

# OSU South Centers Connections Newsletter

Winter 2014

## 2013 ACHIEVEMENTS EDITION

### The Ohio State University

#### South Centers include:

- Piketon Research and Extension Center
- Aquaculture Research & Development
- Business Development Network
- Endeavor Center for Business Incubation
- Horticulture Research & Education
- Soil, Water & Bioenergy Resources

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## The Ohio Direct Marketing Team 2013 In Review

### Education to improve knowledge and practices

Each year, direct marketing educational sessions and materials reach more than 5,000 professionals including small and medium scale producers, food processors, farmers' market managers, grocery store managers, chefs, winery operators, beekeepers, aquaculture farmers, Christmas tree growers, garden center owners, community leaders, tourism professionals, economic developers, entrepreneurs, scholars, international visitors and OSU students.

The Ohio Direct Marketing Team monitors trends, conducts research, and develops educational programs and resources to prepare producers to take advantage of emerging market opportunities.

Introductory and in-depth education is provided through online tools, webinars, seminars, workshops, and special events.

### 2013 Highlights Include:

\* 932 entrepreneurs participated in Maps & Apps mobile media marketing webinars, seminars, workshops, and online learning.



\* 250 food producers and professionals participated in MarketReady education.



\* 550 people learned about Farm to School.



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

## Direct Marketing Conference Highlights

Each year, direct marketing team members present marketing education at more than 20 state and regional conferences.

## National Conference Presentations

Requests for team members to present our programs on a national level continue to increase. 2013 presentations include:

- National Food Distribution Research Society Conference
- Community Development Society Conference
- Galaxy National Extension Conference
- Extension Risk Management Education National Conference

## Guest Lectures

Team members guest lectured for:

- OSU undergraduate and graduate students.
- International visiting scholars from 3 countries.
- State Extension events throughout the country, including the Idaho State Extension Conference.

# The Ohio Direct Marketing Team 2013 In Review continued:

## Special projects to serve Ohio's diverse food & ag industry

New and emerging programs include:

- **Aquaculture Product Marketing:** As part of a USDA Beginning Farmer and Rancher project, the direct marketing team partnered with the OSU South Centers and the Ohio Aquaculture Association to provide introductory, intermediate and intense marketing education, which is combined with business and production education. MarketReady education has been customized for this industry segment.
- **MarketReady – School Market:** The North Central Risk Management Education Center funded development and delivery of education to help producers prepare to enter the school market. Ohio's food service programs serve more than 1 million meals daily at over 4,000 sites.
- **Webinar Series:** In 2014, one-hour webinars will be offered to bring exceptional speakers to your home, office or local Extension center. If you're interested in finding out more about marketing topics and issues, visit the website for details. Webinars are scheduled for the last Thursday of the month, from noon – 1:00 p.m.
- **Hops Marketing:** With increasing interest in craft beer, local wine, and specialty spirits, producers are presented with new opportunities. One new area with remarkable growth during the past year is hops.
- **History:** During Extension's 100 year anniversary in 2014, the Ohio Direct Marketing team will work together to capture, share, and celebrate the rich and diverse history of direct marketing in Ohio.



## Economic development to support market access & conditions

With more than 18,934 site visits and 1,600 registered businesses, the Ohio MarketMaker program plays an important role in connecting Ohio's food producers and local buyers.

This web-based industry resource would not be possible without the support of the growing national MarketMaker network and our Ohio partners: the Ohio Department of Agriculture/Ohio Proud, Ohio Farm Bureau/Our Ohio, Ohio Grape Industries Committee, the Center for Innovative Food Technology (CIFT), and Ohio Produce Growers and Marketers Association (OPGMA).

The Ohio Food Forum provided producers with the opportunity to meet the buyers. This one-day tradeshow and special event was hosted by the Ohio Department of Agriculture and OSU Extension. To improve buyer access to local products and help producers develop sales opportunities, similar formal and informal events are held throughout the state. This event was grown from the success of the 2010 Local Food Summit and marketing panels hosted during MarketReady workshops.



# Ohio Aquaculture Extension Program (AEP) 2013 Highlights

By: Dr. Laura Tiu, Director AEP

2013 was a banner year for the Aquaculture Extension Program (AEP) as it was the kick off of our Aquaculture Boot Camp Project (see accompanying article). The team spent much of the year serving the needs of our Intensive, Intermediate and Introductory aquaculture clients with conferences, workshops, tours, and email and phone support.

The Extension Team coordinated three workshops in 2013. The first was a collaborative effort with the Ohio Aquaculture Association in Wooster Ohio. Many of the presentations from that workshop are available here: <http://southcenters.osu.edu/aquaculture/presentations/aaa-workshop-presentations-2013>.

In May, we partnered with the Ohio Soybean Council and Yellow Spring Instruments (YSI) to host the Fish Feed and Nutrition Workshop at the YSI headquarters in Yellow Springs, Ohio. Kentucky State University was the site for an August Marketing and Processing Workshop. The year finished off with an October Bus Tour of Farms.

Aquaculture Specialists presented information at multiple workshops throughout the year, including the Urban Farm Workshop, Aquaculture America, and the North Central Region Aquaculture Center. Two webinars, a growing method of sharing information, were conducted on aquaponics and freshwater prawn culture.

Multiple groups, both local and international, enjoyed tours of the Aquaculture Research Center. Visitors from Ukraine, Ireland, China, Albania, Kenya, Senegal, and Egypt learned about the research and Extension programs at the South Centers. Local groups from the Ohio Department of Agriculture, the College of Food, Agricultural, and Environmental Sciences, Ohio Agricultural Research and Development Center, and the OSU Staff Advisory Council all toured the Center. Many schools also participated in tours including Eastern Pike High School Science

Club, University of Rio Grande, Hocking College, Shawnee State University, and Wienland Park representatives. 4-H members participating in STEM (Science, Technology, Engineering, and Math) Camp at Canter's Cave toured the facilities as well and learned about the STEM connection to the aquaculture industry.

Several demonstration projects were conducted this year. Extension specialists worked with a private grower to explore the feasibility of paddlefish culture in Ohio. Additionally, work began on an economic analysis of the process of converting existing agriculture barns for aquaculture production. Finally, a series of aquaculture videos were produced and will be available in early 2014 on our website.

Aquaponics was a hot topic this year and an aquaponics list serve was created to enhance the flow of information. Additionally, aquaculture and horticulture specialists at the South Centers teamed up to build the Center's first aquaponics system. So far, we have successfully produced Russian kale, red lettuce, and mizuna in the system using both tilapia and yellow perch. Additional research will be conducted in 2014 to further refine the project.



