CFAES SOUTH CENTERS

SPRING **2023**

Connections

YCLE 23

South Centers highlights ag careers for students

Story and Photos by
BRADFORD SHERMAN

High School students spent a day learning about agricultural careers as part of the Youth Cooperative Leadership Experience (YCLE) Day organized by the College of Food, Agricultural, and Environmental Sciences Center for Cooperatives and held at The Ohio State University South Centers.

More than 30 students from the Ohio Valley Career and Technical Center and Peebles High School, both in Adams County, Ohio, visited South Centers on March 31 to learn about agricultural research that is conducted at the campus, experience hands-on learning opportunities in agricultural science, and visit a career fair where they spoke with representatives from local cooperatives.

See YCLE Page 2

The students of the Ohio Valley Career and Technical Center and Peebles High School pose for a group photo with South Centers staff and career fair represenatives.

YCLE from Front

“Students were able to take a deeper dive into the world of aquaponics, learn about natural sugars in fruit, extract DNA from strawberries, test the quality of soil, understand operations of a fish hatchery, and tour the farm,” explained Center for Cooperatives Program Specialist and event organizer Melissa Whitt.

Becky Linton, an agriculture educator and FFA advisor at Peebles High School, raved about the experience for she and her students.

“The YCLE event was wonderful! My students not only had the opportunity to tour the research facilities and hear about the research that is currently happening at OSU South Centers, but received a hands-on learning opportunity as well,” said Linton.

“I could not have asked for a better day with my students to learn and have fun at the same time; it was truly an enjoyable experience for me as a teacher and for them as students.”

Her students echoed that excitement.

“I enjoyed learning about the aquatic center and seeing the fish. I also enjoyed the soil lab that we did,” said MaRhea Unger.

“The aquaponics system was really neat, I thought it was cool how the fish waste was being used to fertilize the plants,” added Brayden Davis.

Cody Vogler plans on putting the information he learned and the test kit he received to good use. “I liked learning about how to test the soil; I am planning to use the soil test kit we received to test the soil in my garden,” he said.

“The Strawberry DNA and the color machine activity was very interesting, in our group we looked at the color of the strawberry compared to the sugar content of each; the darker the strawberry the higher the sugar content, which makes sense that there is more sugar as the strawberry ripens,” explained Caydence Carroll.

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YCLE from Page 2

"Another interesting aspect to our event was that students had the chance to connect with Ohio cooperative business leaders during the Cooperative Career Fair and discovered numerous career opportunities available to them upon high school graduation in the cooperative sector," said Whitt.

Cooperatives including Adams Rural Electric Cooperative, Atomic Credit Union, Dairy Farmers of America, Farm Credit Mid-America, and South Central Power Company, shared how students can launch careers at their cooperatives. Representatives from OSU ATI and OSU South Centers shared information about education pathways in agriculture and summer employment opportunities for students, respectively.

"As a Senior in high school headed into a career in the area of Agriculture Education with a double major in Agriculture Business, visiting OSU South Centers was a wonderful experience," commented Darby Mills. "I feel that the information gleaned, and the connections made have definitely enhanced my understanding of cooperatives. I found the experience very interesting, and it was a great day of meeting people and learning."

Dr. Dan Remley dressed for the occassion as he helped students learn about the DNA of strawberries. (Beth Rigsby/photo)

The YCLE program, designed to help students learn about agricultural careers and achievable paths to higher education with an emphasis on the cooperative business model because cooperatives play an important role in the agricultural supply chain, is made possible through funding from the Southern Ohio Agricultural and Community Development Foundation (SOACDF).

The foundation, which sunset in 2021, served 22 counties, including Pike and Adams, within the Southern Ohio Appalachian region. The $75,000 grant from SOACDF is expected to fund additional YCLE activities for Appalachian high school students through 2026.

This year's event built on the foundation laid by first-ever YCLE held on the Columbus campus of The Ohio State University in 2019 via pilot funding provided by the North Central Region Sustainable Agriculture Research and Education (NCR SARE) program of USDA, as well as an online resource for educators available at go.osu.edu/ycle.

Events are thriving, online & on site

The adaptation to a new, post covid operating environment has provided the opportunity to expand and enhance the way that we all work and deliver our research and educational programs at South Centers. A continuing dynamic for all our program leaders is successful switching of workshops and seminars to fully online and/or hybrid formats that have increased audience participation and reach.

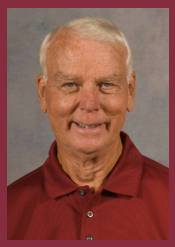
For example, a recent webinar on fruit pruning techniques drew a registration of over 600 people. Several different delivery components including pre-recorded videos of outdoor and indoor demonstrations, online guest speakers and use of interactive polls and other multi-media methods have been employed within the online framework. Our experience to date poises us for a future in which program delivery methods are likely to become ever more varied, "hybridized" and dynamic.

This was the 22nd year of USDA-Rural Development funding for startup cooperative development work focused on Appalachian Ohio and West Virginia. Our Center for Cooperatives most recently provided a Youth Cooperative Leadership Experience Day for high school students in southern Ohio.

