funding opportunities, and events that the ATTRA website has long been known for. NCAT staff continue to develop high-quality content for the website, which serves as an information clearinghouse to provide relevant agricultural information curated from a wide variety of credible sources and posted several times a week. In the 2024-2025 project year, the ATTRA website received **777,660** page views, with **1,072,635** resources accessed.

ATTRA continues to expand its presence in the social media sphere, including Facebook, Instagram, YouTube, and other social media platforms. We have concluded that social media is an excellent platform to refer clients to the ATTRA website and resources, as well as to meet and educate our clients. At the end of the program year, ATTRA had **46,599** followers across our social medial accounts.

NCAT continues to conduct outreach to the agriculture community to inform them of the resources and technical assistance available through ATTRA and USDA programs and agencies. We accomplish this by distributing ATTRA's *Weekly Harvest* e-newsletter to **21,482** subscribers. In addition to the *Weekly Harvest*, we also distribute e-newsletters for Armed to Farm, Soil for Water, AgriSolar Clearinghouse, and other NCAT program areas. These e-newsletters are distributed to **17,842** subscribers.

Facilitate Peer-to-Peer Learning Opportunities for Producers

NCAT's agriculture specialists continue to facilitate peer-to-peer learning among farmers and ranchers. NCAT utilizes in-person and virtual workshops, email listservs, and social media platforms to connect with farmers and ranchers, provide them with resources and technical assistance and encourage peer-to-peer learning. NCAT's Armed to Farm, Soil for Water, and AgriSolar Clearinghouse programs rely heavily on ATTRA resources and technical assistance to support farmer-to-farmer learning. A feature on the ATTRA website is a peer-to-peer forum where producers can share best practices and learn from each other, in addition to having access to real-time, one-on-one support from NCAT agriculture specialists. The forum on the ATTRA has had hundreds of posts and more than **207** active users. NCAT regularly uses peer-to-peer learning in its trainings, giving farmers the opportunity to share their experiences and learn from each other.

NCAT's Women, Livestock, and the Land Project used peer-to-peer learning, ATTRA resources, technical assistance from NCAT staff, virtual sessions, and hands-on learning to help women who are beginning pasture-based livestock enterprises learn about managing their land and livestock. This training program created a peer-to-peer network of more than **250** women across the Southeast U.S., in addition to dozens of NCAT staff, other educators, and mentor farmers.

NCAT manages an Armed to Farm Alumni Facebook private group to facilitate ongoing connection with NCAT staff and participants, as well as to foster peer-to-peer learning. More than **400** Armed to Farm alumni and NCAT staff participate in this group, asking questions, sharing resources, and celebrating farm successes.

Kudos from our clients

"The weekly newsletter is so full of good information that I think it's the most valuable newsletter I receive. I can find information and resources on a variety of projects that I'm interested in, framed within the ethics of taking care of the land/people/environment." —Nonprofit employee, Kansas

Connect Veterans to Training Opportunities and other Farmer Veterans

In addition to providing training opportunities for military veterans, NCAT conducts outreach for military veterans who are interested in operating sustainable farms and ranches and helps connect them with each other. NCAT has provided veteran-specific outreach and training for more than 12 years and has connected with thousands of farmer veterans. As of the end of the project year, NCAT has **7,993** subscribers to the Armed to Farm newsletter; **1,231** contacts for the Veterans in Agriculture listserv; and **2,062** followers of the Armed to Farm Facebook page. NCAT regularly uses these platforms to connect veterans to other veterans, to resources and training opportunities, and to NCAT's agriculture specialists.

In a previous reporting period, NCAT updated the Armed to Farm Map, a network of military veterans, farmers and ranchers, landowners, and organizations that support farmer veterans. This interactive map allows users to find veteran-owned farms, farmland and farm employment opportunities for veterans, and farmer veteran training programs. The map features **180** listings, with more being added on a regular basis.

Connect Aspiring Farmers with Farms and Ranches

One of our most utilized online resources is our apprentice and internship database, which allows farms, ranches, and rural employers to post internship and apprentice opportunities. The internship hub is free for farmers to post their apprentice and internship opportunities. As of this report, there are **1,267** listings featured in the internship database. NCAT continues to promote this resource to connect beginning farmers to on-farm learning opportunities.

Kudos from our clients

"It's a great way to begin my farming journey, I have connected with many great internship supervisors."