Harvesting paddlefish



ABC recruits processing yellow perch.



Comparing culture media in an aquaponics system.



## 2013 Aquaculture Boot Camp Graduation

By: Dr. Laura Tiu, Director AEP

PIKETON, Ohio – Aquaculture Boot Camp (ABC) at the Ohio State University South Centers is a USDA-funded training program designed to train new and beginning farmers in aquaculture production and business in Ohio. The first class of 25 recruits started the program in January 2013 and completed 12 months of intensive training and activities coordinated and taught by a team of Aquaculture, Business and Marketing Specialists, with ongoing support and mentoring from members of the Ohio Aquaculture Association. Activities included a variety of hands-on aquaculture production techniques including three class projects. Additionally, recruits attended three professional conferences, a bus tour of farms, and received ongoing, personal business planning assistance.

On December 14, 2013, over 50 students, trainers, and supporters came together to celebrate the first graduating class of the ABC program. Twenty of the original 25 recruits fulfilled their training and obligations and were awarded certificates of



Dr. Laura Tiu, speaking to ABC class of 2013

completion. The event kicked off with a memory show of photos highlighting the many events and activities that occurred over the year of the program. Graduates of the program were exposed to a variety of experiences and people who will contribute to the success of their aquaculture enterprises.

The highlight of the graduation program was the student presentations. Each student prepared a five minute PowerPoint presentation describing who they are, why they joined ABC, what they learned and what they plan to do upon course completion. The results were impressive and varied, with many innovative businesses in the works. Many expressed appreciation for the ABC and the trainers and said that the program had increased their knowledge and confidence levels immensely. After a year of sharing and exchanging knowledge, the program has built a strong network of enthusiastic and committed farmers who will become mentors for the aquaculture industry in Ohio.

The newly 2014 Class began their journey in early January. While the intensive ABC program is subject to an application process, anyone who wants to learn about the program or follow along online can visit the ABC website at <http://go.osu.edu/abc>.

## New Midwest Blueberry Production Guide is available from OSU South Centers

By: Gary Gao, Ph.D. Extension Specialist and Associate Professor, OSU South Centers, and Adjunct Associate Professor, Department of Horticulture and Crop Science

I am very excited to inform everyone that a new "Midwest Blueberry Production Guide" has been published. It is available to purchase from the OSU South Centers. A group of us from The Ohio State University, University of Kentucky, Michigan State University, Penn State



University, University of Arkansas, University of Illinois, and University of Missouri have worked on this publication for two years. Dr. Nicole Ward Gauthier of the University of Kentucky was the lead author of this publication. She certainly was the main driving force behind the publication. This is why the production guide was published by the University of Kentucky. I wrote the "Soils, Fertilization, and Nutritional Disorders" chapter and contributed lots of photos. As you can easily imagine, we are very proud of this publication. It should serve as very handy reference for all blueberry growers in the Midwest!

You can purchase this new production guide by stopping by OSU South Centers in Piketon to purchase a copy at \$15.00, which includes sales tax.. The other option is to order by mail with a check or a credit card at \$20.00 per copy with sales tax, shipping and handling included. To order a Midwest Blueberry Production Guide, contact Charissa McGlothlin at [mcglothlin.4@osu.edu](mailto:mcglothlin.4@osu.edu) or by calling 740-289-2071, ext. 132.

I would like to take this opportunity to extend my sincere appreciation to the Ohio Department of Agriculture and United States Department of Agriculture for a specialty crop block grant which helped with the production of the Midwest Blueberry Production Guide. All of my photos are either from our research plots at OSU South Centers in Piketon or from blueberry farms I visited as a part of the grant. Our research results were made possible by this grant as well.

## Aquaculture Research Achievements and Impacts 2013

By Dr. Hanping Wang, Senior Scientist

**Summary of Achievements:** In 2013, in collaborations with the Ohio State University Department of Animal Science, University of Wisconsin-Stevens Point, Lincoln University of Missouri, the Ohio Soybean Council, Mill Creek Perch Farms, LLC, and several international institutions, we accomplished nine research studies and projects including on-station and on-farm tests of improved yellow perch, published four journal articles and five proceedings papers, received two grants, trained six graduate students, post-doctoral fellows and scholars, completed six new grant proposals, chaired one international forum, and made 6 presentations at international conferences, including two as an invited speaker.

**O’GIFT (Ohio Genetic Improvement of Farmed-fish Traits) Program:** The O’GIFT program is expected to increase aquaculture production of perch, bluegill, and largemouth bass by 35-50% through the development of genetically improved broodstock for producers.

**Yellow Perch Breeding:** Multiple improved lines of yellow perch have been developed, and over one million genetically improved fish have been distributed to fish farms. Three male populations with a female genotype have been created, which could produce fast-growing all-female populations for the aquaculture industry. Three projects related to sex-control and breeding were completed and three manuscripts on these are in preparation or in revision.

**Bluegill Breeding:** Three experiments related to sex-control and genotype by environment interaction on sex ratio were completed. The findings on effects of temperature and genotype on sex determination and sexual size dimorphism of bluegill sunfish has been published in *Aquaculture*, a prestigious international journal. The results from these experiments provide a valuable base for developing all-male broodstock for bluegill, which could grow 35-50% faster than mixed populations.

**On-station and on-farm tests of improved yellow perch:** The 3-year project of the on-station and on-farm tests of genetically improved yellow perch was completed on three sites in two states using both separate rearing and communal rearing methods in 2013. This is an important step for commercialization of genetically improved strains. The testing results showed improved fish exhibited 27.6% - 42.1% higher production, and 25.5% - 37.5% higher growth rates even while having 12.3% - 27.8% higher survival than local strains on the average across the three sites.

**Aquaculture Genetics and Breeding Laboratory:** This is the first lab of its type in the Midwest and is crucial to the success of the GIFT program and improvement of farmed-fish traits. In this lab, genetic relatedness charts and genetic pedigrees of selected broodfish have been constructed for breeding programs for the past years. Family identification technology using DNA for selective breeding in yellow perch and bluegill has been established. Genotyping for 700 yellow perch from the on-farm testing sites for performance evaluation, and 800 fish from the breeding center were used to construct genetic relatedness charts which were finished in 2013 for the breeding program. The data generated from the lab in 2013 has contributed to fourteen papers in prestigious international journals and proceedings, including nine published in 2013 and five in review or preparation.

**International training program:** Leading research in aquaculture genetics and breeding at the OSU South Centers has attracted more than twenty scientists and international scholars to work in the aquaculture research center and genetics lab at Piketon. In 2013, the lab trained six visiting Ph.D. students and international scholars from Egypt, China, India and Pakistan. They also significantly contributed to the aquaculture program’s success at OSU South Centers.