SOUTH CENTERS CHAT

with Dr. Tom Worley

South Centers Director



This event was held at South Centers and engaged all our program specialists in leading hands-on activities at various demonstration sites and tours throughout our facilities. Staff members also shared career opportunities with the students and interacted with them about what academic preparation is desirable for various career choices. We hosted six different cooperatives during a career fair during midday which afforded the students the opportunity to visit with each about career opportunities and how to become prepared for various types of positions.

The event was deemed very successful and we have plans to make this an annual event. You can read more about this event in the cover story for this issue.

We hope you enjoy catching up with our various programs as you turn the pages of this issue.

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Duane Rigsby receieves posthumous honor

The late Duane Rigsby was a founder and the first president of NETC. Now he is set to be among the first inducted into its Hall of Fame. Read more on Page 5.

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The Direct Marketing team held its annual Agritourism Conference in Loveland, Ohio on April 1.

MEP client Conns keeping popular Ohio-based snack food brand alive.....Page 18

Just when it appeared Mikesells was leaving shelves for good, fellow Ohio snack maker Conns swooped in for the save.

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Duane Rigsby to be inducted into NETC Hall of Fame

By Bradford Sherman
CFAES/South Centers

Duane Rigsby will be posthumously inducted into the first class of the National Extension Technology Community (NETC) Hall of Fame during its annual conference to be held April 24-27 in Tempe, Arizona. Rigsby was a founding member of NETC and served as its first president from 2013 to 2017.

Rigsby received far more nominations than any other nominee, including one from his friend and longtime co-worker Rich Emnett.

"Duane was the embodiment of the NETC organization," said Emnett.

"Duane was an active participant of NETC and an integral part of the formation of the National Extension Technology Community. He attended his first conference, NETC 2002: Innovation Through Cooperation at Penn State," the nomination letter read. "He fell in love with the people, ideas, and mission of the National Extension Technology Conference. Until his passing in April 2022, Duane was a fixture at every NETC conference for nearly two decades."

Some examples of the sessions he presented/co-presented at conferences over the years included:

- The BitBuckIT Podcast: Keeping staff up-to-date with technology
- Podcasting Level II: How to sound like a pro, even though you're not
- DIY Wiimote smartboard: Smartboard on a budget
- TSIS: the Transportable Satellite Internet System
- Grand Central/Google Voice
- And numerous others

NETC is a nonprofit organization dedicated to extending professional development, education, and networking opportunities to Cooperative Extension employees. The Community facilitates collaboration on the unique issues, needs, and opportunities faced by Extension IT professionals and the clients they serve. It also offers professional development for its members and increased recognition and esteem for IT fields within the land-grant system.

Duane's wife Linda and daughter Katie will be in attendance for his induction. This prestigious honor will coincide with the anniversary of his passing.

NETC
Connecting & Collaborating

Learn more about the National Extension Technology Community (NETC) by visiting the community's website:

netctech.org

$2M in grants to fund pair of meaningful aquaculture projects

By Dr. Hanping Wang
Senior Scientist and
Aquaculture Program Leader

The Ohio Center for Aquaculture Research and Development (OCARD) at The Ohio State University South Centers, in partnership with the Specialty Crops team and University of New Hampshire, has been awarded approximately $1 million from a very competitive program of the USDA.

The USDA program is the Urban, Indoor, and other Emerging Agriculture (UIE) for the development of sustainable aquaponics model systems to enhance resiliency of urban, indoor, and emerging food systems using monosex and genetically improved fish with a variety of plants and DNA-based analyses of the structure and function of microbe communities in aquaponic systems.

The program received more than 200 proposals and funded just 10, with each having an approximate value of $1 million. South Centers was among the recipients with the funding rate of around 5%. Dr. Hanping Wang is the Pincipal Investigator (PI) and Dr. Gary Gao serves as Co-PI of the project. This project is expected to contribute to: 1) enhancing UIE sustainability and satisfying human food and fiber needs; 2) enhancing quality of life and access to safe nutritious food for urban and peri-urban communities, and society as a whole; 3) reducing barriers to land access: and 4) sustaining the economic viability of urban farm operations.

Additionally, OCARD, in collaboration with North Carolina State University and University of New Hampshire, is receiving one million in grant dollars from NOAA to develop striped bass seedstock production technologies and related outreach activities.

As one of the National Sea Grant Aquaculture Hubs, this StriperHub project will conduct broodstock and seedstock production research and develop feeding strategies/ protocols and culture manual/methods for striped bass industry. The project will help address the seafood deficit in the United States by developing striped bass as a candidate aquaculture species and expanding hybrid striped bass aquaculture to strengthen the domestic seafood industry and boost the economies of coastal, great lake, and rural communities.

There is a growing interest in striped bass aquaculture within the Great Lake Region (GLR) and North Central Region (NCR). This project adds a new aquaculture research species to OCARD. South Centers' own Dr. Hanping Wang is leading and coordinating research and outreach efforts of the StriperHub in the GLR and NCR.

"OCARD has been competitive in winning research grants at the national level over the past 20 years," said Wang. "This success can be attributed to the efforts of our aquaculture team, with our nationally recognized aquaculture genetics program at Piketon and impact of our quality research and publications, plus the support of other teams and supporting staff at South Centers."