—Beginning commercial producer, Texas



A screenshot of the ATTRA Sustainable Agriculture website. The header includes the ATTRA logo and navigation links: About, Connect, Events, Forum, Topics, Media Hub, Publication Library, and Interns. The main content area is divided into two sections: 'FIND AN INTERNSHIP' and 'RECRUIT A'. The 'FIND AN INTERNSHIP' section includes a map of the United States with numerous red location pins indicating internship opportunities. The 'RECRUIT A' section asks if the user is a farmer looking to post an internship and includes a 'Please follow' button. The bottom of the page has links for 'FAQS' and 'POST YOUR INTERNSHIP OPPORTUNITY'.

Partner with USDA Rural Development and Other Federal Agencies

NCAT works closely with USDA Rural Development and other federal agencies to promote priority programs and services to help improve producers' operations throughout the U.S. We work to promote these programs to our clients and to assist them with understanding and applying for the programs as part of our technical assistance. NCAT has always strived to leverage our ATTRA activities with other federal programs and private foundation funding that seek to accomplish complementary goals. Examples of ways NCAT has partnered with USDA agencies, promoted programs, and leveraged other funding include:

- NCAT regularly promotes USDA programs and information through our outreach channels. Some examples include:
 - Promotion of USDA funding opportunities via the ATTRA website, social media, and *Weekly Harvest* e-newsletter
 - Promotion of USDA's Rural Energy for America Program on the ATTRA website and Facebook pages

- Promotion of USDA disaster assistance resources
- Several podcast episodes that feature farmers discussing USDA programs they have leveraged on their farms

- NCAT collaborated with Rural Development, Farm Service Agency, and Natural Resources Conservation Service for each Armed to Farm training. RD, FSA, and NRCS staff presented on their programs and services to Armed to Farm participants.
- NCAT is collaborating with USDA Food and Nutrition Services to offer farm to school trainings to producers.
- NCAT is leveraging funding from USDA's Transition to Organic Production Program to offer training and assistance to producers interested in transitioning to organic production.
- NCAT is leveraging funding from USDA NIFA AgVets to expand the reach of Armed to Farm. These programs utilize ATTRA resources and technical assistance to train and support farmer veterans.
- NCAT is leveraging funding from USDA NRCS Urban Agriculture Initiative to host community farming workshops in the Southeast U.S.

Kudos from our clients

"[ATTRA] has a been great resource for me to share with beginning farmers...It's sort of a one-stop-shop which is super helpful!" –Commercial producer, Tennessee



Task 5: Evaluate Our Services and Impact

NCAT contracts with an external evaluator to conduct an evaluation program to understand who utilizes ATTRA, client satisfaction, and the impact of our work. Evaluation results confirm that ATTRA is in alignment with USDA Rural Development's (RD) priorities to improve the economy and quality of life in rural America. ATTRA provides resources to diverse and underserved populations. The program year survey found that **78%** of respondents are small-scale producers with 100 acres or less; **65%** of respondents are beginning farmers; **27%** of respondents who reported being commercial producers are veterans, compared to **9%** of producers nationally; and **55%** of commercial producer respondents are female, compared to **36%** of all U.S. farmers.

In a recent use survey, over **93%** of respondents indicated that they gained useful information from ATTRA workshops, and **80%** plan to make changes to their operation based on what they learned. Nearly half (**44%**) of respondents reported that they had already changed their production practices based on the information gained through ATTRA resources and trainings. ATTRA clients reported improvements to soil quality, quality of life, income, and job creation based on information received from ATTRA.

Summary

NCAT's ATTRA program continues to offer trusted, practical solutions to farmers, ranchers, and educators across the U.S. ATTRA is successfully utilizing a variety of methods to engage with farmers and ranchers, connect them to the resources they need, and facilitate peer-to-peer learning opportunities.

We have enjoyed working with various USDA agencies to leverage ATTRA, expand its reach, and improve the quality of service to America's agriculture communities. NCAT, through the ATTRA program, is well suited to meeting the needs of clients, as we offer trusted resources, practical training, and technical expertise at a level our clients want.

Kudos from our clients

"I am pleased to be part of a community of like-minded individuals and find inspiration to make changes for more productive growth with less inputs." —Garden operator, Colorado



ATTRA is a program developed and managed by the National Center for Appropriate Technology (NCAT). We are committed to providing high-value information and technical assistance to farmers, ranchers, Extension agents, educators, and others involved in sustainable agriculture in the United States.

attra.ncat.org • 1-800-346-9140 (1-800-ASK-NCAT)

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