# Business Development Network—2013 Impacts and Achievements

## **Growing! Ohio Farmers' Markets**

By Christie Welch, Farmers' Market Specialist

The OSU South Centers' Growing! Ohio Farmers' Markets program is working with Ohio farmers' markets to increase access to fresh, locally produced and healthy foods by providing technical assistance and training for markets that are interested in accepting Supplemental Nutrition Assistance Program benefits at farmers' markets. Technical assistance has been provided to help Ohio farmers' markets navigate the process, procure the needed equipment, share best management and marketing practices, and as a result increase the number of Ohio farmers' markets that accept SNAP. To date, the number of Ohio farmers' markets accepting SNAP has risen from 55 in 2012 to 69 in 2013 and are located in 25 of Ohio's 88 counties. As of December 2013, there are 8 additional farmers' markets that are approved to accept SNAP and should begin accepting these benefits in the 2014 market season bringing the total markets in Ohio accepting SNAP to 77 markets in 2014.

The Growing! Ohio Farmers' Markets program works closely with the Ohio Department of Job and Family Services EBT Section, which serves as the SNAP administrator in Ohio, to track the change in SNAP sales at Ohio farmers' markets. According to ODJFS, there was a 9% increase in SNAP sales at Ohio farmers' markets from 2012 to 2013, not including sales data for November and December of 2013 which was not yet available.

In addition, the 4th annual Ohio Farmers' Markets Conference was held in March of 2013 at the Nationwide and Ohio Farm Bureau 4-H Center. One hundred individuals attended the two-day event and results of the evaluations indicate it was "the best one yet." Plans are under way for the 2014 conference which will be held in March in Dublin, Ohio.

## **International Trade Assistance Center (ITAC)**

By: Kelly O'Bryant, Director

The International Trade Assistance Center (ITAC) at the Ohio State University South Centers in Piketon serves as Appalachian Ohio companies' first point of contact for information, resources, referrals and consultation for the new-to-export, new-to-import, and businesses expanding their current exporting capacity. Helping to connect Ohio entrepreneurs and small businesses with new buyers and new markets abroad is the ITAC's primary focus. In 2013, The OSU South Centers ITAC invested over 709 hours assisting sixty companies to enter or expand into international markets. These companies sold over \$5 million in products/services to more than 10 countries worldwide. Eleven companies made first time sales in a new international market.

The ITAC staff assists companies by providing no-cost, in-depth and confidential counseling, including:

- assessment of a company's global readiness
- securing international market research and regulatory information
- development of an international business plan
- international transaction assistance
- networking with service providers
- introduction to federal and state government agencies that provide services, programs, and financial resources to companies seeking to export
- training opportunities

## Business Development Network—2013 Impacts and Achievements continued:

### OSU Endeavor Center

By: Ryan Mapes, Endeavor Center Manager

2013 was once again a successful year for The Ohio State University Endeavor Center. Open since 2005, the 27,000 square foot mixed-used business incubator has come to be recognized as a community leader in economic development, business training, and technological excellence.

The original 26 permanent office spaces were expanded to 31 to satisfy demand for the flexible and professional office space provided in the facility for new and growing businesses. The latest renovation was completed to house the Manufacturing Field Engineer for the Manufacturing Extension Partnership – a position designed to provide assistance for small manufacturers in Southern Ohio.

Despite the difficult economy in the past year, Endeavor Center business partners flourished. With work proceeding on several projects at the Portsmouth Gaseous Diffusion facility, available space at the Endeavor Center was very difficult to find. The facility housed 21 individual businesses during the year and operated at more than 100% of its original occupancy capability. Endeavor Center business partners drove a surge in hiring, adding over 150 high-skill, high-wage positions during the year.

In the last five years of operation, The Ohio State University Endeavor Center and its business partners have:

- Created more than 1,275, high-skill, high-wage jobs, adding more than \$105 million of direct economic activity to the local community
- In cooperation with the Small Business Development Center of Ohio, sponsored or conducted 300 business workshops, training sessions and seminars with nearly 5,000 attendees – business owners, prospective entrepreneurs and ambitious employees seeking to improve the profitability of their businesses so they can grow and provide additional employment opportunities for those in the community
- Directly and intimately assisted over 100 small businesses to tackle obstacles to growth, supplying strategic and space resources required for expansion, resulting in the graduation of more than 2 dozen partners to the construction of their own facilities or expansion into larger facilities in the local commercial real estate market
- In 2013 alone, over 100 business workshops, seminars, training events, and planning sessions were conducted in the Endeavor Center classrooms, attracting more than 1,500 participants. The OSU Endeavor Center has become a hub of business activity and training in southern Ohio, and is a recognized leader in assisting businesses with expanding and improving their operations. Overall, the economic impact of new positions created by Endeavor Center partners since its opening has had a major positive influence on the economic vitality of the region.

**Money for Business Conference**  
**March 27, 2014 - 9:00 am - 4:30 pm**  
**OSU Endeavor Center, Piketon, OH**

**Registration \$25 per person. To register, contact Jennifer Warfe 740-289-2071 x301 or [warfe.2@osu.edu](mailto:warfe.2@osu.edu)**

# Business Development Network—2013 Impacts and Achievements continued:

## **Manufacturing and Technology Small Business Development**

By: Brad Bapst, Director MTSBDC

The OSU South Centers partners with Ohio Development Services Agency to provide the Ohio Region 7 Manufacturing and Technology Small Business Development Center. The MTSBDC provides one-on-one confidential consulting and workshops on relevant topics for Ohio's small manufacturing businesses and technology industries. The MTSBDC serves as the initial point of contact for information, resources, referrals, and counseling for small manufacturing businesses and technology industries that are seeking to enhance current practices or develop and commercialize new technology. The primary customers of the program are small to mid-size manufacturers with less than 50 employees seeking counseling and education services in the following areas:

- Business process improvement
- Strategic and business planning
- Intellectual property issues and marketing
- New product development and commercialization strategies
- Basics of patenting, trademarks, and copyrights
- Financial analysis/access to capital resources
- Workforce development

The MTSBDCs have long been identified as the resource within the Ohio Small Business Development Center network that serves the needs of clients seeking assistance in commercialization and technology. The combination of the MTSBDC network and the local SBDCs working in harmony provides rapid access to the specialized expertise needed to assist with business planning, marketing and sales, developing financing options, and accessing state and federal assistance programs including the SBDC network's International Trade Assistance Centers (ITAC), and Ohio's Procurement Technical Assistance Centers (PTAC).