Dr. Hanping Wang and colleagues finish third book 'Epigenetics in Aquaculture'

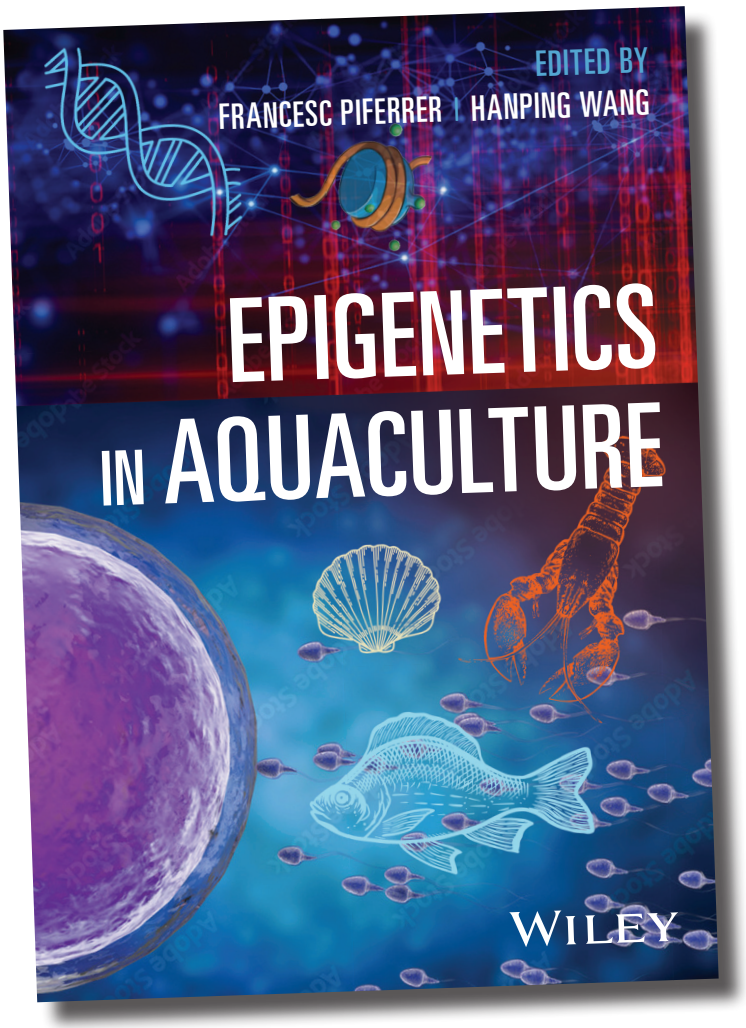
By Dr. Hanping Wang
Senior Scientist and Aquaculture Program Leader

A third aquaculture book, Epigenetics in Aquaculture, has been completed by Dr. Hanping Wang and his colleagues, will be published by Wiley & Blackwell in the summer of 2023 after two years of planning, coordination, and writing.

The book contains 20 chapters spanning around 600 pages. The corresponding editor is Dr. Hanping Wang, Principal Scientist at the Ohio Center for Aquaculture Research and Development at The Ohio State University South Centers, along with editor Dr. Francesc Piferrer of Spain. Several South Centers staff members made important contributions to the book: Bradford Sherman completed the English editing of all chapters of this book, Sarah Swanson assisted in chapter coordination, and Hong Yao's book cover design was selected as the front cover by Wiley's design team after winning a cover design competition.

The concept of "epigenetics" originally referred the effect the environment has on the development of phenotypes, but is now implicated as the set of heritable marks on the genome that can modify gene expression, leading to phenotypic variations without changing the DNA sequence content. Epigenetics is currently considered one of the "hot topics" in biology. Epigenetic modifications or "marks" can be easily identified, and they constitute therapeutic approaches for the treatment of an increasing number of diseases. Thus, there is a lot of research ongoing in the epigenetics of cancer, for example.

For aquaculture, agriculture, and environment, first, epigenetics integrates genomic and environmental influences to bring about the phenotype; second, there is a fraction of the phenotypic variance that cannot be explained solely on genetic variation, but that can be explained by taking into account epigenetic variation; third, epigenetic changes can be inherited and thus passed from parents to offspring into the following generations. Combined, this has prompted the implementation of epigenetic research, not only in ecology and evolution for its contribution to adaption to new environments, but also into agriculture and livestock for improved food production. Consequently, recently there has been both a clear interest in marine epigenetics and in the application of epigenetics in aquaculture. One of the main reasons is that aquatic organisms are quite susceptible to environmental cues since, for example, temperature in a cold-blooded animal influences growth rates more strongly than in a warm-blooded animal. Further, in contrast to mammals, fishes seem to have less reprogramming and erasing of the epigenetic marks after fertilization, thus facilitating epigenetic transmission of environmental influences on the next generation. Thus, there is a lot of interest for application of epigenetics in aquaculture.



The first comprehensive book of its kind, Epigenetics in Aquaculture, provides an update on state-of-the-art epigenetics in major taxa of aquatic organisms including algae, crustaceans, mollusks, and fish, and how this new knowledge can be applied to increase aquaculture production. It covers both basic and applied aspects on epigenetics related to reproduction, development, growth, nutrition, and disease of aquatic species, for which authors hope will benefit the aquatic scientific community and therefore the aquaculture sector.

Photo Souce: J.M. Malone and Son, Inc

OCARD IS LICENSING ALL-MALE BLUEGILL TECHNOLOGY TO AQUACULTURE INDUSTRY

By Dr. Hanping Wang

Senior Scientist and Aquaculture Program Leader

Facilitated by the OSU Technology Commercialization Office, the Ohio Center for Aquaculture Research and Development (OCARD) at OSU South Centers is licensing all-male bluegill technology to J.M. Malone and Son, Inc. to produce all-male bluegill fingerling for the aquaculture industry.

Terms of the five-year agreement state tht OSU will receive a license fee and royalty payments from Malone for fish sold that resulted from the OSU monosex fish-producing technology.

J.M. Malone and Son, Inc., located in Arkansas, is the world's largest producer of triploid grass carp and warmwater fish with 16 different species. It operates as a commercial fish farm with expertise in commercial warmwater fish production. The farm is comprised of 1,900 acres of fish production ponds, a state-of-the-art multi-species hatchery, and has 30,000+ square feet of live fish-holding facilities. This company is estimated to generate $1.1 million in annual revenue.

Funded by USDA and a NOAA-Sea Grant, OCARD for years has worked on developing this technology for the production of commercial-scale of fast-growing monosex bluegill and yellow perch. Both species are considered top aquaculture species in the Midwest United States and the Great Lake Region.

OCARD at Piketon has created the technology that can generate large numbers of fast-growing all-male bluegill populations needed by the aquaculture industry. All-male or near-all-male bluegill populations have been successfully produced and tested. Results from testing all-male or near-all-male bluegill populations at two locations showed: 1) weight gain and growth rate of all-male stock were 2.1 times that of regular stocks; 2) all-male groups had significantly uniformed size and lower coefficient of variation; and 3) survival of all-male groups was significantly higher than that of mixed sex groups due to more uniformed size.

A successful creation of genetically male bluegill strain and its commercialization would have a tremendous impact on the sunfish aquaculture industry by increasing the growth rate of 30- 35% and saving energy expenditure of 20-30% for sex growth.

Agritourism & is booming & blooming

Agritourism Conference connects farm owners seeking to grow their operations

Story by Bradford Sherman
Photos by Beth Rigsby
CFAES/South Centers

Agritourism operators from across the tri-state area of Ohio, Kentucky, and Indiana gathered in Loveland, Ohio April 1 to learn the latest trends and best practices to help grow your farm business as part of the 2023 Ohio Agritourism Conference.

The approximately 80 attendees spent the day networking with peers and industry experts, attending informative sessions, and touring one of the more successful agritourism operations in Ohio.

Held primarily at Blooms & Berries Farm Market, conference-goers had the opportunity to meet the team and learn about how they serve approximately 100,000 guests a year by staying authentically true to their brand and team, and tour the market barn, produce stands, play yard/petting farm, and garden center.

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Blooms & Berries co-owner Jeff Probst speaks with a conference atendee.

AGRITOURISM from 4

The conference then shifted a few miles down the road to The Marmalade Lily, a premier event hosting venue, for lunch and more informative sessions.

Sessions offered between the two venues included: Love your Staff; Ag & Operations Show and Tell; The Market Barn – Shopping is an Attraction Tool, The Pie Dough; Pouring a New Revenue Stream: Adding Alcohol to Agritourism; Revenue Growth Hacking: The Inside Secrets to the Highest Performing Ticketing Pages; Minding your P's and Q's: Trademark/Copyright Concerns in Marketing Your Business; and Employee Hiring, Training, and Empowerment – People Make Your Business.

The event was presented by the Direct Food and Agricultural Marketing Team at The Ohio State University, a diverse group of educators and other service providers to Ohio's farmers. These collaborations have been developed to increase efficiencies of resources available to farmers while reducing duplicative services.

The team consists of members with various areas of expertise to provide a one-stop shop for the needs of Ohio direct marketers. Some of our collaborating organizations are the Ohio Ecological Food and Farm Association, Ohio Produce Growers and Marketers Association, Ohio Farm Bureau, and OSU Extension Educators and program areas.

Event sponsors included TicketSpice, Nationwide, and the Ohio Farm Bureau.

ABOVE: The children of Blooms & Berries co-owners Jeff and Emily Probst play a card game. BELOW: The Marmalade Lily.

Raspberry plants in a container yard outside at OSU South Centers in Piketon.
Photo by Gary Gao

Long Cane Raspberry Project Takes Center Stage

By Dr. Gary Gao
Professor and Small Fruits Extension Specialist

A two-year long cane raspberry production project, started in late 2021, took center stage for the Small Fruits Team in 2022. The study is being funded by Ohio Department of Agriculture through a Specialty Crop Block Grant.

Long cane raspberry production system is a relatively new raspberry production method where raspberry bushes with long floricanes (5 feet and 10 inches) are produced in greenhouses, stored in coolers in autumn and winter, and then shipped to growers in spring for planting and fruiting in summer. Growers can plant these ready-made plants with fruiting canes in a soilless media and a protected environment like a high tunnel or an unheated greenhouse, or even under solar panels for fruit production in summer.