The MTSBDC program has been working closely with the Ohio Manufacturing Extension Partnership (MEP) at the OSU South Centers. The two programs have developed a complementary approach to serving the needs of manufacturing companies in the region. The MEP provides in-depth technical assistance in the areas such as Lean Manufacturing, Kaizen/5S, and Management Leadership. The MTSBDC focuses on the areas of business planning, financial analysis, and access to capital sources. Businesses are beginning to utilize the wide array of services the complementary programs offer to help them with all aspects of their growth.

The Manufacturing and Technology Small Business Development Center provided 601 counseling hours to 44 client companies during 2013. Those companies reported a \$2 million increase in sales and an investment of \$1 million in capital as a result of the assistance the center provided. The counseling efforts of the MTSBDC also resulted in the creation of 123 new jobs and the retention of 547 jobs in southern Ohio.



# Business Development Network—2013 Impacts and Achievements continued:

## **Manufacturing Extension Partnership (MEP)**

By: Mike Rowe, Manufacturing Field Engineer

The Ohio State University South Centers has partnered with the Appalachian Partnership for Economic Growth to rollout Manufacturing Extension Partnership (MEP) services to small manufacturers in Appalachia Ohio. To ensure Ohio's industrial base prospers in the 21st century global economy, the Ohio MEP provides products, services, and assistance dedicated to the productivity, growth, and global competitiveness of Ohio manufacturers. At OSU South Centers, Mike Rowe is the MEP Manufacturing Specialist on staff that offers services to companies in many areas such as: technology acceleration, supplier development, sustainability, workforce and continuous improvement. The OSU South Centers is able to provide a highly focused and detail-oriented approach to each individual company's specific challenges and opportunities. In 2013, the MEP program met with over 70 companies and completed 40 projects. All of these projects were at no cost to the companies. Some of the projects delivered were:

- Value stream process mapping (Looking to identify wasted steps and processing in the production flow)
- Training companies on 5S (Sort / Set in Order / Shine / Standardize / Sustain)
- Lean manufacturing (Looking at inventory reduction /setup reduction/batch sizes. Training companies on utilizing all available resources, including employees, to find improvement opportunities.
- Conducting effective meetings
- Website development
- Time studies
- Developing standard work instructions
- ISO training
- Leadership development training

## **Business Talk**

By: Patrick Dengel, Business Development Specialist

Business Talk is an educational tool developed from the collaboration between The Ohio State University South Centers and University of Rio Grande.

The Ohio State University South Centers in Piketon partners with the University of Rio Grande to assist business students with service projects that provide experiential learning geared to their formalized education. Due to the contractual agreements between The Ohio State University and The University of Rio Grande, learning objectives, tasks, and scope of activities of the students are to be verifiable by the Program Coordinator based on needs of each student.

One such activity included "Business Talk," an Educational Access TV and Internet Radio talk show hosted weekly to discuss business and educational information. Business Talk started its fourth year with a new studio located on the top floor of the Jeanette Albiez Davis Library. The University of Rio Grande MBA and Undergraduate students have been assisting with the shows by participating in scheduling, co-hosting, undertaking one-minute promotions, and acquiring background information on upcoming guests.

Although 'Business Talk' was initiated as a training tool for MBA and undergraduate students, a secondary result has emerged that was not anticipated. Since the 'Business Talk' Shows are archived on Blog-Talk Radio and YouTube, there have been 20,000 hits. Equally, over 163 countries have 'touched' one of the internet radio broadcasts or viewed the YouTube shows. Likewise, a few guest speakers have placed Radio and YouTube addresses on their own websites for further viewing of their content.

The Mission of "Business Talk" has been to promote:

- The Ohio State University South Centers and its many business technology programs. The University of Rio Grande and its diverse educational programs.
- Promote small businesses that impact southern Ohio economic programs.
- The various small business and economic support organizations.

Each week at 1:00 pm on Wednesdays, students, staff, and faculty at the University of Rio Grande; business specialists and educators at the Ohio State University South Centers; personnel from supportive business organizations; and business owners located throughout the area are interviewed for the Business Talk program.

In addition to MBS students, co-hosts include Jason Winters, Director of the Center for Small Business Entrepreneurship and Business Faculty Chair Mike Thompson, Director of the Instructional Media and Design Program, both with the University of Rio Grande, and Patrick Dengel, Business Development Specialist with The Ohio State University.

## Business Development Network—2013 Impacts and Achievements continued:

### Ohio Cooperative Development Center

By: Christie Welch, Program Manager

Over the past 5 years, OCDC has successfully assisted clients and cooperatives to improve the economic condition of rural Ohio. Over this time, the clients that the Ohio Cooperative Development Center (OCDC) has assisted have formed 34 cooperatives and cooperative-like organizations in various industry sectors ranging from local foods, commercial exhaust cleaning, manufacturing, and healthcare, resulting in the creation of 106 new jobs, and the retention of 123 jobs. In 2013 alone, these cooperatives invested \$636,000 and generated nearly \$1 million in new sales, created 27 new jobs, and retained 58 jobs. In addition, new and emerging cooperatives have been awarded \$9,000 in seed grants that assisted them in exploring the feasibility of their enterprises, developing marketing materials to increase revenues, and enabled them to work with professional service providers to ensure their business is poised for successful start-up and/or growth.

The OCDC continues to work with the Ohio State University and West Virginia University Extension Educators to increase access to cooperative development technical assistance in communities throughout Ohio and West Virginia.

This cooperative development partnership actively facilitates critical community projects such as food hub development by assisting in the expansion of local efforts to create full-time, profitable, financially viable local food businesses. The USDA defines a food hub as: “a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally and regionally produced food products.” The OCDC understands that farmers are critical in these efforts and give consideration to maintaining and even assisting to increase the number of farming professionals.

Examples of new and emerging cooperatives that are helping improve the economic condition of rural Ohio and West Virginia include:

Our Harvest - the first unionized worker-owned cooperative in Ohio has formed and is growing rapidly. Our Harvest has adopted the Mondragon worker-owner cooperative model to create family sustaining jobs in Cincinnati while at the same time working to provide equal access to locally produced fresh foods. Our Harvest, a food hub serving the Cincinnati area, is supplying local foods produced by its worker-owners as well by other local growers. The co-op recently received funding from CoBank and Farm Credit Services to help this new and emerging cooperative expand its production, aggregation, and distribution of locally produced foods for the Cincinnati region. In addition, Our Harvest is working to grow new growers through an apprenticeship program and training farm. As participants of the program graduate, they can then become worker-owners of Our Harvest ensuring future generations of farmers for the region.