This new and innovative system could help growers get around the problems of poor soil drainage that limit new cane growth and fluctuating spring temperatures that damage floricanes. The long cane production has been very popular in Europe and Canada. This approach has not been a viable option for growers in Ohio since there was not a nursery that grows and sells long cane raspberries.

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LONG CANE from 11

There is a major shortage of Ohio-grown raspberries due to a strong demand and limited raspberry acreage and low yields. Based on the 2017 USDA Agricultural Census, Ohio had 487 raspberry farms with a total acreage of 343. Poor soil drainage, polar vortexes, fluctuating temperatures, labor shortage, and more recently the COVID-19 pandemic, have greatly limited the expansion of raspberry production in Ohio. Numerous improvements to the raspberry production systems have been tried with some success. It became apparent that a totally different production system needed to be developed for raspberry growers in Ohio.

Only about 5% of the berries consumed by Ohioans are produced in the Buckeye State. Flavor, healthfulness, convenience, and year-round availability have contributed to increasing consumer demand for strawberries, blueberries, raspberries, and other berries, with per capita loss-adjusted availability growing from an average of 4.5 pounds per person per year during 1994-98 to 6.6 pounds during 2007-08 and to 9.9 pounds in 2014 (USDA Economic Research Service, 2017). Hence, there is an excellent potential for Ohio growers to get a much bigger "slice of the pie," so to speak, if more effective raspberry production systems are developed for Ohio growers. Long cane raspberry production system may be the innovation that Ohio growers needed.

The "bottleneck" of long cane raspberry production has always been the lack of available raspberry with long canes from nurseries. A March 2021 news release titled "Strawberry Tray Plants and Long Cane Bramble Plants" by Nourse Farms (Whatley, MA) caught the attention of the Small Fruits Team since raspberry bushes come with long fruiting canes for growing in soilless media.

In addition to the trial plot in a high tunnel at South Centers, the team also set up a separate trial outside in the container production yards. The present study will compare the yield, fruit quality, and growth rate to see if open field production method is a viable approach.

Three separate grower trials have been set up as well. Containers, media, and plant materials are identical. The fertilization program and watering intervals are different since each site is different. Researchers will summarize the information from all the trials, and the end of the season, will determine which approaches will be good for growing conditions in southern and northern parts of Ohio.

Flower buds emerged on June 28, 2022 on the raspberry bushes that were put out on June 16. As expected, the flower buds came with the lone canes and are ready to turn into tasty raspberries. Honeybees and other pollinators will need to help with pollination.

Ryan Slaughter and Paul O'Bryant, both research assistants, are shown here installing T-posts in a high tunnel. *Photo by Gary Gao*

As a part of the project, Dr. Gao took a field trip to the Onésime Pouliot Farm in Saint-Jean-de-l'Île-d'Orléans, Québec, Canada to learn about long cane raspberry production on a commercial scale. Their raspberry bushes were at the peak harvest when he visited the farm on August 11, 2022.

"It was neat to see the walls of raspberries. Instead of growing them in the traditional high tunnels, the growers there designed an umbrella like structure to protect plants and fruits from rain and wind," stated Gao.

"All plants were grown in coco coir and fertigated with water-soluble fertilizers. They have been doing this for three years now. They also grow long cane raspberry plants for sale in Canada and US. However, we still need to figure how to get them from Canada to Ohio. I was told that growers purchase plants from Canada all the time. Please email me at Gao.2@osu.edu, if you know the process well. I definitely need to figure out how."

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Tiny flower buds are visible on the fruiting laterals of the long cane raspberry bushes 12 days after being placed outside. Photo by Gary Gao, The Ohio State University.

Fresh fruits harvested from the grower trial at Hirsch's Fruit Farm in Chillicothe, OH. Photo by Steve Hirsch.

LONG CANE from 12

Gao had the opportunity to taste some freshly picked raspberries that day. Bonnie Lewis, Glen Mor, Kwanza, Skye, and Tulameen were the featured cultivars. Bonnie Lewis, Glen Mor and Skye are not yet available in the United States. Gao remarked how impressed he was by their yields and fruit quality.

"I am very happy to report that we were able to grow the long cane raspberry plants and produce quite bit fruits. We also found out that there is a sharp learning curve for this new production system," Gao said.

Here are some of the things the team has learned so far:

1. Growing long canes raspberries without protection is not the most efficient use of the long cane raspberry plants.
2. Granular fertilizers do not act quickly enough to provide much needed nutrients to the plants.
3. Fertigation with water soluble fertilizers is a must.
4. Monitoring electrical conductivity of the drip solution both on the inlet and outlet is required daily for optimum growth and production.
5. Honeybee hives need to be placed near the high tunnel for best yield and fewer crumble fruits.
6. A shade cloth is needed to reduce sun scold or white drupelets.
7. Both macronutrients and micronutrients are needed. Boron is one of the critical nutrients for preventing crumble fruits.
8. We are testing Kweli® and Rafiki. However, we will need to trial other cultivars to see which ones are the best for Ohio conditions.
9. The availability of long cane raspberry plants is currently a bottleneck. However, I am glad to see that there are multiple sources of the long cane raspberry plants now. More nurseries are coming on board to produce them.
10. The Long Cane Raspberry Production is a nice way to extend the harvest season. A group of researchers and growers in North Carolina are testing to see if freshly picked raspberries during the strawberry harvest season are a winning combination for them.