Uni-Serve USA is a cooperative of seven privately-owned commercial exhaust cleaning companies across the United States. The cooperative allows restaurant groups to have the convenience of centralized billing and reporting that comes along with the national coverage, as well as the customer service and immediate response that you get from a local service provider. Uni-Serve USA currently has 20-plus companies as cooperative owner/members and a preferred vendors list that reduces the cost of doing business by acting as one company instead of several small companies.

# Business Development Network—2013 Impacts and Achievements continued:

## Small Business Development Center (SBDC)

By: Ryan Mapes, Director, District 7 SBDC

The Ohio State University South Centers Small Business Development Center (SBDC) is a six-person office with a Director, three full-time Certified Business Advisors®, two part-time counselors with specializations in social media and technology commercialization, and an administrative assistant. The District 7 SBDC Center also utilizes a unified delivery model to incorporate resources from other programming affiliated with The Ohio State University South Centers, including an International Trade Assistance Center, Manufacturing and Technology Small Business Development Center, Ohio Cooperative Development Center, Manufacturing Extension Partnership, and OSU Extension programs. The SBDC won the top performing center in the Columbus SBA District and was nominated for the multi-state 2014 SBA Small Business Development Center Service Excellence and Innovation award by the State Lead Center located within Ohio Development Services Agency.

In 2013 the OSU South Centers SBDC provided 4,915 one-on-one consulting hours to 443 clients. As a result, the clients started 25 new businesses, obtained \$9,405,750 in loans and other capital, created 190 jobs, and increased sales by nearly \$3,000,000. The SBDC also provided 23 training sessions with 286 attendees. Training topics included general business management and growth principles, Microsoft Office products, and social media management for small businesses.

Regional partnerships are the primary source of referrals for the District 7 SBDC. The South Centers maintains formal agreements with three local universities for regional economic development collaboration. The SBDC also utilizes formal Memorandums of Understanding with the Southern Ohio Procurement Outreach Center, the district's PTAC, and Pike County Community Action. These relationships help the region's entrepreneurs, business owners, and small manufacturers with technical assistance and training.

The OSU South Centers SBDC Center also participated in multiple entrepreneurial focused events throughout the year such as: Biz Launch, Aquaculture Boot Camp, Business Blog Talk, From Dream to Reality, and the SOACDF Agricultural Diversification Initiative.

Biz Launch was a ten-county business plan competition for start-up or expanding businesses. The competition provided \$20,000 in prize money sponsored by two local banks and a large corporation in the region. Over 20 businesses or individuals participated and the awards ceremony drew a large crowd from across the area.

Aquaculture Boot Camp was a year-long training program serving the entire state of Ohio to develop new farmers in the aquaculture industry. The program couples business planning and scientific technical assistance for the potential new aquaculture producers. The 2013 class graduated 23 participants and the 2014 class has 25 participants. The SBDC provided all-encompassing counseling to the business aspects of aquaculture operations.

Business Talk is a weekly podcast that incorporates business resources and highlights entrepreneurial success in our region. Over 6,505 listeners have tuned in from around the globe. This is a unique and innovative approach to communicate with our clients and partners about the services available and share success stories that help with marketing the businesses of OSU South Centers clients.

From Dream to Reality is a five-week course that meets twice a week and is designed to provide an opportunity to learn a variety of skills needed to own and operate a business. This course is offered two times per year through a partnership with the Pike Community Action Agency.

Agricultural Diversification Initiative is an annual program for agribusiness and next generation farmers to diversify from tobacco production into other profitable agricultural ventures and is supported financially by Southern Ohio Agricultural and Community Development Foundation.

The OSU South Centers SBDC acted as a champion for the businesses in District 7, advocating on behalf of clients to help them attain their business goals. The counselors often assisted with open house planning, flyer development, and new product launches for our clients. Assistance with press releases and advocating with local chambers and economic development organizations on the client's behalf continues to be a common practice.

The staff of The OSU South Centers SBDC continues to engage community organizations to maintain awareness of changing needs in the regional entrepreneurial ecosystem and develop solutions to combat any negative impact to the economy. Counselors volunteered time to serve as board members on several chambers of commerce, a regional board established to support economic development, and advisory boards for business organizations to increase awareness of business issues and identify solutions to problems.

## Horticulture 2013 Program Highlights

By: Brad R. Bergefurd, MS— Extension Educator Agriculture and Natural Resources Horticulture Specialization

New funding in the amount of \$10,000 was acquired to expand Integrated Pest Management Extension programming and monitoring in the Ohio Valley EERA. Pest emergence data was collected and assisted farmers with pest management decision-making through this early detector information. Workshops, field days and trainings on the use of IPM were taught.

The Scioto & Pike Agriculture Newsletter published by Brad Bergefurd was recognized by the National Association of County Agricultural Agents (NACAA) with a state communications award for team newsletters in 2013. Many of the articles authored and edited were republished in other media outlets across the Midwest reaching over 300,000 people.

The Ohio State University Extension Master Gardener training curriculum was introduced as a part of the Southern Ohio Correctional Farm (SOCF). Inmates were taught how to cultivate over 1 1/2 acres of sweet potatoes, red potatoes, radishes, green beans, cauliflower, bell peppers, watermelon, carrots, onions, zucchini, lettuce, beets, and corn. On-going education on the Master Gardener curriculum is provided on the establishment, production, management, and pest control of the education fields.

On-farm and applied field research trials were implemented to discover innovative production practices applicable to area farms. \$19,640 in funding was received to conduct research in areas of nutrition programs and genetic variation on physiological fruit disorders of tomato which caused over \$2 million dollars in income loss to area tomato growers in 2012. Trials were conducted to identify freeze protection techniques and new genetic material for strawberry crops; to evaluate new tomato germplasm that shows resistance to disease, insects, and fruit disorders and acceptance in the marketplace.

A new hops research and education program was established at Piketon and Wooster/OARDC to research the potential of hops as a new high value specialty crop for the growing Ohio microbrewing industry as a part of the \$111,250 in USDA funding that was received for the specialty crop project "Hop Production to Enhance Economic Opportunities for Farmers & Brewers." This two year field research, extension education, and marketing research project in cooperation with Dr. Mary Gardiner with the OSU Department of Entomology is evaluating the feasibility and profit potential of small-scale hops production by Ohio producers.

Education and assistance was provided to five southern Ohio community garden projects. Combined, they have provided over 20,000 pounds of fresh fruits and vegetables to local food pantries including the Salvation Army, God's Pantry at Second Presbyterian Church, Loaves & Fishes, and other area food pantries.

Brad Bergefurd assisted with development and coordination of a marketing plan for the Southern Ohio Correctional Farm (SOCF) to market over 30,000 pounds of produce to the Ohio Association of Food Banks.

The first class graduated from a state-wide Ohio Apprenticeship Council-approved Specialty Crop Grower Apprenticeship training program in cooperation with the USDA Cooperative Development Center at Piketon and the Non-Profit Local Food Network. The Apprenticeship Program trained individuals to become both independent and collaborative agricultural entrepreneurs. The program required 2,000 hours of on-the-job training coupled with 144 hours of experiential and classroom learning of which Brad Bergefurd and Tom Snyder taught a 4-hour session the first Wednesday of each month beginning in April. The program is designed to equip participants with broad background knowledge they will need to start self-sustaining specialty crops farms, serve as managers of for-profit or non-profit specialty crops farms, or be highly capable farm employees.

As part of a \$1.1 million grant from the U.S. Agency for International Development and Higher Education for Development, Bergefurd provided expertise, education, and recommendations for micro irrigation and vegetable crop mechanization as a part of the OSU CFAES partnership with Senegal's Université Gaston Berger to assist with the build-up of that West African nation's agricultural research and outreach capabilities. Agricultural mechanization used in the United States was adapted to animal traction used in Senegal, making the use of a tractor not necessary for African farmers to adopt this technology.

\$10,000 in funding was acquired from the Ohio Integrated Pest Management Program (IPM) to expand Ohio IPM Extension programming into the Ohio Valley EERA to assist growers in south central Ohio with fruit and vegetable IPM education and implementation. By implementing IPM education and scouting activities in this area, data collected will assist Educators/growers in central and northern Ohio by providing them with early detector information to change production schedules and become more aware, better educated and prepared to cope with economic crop damaging insect and disease pathogens.



Hops plant in early stage when the vines are being trained to climb the support twine counter clockwise.



## Horticulture—Small Fruits 2013 Program Highlights

Gary Gao, Ph.D. Extension Specialist and Associate Professor, OSU South Centers, and Adjunct Associate Professor, Department of Horticulture and Crop Science, The Ohio State University.

### Key 2013 Educational Programs and Presentations

Key educational programs in 2013 were Ohio Berry School, Blackberry, Blueberry and Wine Grape Field Night, and the Northern Ohio Blueberry Workshop. These programs were very well received and drew a combined attendance of 180. Many research tours were also offered to various groups.

Dr. Gary Gao also made presentations all over the state. Some of these programs included the Ohio Produce Growers and Marketers Association (OPGMA) Congress, OPGMA Summer Farm Tour, Farm Science Review, Southwest Ohio Fruit and Vegetable School, and Medina County Small Fruit School. He also taught classes in Delaware, Hamilton, Ross, and Union counties.

### International Activities

In October 2013, Gary Gao went to China to teach classes on raspberry production in Shijiazhuang, Hebei Province. He was invited by the Hebei Agricultural Enterprises Association. When he was in Hebei, he gave a lecture, visited a research center, and conducted three farm visits.



A raspberry demonstration plot in Shijiazhuang, Hebei, China



A pick-your-own eco-farm in Hebei, China

Strawberry production is also big in Hebei, China. Instead of plasticulture, farmers in Hebei Province use a protective structure as shown in the picture. This is also designed for pick-your-own operations. Customers go through a tunnel as shown in the right-hand side of the picture.

While Gary Gao was in China, he also gave presentations at China Agricultural University in Beijing, Shanxi Agricultural University in Taigu, Shanxi, and Shanxi Fruit Research Institute in Taigu, Shanxi. It was a very productive trip for Gary. He learned as much from his Chinese counterparts as they learned from him!



A strawberry farm under a protected structure in Hebei, China.



## Horticulture—Small Fruits 2013 Program Highlights

More pictures from teaching trip to China:



A wine display at the Enology Research Library of the Food Science Department of China Agricultural University in Beijing, China. Photo by Gary Gao.



Raspberry Germplasm Repository of Beijing Forestry and Fruit Research Institute, Beijing, China. Photo by Gary Gao.

### Research Update:

The OSU South Centers has completed the grant requirements for the blueberry grant from the Ohio Department of Agriculture the final report is being compiled. "Draper" has turned out to be an excellent new blueberry cultivar. The plants are not huge, but are very productive. Fruit size and quality are quite good too. A small crop was harvested in 2013 and a much bigger crop from the 'Draper' plot is expected in 2014.

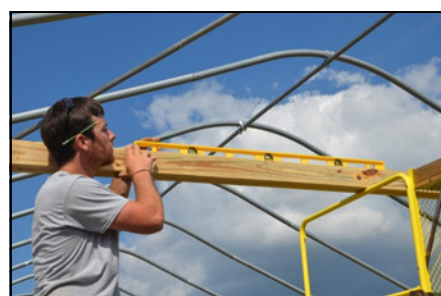
Several new raspberry plots have been planted as a part of the bramble specialty crop block grant from the Ohio Department of Agriculture. The new everbearing cultivar "Joan J" is a thornless red raspberry, which is very rare. Initial fruit yield and quality observations are quite promising.

A new high tunnel has been installed over a new raspberry planting. The total yield and fruit quality of red raspberries in a high tunnel will be compared to those raised in an open field.



Wayne Lewis, farm manager and Michael Daniels, student assistant, drill holes for a grape planting. Photo by Gary Gao

In the South Centers' research/ demonstration vineyard, new grape cultivars were added and a few cultivars were replaced in 2013. The vineyard has been featured during many research tours and workshops. A new red wine grape cultivar, "Regent," is showing quite a bit of promise. It requires less spraying and has very good wine quality. We are planning to add several new white wine grape cultivars, and are keeping an eye on several new cultivars from Cornell University and the University of Arkansas.. Thanks to the Ohio Grape Industries Committee for their financial support of our vineyard.



Ryan Slaughter, research assistant, is shown working on the new high tunnel. Photo by Gary Gao

# Soil, Water, and Bioenergy Resources

## 2013 Program Achievements

By: Dr. Rafiq Islam, Program Director

The Soil, Water and Bioenergy Resources program at The Ohio State University South Centers at Piketon provides science-based knowledge to clientele regarding sustainable agricultural practices, soil and water quality, advanced energy, and ecosystem services tools.