"One neat statement I heard was that honeybees absolutely love the raspberry flowers. During the bloom of the long cane raspberry bushes, the tunnels feel like they were buzzing. Even though I saw a lot of bumblebees in our plots, but I did not experience the 'buzzing effect.' We will bring in a few beehives next year," added Gao.

SPECIALTY CROPS TENT AND DISPLAY

2022 FARM SCIENCE REVIEW

Dr. Gary Gao, leader of the Small Fruits team at South Centers, was asked to lead the efforts in setting up programs and a display area on Specialty Crops at the 2022 Farm Science Review.

Dr. Gao produced a solid lineup of speakers for all three days of the show. Small Fruits research assistants Ryan Slaughter and Paul O'Bryant set up the display area.

The Specialty Crop Tent and the display drew a good attendance and laid a solid foundation for future years!

Small Farm Center: Dr. Gary Gao also gave a talk on long cane raspberry production at the Small Farm Center at the Farm Science Review. His presentation drew an attendance of 35. He received a lot of questions there and some follow up emails.

SOIL + WATER

Soil, Water & Bioenergy

Program's impacts being felt around the world

By Dr. Rafiq Islam
Senior Scientist and SWBR Program Leader

As part of its U.S. Civilian Research and Development Foundation (CRDF)-Global-sponsored project, the Soil, Waster, and Bioenergy Resources program, in conjunction with the Institute of Water Problems and Land Reclamation of the National Academy of Agrarian Sciences of Ukraine, was very instrumental in organizing an international hybrid conference titled "Growing Energy Crops by Recycling Biosolids on Marginal Lands" in September last year.

Nine renowned researchers of alternate energy from Ukraine, the United States, Spain, and the Czech Republic delivered their presentations. Rafiq Islam delivered the keynote presentation focusing on energy, politics, and climate change associated with the theme of the conference. Dr. Mosiichuk Yaroslava along with other investigators of the CRDF project delivered an oral presentation titled "Recycling biosolids to improve marginal lands for biofeedstock production in Ukraine" at the conference. Dr. Nataliia Didenko moderated the presentations and the overall conference.

Around 154 participants from different countries in the world registered for the conference. Nations represented included Bangladesh, the Czech Republic, Georgia, India, Iraq, Kazakhstan, Pakistan, Turkey, Ukraine, the United States, Uzbekistan, and Vietnam.

Rafiq Islam along with Drs. Tom Worley and Terry Hofecker (Owner of Soil1, LLC, USA) attended and delivered professional presentations at the 8th International Conference on Deserts, Drylands, and

International Meetings and Workshops

Desertification associated with a global effort towards ecosystem restoration in Israel from November 27 through December 1. The conference was sponsored by the United Nations' Convention to Combat Desertification, Ben-Gurion University of Negev, BIRD – The Jacob Blaustein Center for Scientific Cooperation, and Americans for Ben-Gurion University to cover five days of scientific and policy sessions, workshops, and tours focusing on topics such as: earth observation, ecology, economics, ecosystem services, education, energy, food, health, society, and water.

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WORLD from 16

While Islam delivered a PowerPoint presentation titled “Climate-Smart Agriculture, Carbon and Soil Health,” Worley gave a presentation on the economic implications of climate-smart agriculture. Hofecker, one of OSU-licensed technology commercialization partners, delivered a PowerPoint presentation titled “A Low Cost Field-Test Kit for Farmers in Developing Countries.”

The session conveners were Dr. Roy Posmanik, ARO/ Volcani, and Dr. Ilan Stavi, Dead Sea and Arava Science Center, Southern Negev, Israel. Dr. Stavi is one of the post-doctoral researchers who did his research on climate change and soil carbon dynamics at The Ohio State University in 2010.

Israel-OSU South Centers Research Collaborations

As part of their successful trip to attend and deliver presentations at the 8th International Conference on Deserts, Drylands, and Desertification, Drs. Rafiq Islam and Tom Worley established collaborations with several Israeli organizations to participate in research and Extension outreach activities on regenerative agriculture.

Recently, both of them were actively involved with Drs. Maor Matzrafi (ARO, Volcani, Newe Ya’ar Research Center, Israel), Yael Laor (ARO, Volcani, Newe Ya’ar Research Center, Israel), Gil Eshel (Ministry of Agriculture, Israel), Adam Abramson (Migal Galilee Research Institute, Israel) in conjunction with Drs. Martin Williams (USDA-ARS, IL, USA) and Amanda Crump (UC-Davis, CA, USA) to submit a research proposal entitled “Using Scientific Approaches to Evaluate the Opportunities behind the Bottom-Up Movement of Regenerative Agriculture” for US-ISRAEL Binational Agricultural Research and Development Fund.

Moreover, Islam was involved in research collaboration with Dr. Ilan Stavi and Ariel Bashan at the Arava and Dead Sea Research Center and Netafim irrigation in the Southern Negev, Israel.