### RESEARCH IMPACT

#### State, Regional and National Level

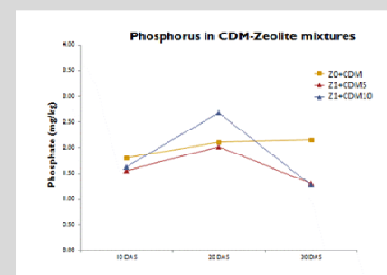
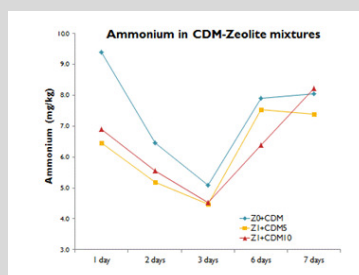
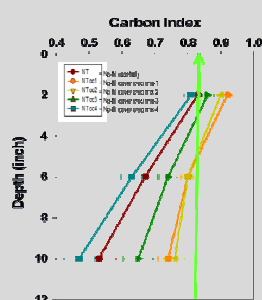
##### *Productivity and Economics of Organic Production*

The organic market continues to grow rapidly by 10% annually. Ohio produces 25% of the nation's organic spelt, 8% of its silage, and about 3% of other organic produce. Total farm gate revenue is estimated to be \$50 to 75 million per annum. Current organic systems rely heavily on excessive tillage-induced biological and ecological approaches which are not functionally efficient. Ohio farmers have shown a great interest using cover crop blends and Zeolite. However, there is limited research focused on helping producers use Zeolite and appropriate cover crop blends.

Through USDA Organic Transition funded and CERES Trust funded projects, we are impacting organic production research in Ohio using an innovative combination of conservation tillage, multi-functional cover crop blends, and Zeolite to assess and maximize ecosystem services. Our 2013 research results have shown that cover crop blends of winter pea, soybean, radish, carrot, oat, cereal rye, sun hemp, pearl millet, and Sudan-sorghum act as weed suppressors, bio-diversifiers, N providers, scavengers and recyclers of nutrients, and compaction alleviators, improving and drainage and building soil.



Our initial results have shown Zeolite holds ammonium-N ( $\text{NH}_4^+$ ) and other nutrients (e.g., P), increases the nutrient-use efficiency and reduce the amount (30%) of N and P fertilization as compost, biosolids, manures and humus. Zeolite was also found to retain a higher volume of water and mitigate drought effects. Our research on the use of Zeolite and multi-functional cover crop blends could potentially save up to \$100,000 per year for organic farmers in Ohio.



## Soil, Water, and Bioenergy Resources

### 2013 Program Achievements continued:

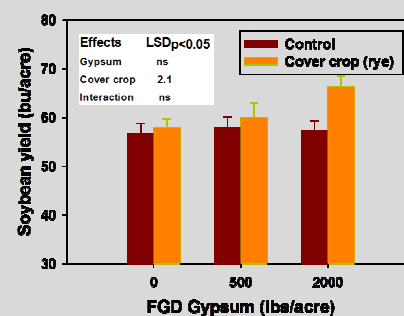
#### Drainage Ditches, Best Management Practices and Recycling of Reactive N and P

Our research work (funded by USDA-NIWQP) on “Integrated and Science-Based Management of Agricultural Drainage Channels in the Western Lake Erie Basin” is impacting farmers, educators, high-school students and scientists for management of agricultural drainage channels to protect and improve water quality by mitigating P and N pollution while meeting drainage needs essential for agricultural production sustainability.



#### Sustainable Soybean Production and Enhanced Ecosystems Services

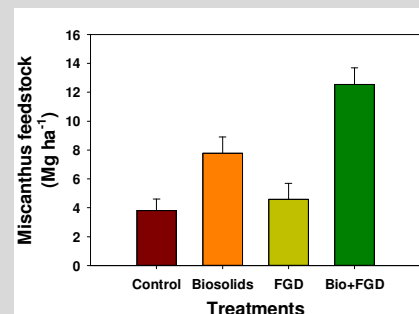
Using a research grant from United Soybean Board and Gypsoil in collaboration with USDA-ARS Drainage Research in Ohio, Indiana, and Alabama, Penn State University, and University of Kentucky, we are conducting research to grow soybeans continuously on marginal lands with cover crops and industrial flue gas desulfurized (FGD) gypsum. Our research results were presented at the Farm Science Review, Conservation Tillage and Technology Conference (CTTC), National No-Till Conference, and the Pennsylvania Farm Show with farmer's participation. This novel and integrated approach to the use of cover crops and Gypsum in continuous NT has helped to expand soybean yield and production on marginal lands in the Midwest.



#### Renewable Research

Marginal quality lands such as reclaimed strip mine land, highway right of way, and low quality sloping pasture or brushy land is relatively low priced and suitable to grow perennial crops and grasses as bioenergy feedstocks. Presently, we are managing seven bioenergy experiments to study on corn, sweet sorghum (annual vs. perennial), and sweet corn, Miscanthus giganteus, warm-season grasses, willow, Arundo donax, and Sudan-sorghum grass. These projects are funded/collaborated by: NE Sun grant (through the Department of Energy); Mendel Biotechnology, Inc., Hayward, CA; Repreve Renewables (Giant Miscanthus), Soperton, GA; Speedling, Inc. Ornamental and Energy Crop Divisions, Ruskin, FL; Konza Renewable Fuels, LLC, Meriden, KS; and New Polymer Systems, Inc., New Cannan, CT.

Our long-term research results have shown that applying sewage sludge @ 5,000 gal and FGD gypsum @ 4 ton/acre significantly increased Miscanthus feedstock production (15 to 20 ton/acre) for cellulosic ethanol and a valuable use of the waste products. Furthermore, our research has shown promise for the use of Miscanthus giganteus biomass for controlling soil erosion in the new construction areas rather than wheat biomass. Likewise, several biosolids treatment companies are working with us on using Miscanthus biomass as a core matrix for sewage sludge solidification.





## Soil, Water, and Bioenergy Resources

### 2013 Program Achievements continued:

#### International Impact

Over the years, the OSU South Centers has developed a national and international reputation in soil, water and bioenergy research. As a result, internationally funded graduate students, scientists, scholars and professionals as visiting scholars/post-docs from Bangladesh, Brazil, Ghana, India, Pakistan, Turkey, Uzbekistan, and Ukraine have joined our program for research and educational activities. In 2013, we have hosted 3 scientists as Fulbright Scholars from Turkey and Ghana, a Tubitek scholar sponsored by the Turkish Government, and a Norman Borlaug scholar. All of them have successfully completed their work and returned home. Several of the scholars' (Drs. Ekrem Aksakal, Kenan Barik, and Emmanuel Amoakwah) high-quality research was presented and displayed at the International Research Exposition of Ohio State University, World Food Prize Award conference, the American Society of Agronomy/Soil Science Society of America/Crop Science Society of America, the USDA Foreign Agricultural Service Newsletter, and Monsanto Newsroom

(<http://news.monsanto.com/news/sustainability/world-food-prize-panel-highlights-impacts-climate-change-food-production>, [www.asa.org](http://www.asa.org), [www.fas.usda.gov](http://www.fas.usda.gov)).

#### International Meetings

We organized two international meetings/workshops. One of the workshops was held in Ukraine with Agro-Soyuz International Forum on "Sustainable Agriculture" at Dnepropetrovsk, June 19-21, 2013 (<http://www.agrosoyuz.com>). This workshop reached more than 200 farmers, educators and scientists from Ukraine, Russia, and Kazakhstan.

The other meeting "Farmtrek 2013" was organized in Listowel, Ontario province, Canada with Agriculture Solutions on climate change and ecosystem services on August 22, 2013 (<http://www.agriculturesolutions.com>). The meeting was attended by more than 250 farmers (Mennonite), educators, and scientists.

#### Tools and Technology

We are one of the leading authorities in the world on soil quality/health and agroecosystem services. A simple and inexpensive soil quality field test kit for routine evaluation of field soils by farmers, producers, Extension Educators, and citizens was developed at the OSU South Centers several years ago. This test helps farmer and others to determine on-farm soil quality, soil organic matter content, plant available N, biological activity, and soil tilth. It can also be used to predict crop yields. On average, Ohio has 78,000 farms for growing corn, soybeans, wheat and other crops. Farmers spent at least \$10-20/year for routine analysis of soil. Our soil quality test costs less than a \$1 per year. Collectively, this test can potentially save Ohio farmers between \$350,000 to 700,000/year. Our soil test has also been made available for international shipment, with test kits sold outside the United States in 2012. We are working with the OSU Licensing and Technology Department and the Scotts Company ([www.scotts.com](http://www.scotts.com)) to complete the patent application process for our soil health test kit.

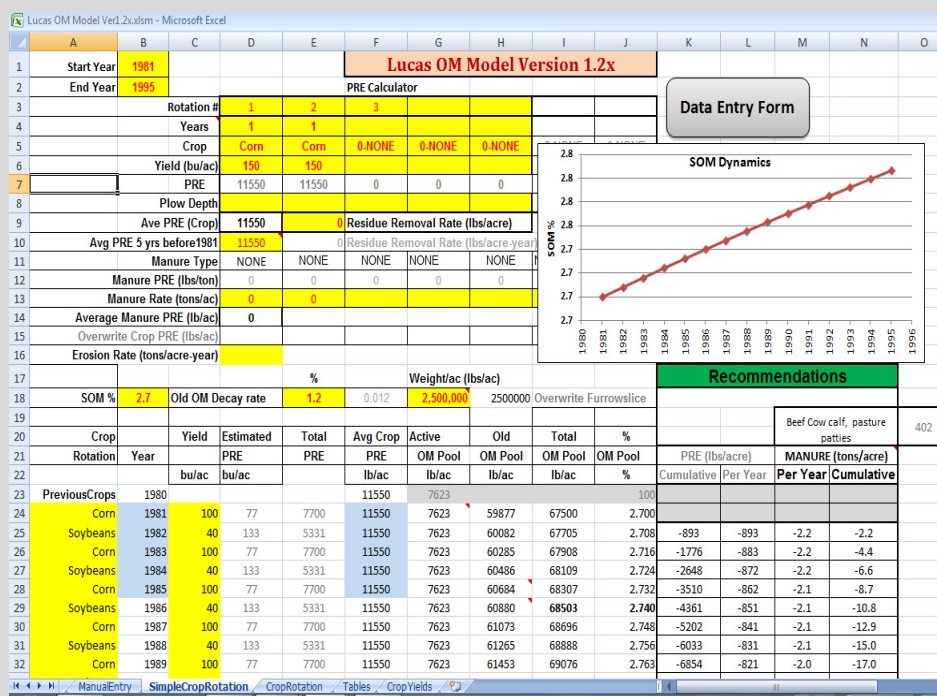


Photo: Field evaluation of soil quality at Kellogg Biological Station, Michigan State University

## Soil, Water, and Bioenergy Resources

### 2013 Program Achievements continued:

The opportunity to sell corn stover is increasing with bioenergy conversion plants being built across the Midwest. Farmers are aware that soil organic matter remains the foundation upon which sustainable, and profitable agricultural systems are built. Farmers, Extension educators and NRCS staff, as well as others in the industry need a simple and easy-to-use tool in order to understand how management influences soil organic matter. We have developed the "SOM calculator tool" based on the impacts of stover removal, crop rotation, drainage, manure and organic amendments, fertilizers, conservation tillage, and cover crops. The outputs of the calculator consist of total, active and passive soil organic matter, total nitrogen, CO<sub>2</sub>-C sequestration, and overall soil health. The tool also helps to calculate the revenue from residue sales. This tool is available on the Soil, Water and Bioenergy website (<http://www.southcenters.osu.edu/soil>) and is ready to convert into software for commercial use by farmers, the NRCS, and other clientele.



#### EXTENSION IMPACT

##### State, regional, and National

We have organized several field days, train-the trainer workshops, and annual meetings/conferences at different locations in Ohio (5 locations), Michigan (3 locations), and Illinois (3 locations). So far, we have trained more than 600 professional and educators on soil quality and 21st Century agriculture. All these meetings and workshops were rated as one of the best training sessions in 2013. In our soil quality post-workshop evaluation, it is reported that each of the trainers and educators who received teaching materials and soil quality test kit from our workshops have trained and outreach more than 12 people in 2013. This outreach by professionals and education in different states is equivalent to 2,000 people.

We have, so far, organized 5 field days including one on organic agricultural production, 2 field workshops, and 1 regional meeting (MCCC). We have delivered 15 presentations, published 5 peer-reviewed papers and several newspaper articles.





**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

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CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information:  
<http://go.osu.edu/cfaesdiversity>.



# OSU South Centers Upcoming Events

**February 13, 2014**—HOPS Production Workshop—OARDC Wooster, OH (registration is now closed) 200 people are registered.

**March 4, 2014**—Ohio Commercial Berry Production School—OSU Endeavor Center, Piketon OH.

To register contact Charissa McGlothlin 740-289-2071 x132 or [mcglothlin.4@osu.edu](mailto:mcglothlin.4@osu.edu).

Cost is \$25.00. Deadline to register is February 25, 2014.

**March 27, 2014**—Money for Business—OSU Endeavor Center, Piketon, OH.

To register contact Jennifer Warfe 740-289-2071 x301 or [warfe.2@osu.edu](mailto:warfe.2@osu.edu).

Cost is \$25.00. Deadline to register is March 21, 2014.