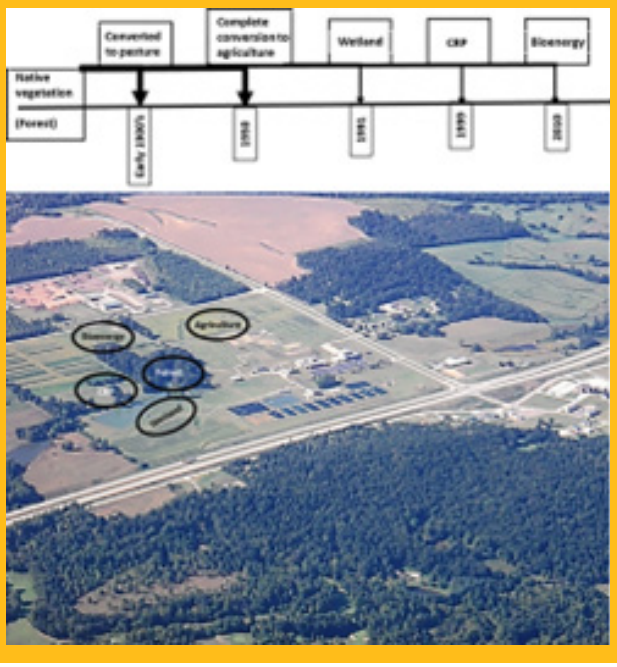
SWBR research published in high-impact journals

By Dr. Rafiq Islam
Senior Scientist and SWBR Program Leader

SWBR team members have been involved in collaborative applied and academic research with scientists, students, and professors globally and efficiently utilized their time to publish peer-reviewed articles in high-impact journals and author edited books and chapters.

In 2022, 15 peer-reviewed articles were published in the Journal of Coordination Chemistry; Environmental Science and Policy; Soil Science Society of America Journal; PLOS ONE; Open Access Library Journal; Land Reclamation and Water Management; Journal of Cleaner Production; Journal of Soils and Sediments; Pedosphere Journal of Plant Nutrition; Open Journal of Soil Science; Journal of Plant Nutrition; and Applied Soil Ecology.

The PLOS ONE article titled “Impact of deforestation and temporal land-use change on soil organic carbon storage, quality, and lability” in particular, was emphasized on the cover page of the journal, and cited by Science Magazine and Bioengineer.org. An edited book titled “Climate Change Mitigation and Adaptation to Improve Food Security in South Asia” by Rahman, Heulin, Sivakumar, and Islam is in process to be published by CRC/Taylor and Francis. Moreover, an edited book chapter titled “Global food security in response to climate change effects in Ukraine” (Didenko N, Lavrenko S, Lavrenko N, Didenko S, Islam KR) is in the process of being published.



Zhenhao Guan (Leo) joins Soil, Water, and Bioenergy Resources Program

By Dr. Arif Rahman
SWBR Scientist

Zhenhao Guan (Leo) recently joined the Soil, Water, and Bioenergy Resources Program at The Ohio State University South Centers in Piketon as a Research Assistant.

Prior to joining OSU, Guan worked as a research assistant at Georgetown University Medical Center, Washington DC, in the field of spike proteins from SARS Cov-2 variants.

He came to the United States to earn his Bachelor's degree in Ecology and Environmental Plant Biology from Ohio University in 2018.

After successfully completing his undergraduate studies, he pursued a Masters' degree in Biotechnology from Georgetown University in May 2022.

During his academic studies, he specialized in sophisticated DNA and RNA extractions and transformations, PCR, RT-PCR, microbial staining, and soil and water quality testing. Leo is also well-acquainted with the analysis of DNA sequence alignments and COVID-19 variants sequence analysis.

Guan is a native of the Peoples Republic of China.

Robertson is the new South Centers Event Coordinator

Bridget Robertson has joined the staff of The Ohio State University South Centers in a program support role and will primarily serve as the Centers' Events Senior Coordinator.

Stationed in the front office, hers is the first face visitors to the Research and Extension building will see, or her voice the one they will hear when calling on the phone. In addition, Robertson will be coordinating and networking behind the scenes to promote various events at South Centers and ensure they are as successful as possible.

"I am very excited for this opportunity to meet and work with folks within the surrounding counties in the food, agricultural, and environmental fields," said Robertson. "I have learned so much in a short amount of time already. It is amazing what we do here, and I am one proud Buckeye!"

She came to South Centers in January by way of the FBP-BWXT On-Site Waste Disposal Facility. Her experience as a Waste Generator and overseeing field projects from start to finish, a Project Support Technician II, and communicating with the needs of the Department of Energy, has prepared her take on the new tasks of her role with OSU.

She is currently assisting with the online Fruit Pruning School which is a two-part series being held in March, and the Ohio Agritourism Conference in April.

Robertson resides in Waverly and has one daughter, Atlantis.

MEP client Conn's to keep Ohio snack food brand alive

By Bradford Sherman
CFAES/South Centers

Conn's Potato Chip Company, a client of the Manufacturing Extension Partnership at The Ohio State University South Centers, has obtained a licensing agreement to keep a popular Ohio-based snack food brand alive.

Conn's announced in February that it will begin producing Mikesell's snack food products from its Zanesville, Ohio facilities after its subsidiary had obtained a license to the brand rights. The announcement came just weeks after Mikesell's had announced a planned closure and liquidation of assets.

"Conn's is excited about this opportunity. The licensing agreement will allow us to use the decades old recipes and traditions of Mikesell's to continue to deliver the quality snack food products consumers have come to expect and enjoy, especially the loyal fans of Mikesell's products, said Conn's owner and President Jonathan George.

"This opportunity is a perfect fit with our processes and regional presence. Distribution will be provided by independent operators in Ohio, Kentucky, and Indiana, and consumers will soon be able to make online purchases."

Adding the ability to purchase the product online could be a big boost to the brand. Conn's has experienced an explosion of digital dales growth itself thanks to a project with South Centers MEP that resulted in a new, refreshed website and online store.

The goal of the website refresh was to modernize the look and feel of the site, make it easier to navigate. Conn's has seen a 400 percent increase in online product sales, and a major increase in overall traffic and visibility.

MEP and Conn's have worked on two other projects together, a success story video production and a Digital Transformation for Manufacturers Assessment (DTMA).

Conn's climbs The Hill with South Centers MEP

Thomas George, right, Vice President and Owner of Conn's Potato Chips joined South Centers Program Manager Mick Whitt, Ohio Department of Development Director Aaron Patrick, and MEP Growth Advisor Dawn Coleman for Hill Day at the Statehouse in Columbus. Conn's was an advocate to lobby for MEP funding as part of the 2024-25 state budget.

SBDC Reestablishes Partnerships with Local Chambers

The Small Business Development Center (SBDC) has reestablished regular office hours with chamber partners in Gallia and Lawrence counties. Melanie Sherman, SBDC Business Development Specialist, holds office hours at the Gallia County Chamber of Commerce every Tuesday and Lawrence County Chamber of Commerce every Friday. While present at the chamber offices, Sherman works with established clients in the area and accepts new walk-in clients. Both chambers are very active in their community and are assets for local businesses.

"When discussing a partnership with Gallia Chamber of Commerce Director, Bob Hood, he saw the partnership as an opportunity to be able to offer additional resources to current small businesses in his community while

MELANIE SHERMAN

also having a service for prospective new business owners who need assistance in developing business plans and researching financing options," Sherman explained. "Having a presence in both Gallia and Lawrence communities, has helped small business owners' awareness of the programs SBDC offers."

The Gallia County Chamber of Commerce is located on State Street in Gallipolis, Ohio across from the city park and the Lawrence County Chamber of Commerce is located in South Point on Collins Street at The Point Industrial Park.

The SBDC at OSU South Centers offers business counseling to both new and established businesses in 10 counties: Adams, Fayette, Gallia, Highland, Jackson, Lawrence, Pike, Ross, Scioto, Vinton. SBDC counselors can help businesses with business planning, preparing for financial assistance, marketing assistance, and more. To register for counseling, please contact Jennifer Dunn, Program Assistant at 614-247-9729.

Navigating our food markets with co-ops, from growth to marketing

The CFAES Center for Cooperatives team had a very busy and successful 2022, with many highlights and informative programs, with a special focus on marketing. Fall programming kicked off with "Foodpreneur School" on October 22 at Southern State Community College. This year's program was a collaboration between the co-ops team, OSU Extension's Direct Food & Agricultural Marketing Specialist, the Small Business Development Center at the OSU South Centers, along with OSU Extension partners from Delaware and Highland counties.

Food and farm entrepreneurs had the opportunity to learn more about using social media marketing and creating impactful videos for marketing their products. Foodpreneur provided an educational, in-person experience for food and farm entrepreneurs ready to grow through enhanced sales and marketing. Hannah Scott presented a talk titled "Who's Photo is It?" and covered vital details of photo ownership and what rights individuals have when using copywritten images.

Ohio State University experts also taught entrepreneurs about creating impactful video content and effectively using social media for small business marketing. Entrepreneurs were given the opportunity to participate in an interactive session using their own devices to create videos to use for their business social media and promoting. OSU South Centers Small Business Advisor Melissa Carter also taught a session about the importance of brand recognition and how to create an online business presence.

The Center continued to provide knowledge and engaging discussion at the 2022 Annual West Virginia Women in Ag Conference held on November 18 and 19 at Glade Springs in Daniels, W.Va. During the conference, people from across the state and region gathered to learn and connect around what it's like to run a farm open to the public for fall family-friendly activities, or what current female farmers are saying is their biggest lessons. The conference included pre-conference farm tours, exhibitors, and multiple learning sessions in areas like horticulture, livestock, finance, and more.

Program director Hannah Scott highlighted collaborative and cooperative approaches to small farm marketing like farmers markets, multi-farm community supported agriculture models, and producer cooperatives in a conference learning session. Around 35 conference goers participated in the "Collaborating to Improve your Farm Marketing" session, with some sharing their experiences using collaborative marketing and others pointing out marketing challenges. Scott discussed considerations for food and farm producers who are choosing market channels, from developing SMART goals to understanding their resources and crafting a simple marketing plan. She asked producers to consider if, after assessing their challenges and opportunities, they could do something better together than on their own.

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