CFAES SOUTH CENTERS
FALL **2020**
CONNECTIONS

STOPPING COVID COLD

New MEP client is prepping to help transport a potential vaccine across the United States

By Bradford Sherman
CFAES/*South Centers*

One of the newest Manufacturing Extension Partnership (MEP) clients is poised to play an important role in delivering a crucial COVID-19 vaccine to Americans.

Stirling Ultracold is a manufacturer of ultra-low temperature (ULT) freezers, the kind necessary for transporting large doses of such a vaccine across the country. The MEP program at The Ohio State University South Centers is helping the Athens-based company prepare for such a monumental task.

"We are providing consultants to help prepare Stirling for a massive launch of freezers to transport potential COVID-19 vaccines," explained Dawn Coleman, the MEP Growth Advisor working closely with Stirling Ultracold on the project.

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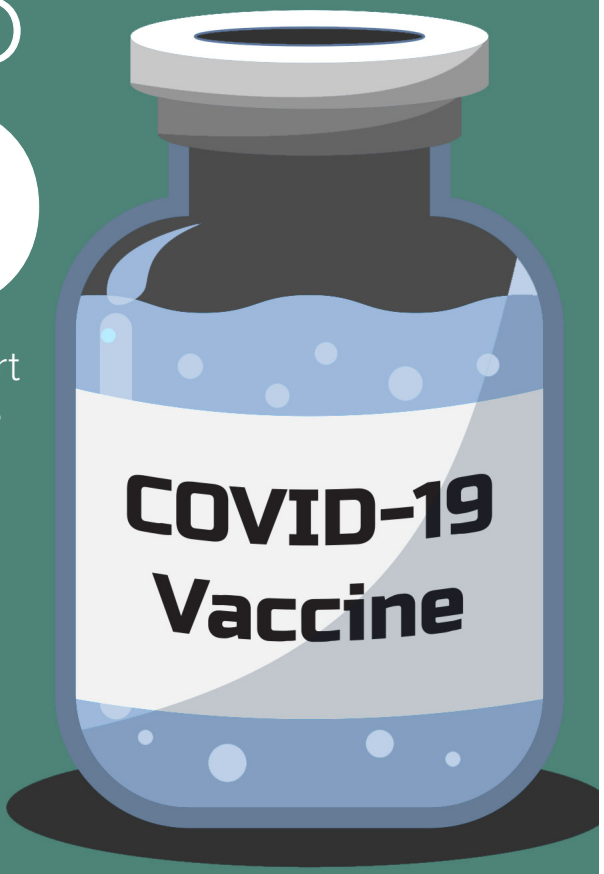

Transporting doses of a potential COVID-19 vaccine across the United States is a monumental task, but the Manufacturing Extension Partnership (MEP) at The Ohio State University South Centers is connecting one of its newest clients with the resources to make it happen.

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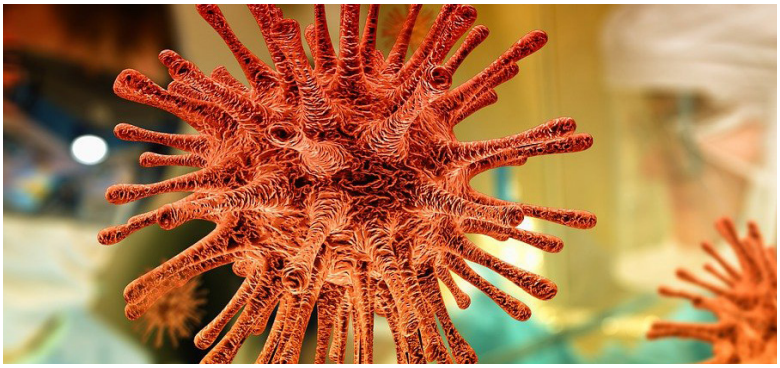

Cover Story: ***Stopping COVID Cold***

The Manufacturing Extension Partnership program at the Ohio State University South Centers has taken on its largest ever project, a partnership with Stirling Ultracold, which aims to help distribute a potential COVID-19 vaccine to Americans using its line of ultra-low temperature freezers.

Stories

COLD from Front

"OSU South Centers MEP strives to partner with businesses to lead in technologies and innovations, giving them their competitive edge," added MEP Program Manager Doug Anderson. "We are proud to partner with Stirling Ultracold, one of our nation's leaders in COVID cure solutions."

Stirling Ultracold currently offers the only commercially available ULT freezers that can safely maintain temperatures from -86°C to -20°C and meet the cold storage efficacy requirements of most COVID-19 vaccine candidates, regardless of which are ultimately approved.

"Our breakthrough cooling technology makes the Stirling Ultracold line of ULT freezers uniquely efficient, lightweight, and flexible enough to meet today's unprecedented COVID-19 vaccine cold chain deployment challenges," Stirling says via its website, stirlingultracold.com, where you can read more about the technology.

Connecting manufacturers, like Stirling, with consulting services is just one of the many ways MEP provides high value, affordable solutions to help businesses increase profitability. Services MEP can offer include operational support and quality, workforce development, cybersecurity, and advanced manufacturing technology.

"We have developed a wide range of services and initiatives that enable manufacturers to accelerate business growth, strengthen business improvements, and mitigate business risk," added Anderson. "Our aim is to bolster our manufacturing partners' competitiveness in the global marketplace."

The project with Stirling Ultracold, secured by Coleman, is the largest ever for the MEP program at OSU South Centers.

Stirling Ultracold currently offers the only commercially available ULT freezers that can safely maintain temperatures to meet the cold storage efficacy requirements of most COVID-19 vaccine candidates. (Photo courtesy of Stirling Ultracold)

It is also one of the most important, as the COVID-19 pandemic has had an unprecedented impact on the health of Americans and the U.S. economy.

"This is opportunity to not only create additional workforce in southeastern Ohio, but to help potentially save thousands of businesses across the country. Most importantly, though, this is a project that has the potential to help save hundreds of thousands of lives," Coleman said.

To learn more about the MEP program at OSU South Centers, or to find out what it can do for your company, visit southcenters.osu.edu/manufacturing-extension-partnership. You can also call 740-289-2071.

Coop Month Theme this year is Cooperative Commit: Diversity, Equity, and Inclusion https://www.coopmonth.coop/

Forming a More INCLUSIVE Cooperative History

By Ryan Kline
Cooperative Development Specialist

October is National Co-op Month, a celebration of cooperatives that started in 1964. The month is a time for allied organizations and co-ops to promote cooperative values and advantages. This year's theme is "Co-ops Commit: Diversity, Equity, and Inclusion," which supports an important conversation about change and action in the cooperative community.

One step toward making diversity and racial equity not just an intention, but a reality, is forming an inclusive cooperative history. Including African American, Latinx, and Appalachian co-ops in U.S. cooperative history highlights the long tradition of cooperation among BIPOC and socioeconomically disadvantaged communities and creates an accurate understanding of the movement.

Highlighting the importance of including these histories, I selected three case studies from Appalachia, African American, and Latinx cooperatives, each of which show just the fraction of the communities' cooperative impact.

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Ryan Kline is the new Cooperative Development Specialist for the CFAES Center for Cooperatives. Born and raised on a fifth-generation family farm in Ross County, Appalachian agriculture deeply impacted his personal and professional life. In college, his passion for agriculture and history joined. In 2018, he received his BA in History at Ohio University, and this past spring, Kline received his Master's degree in History at Auburn University, focusing on the history of agriculture, labor, and race. Kline's previous experience working with county extension offices, private foundations, and museums, helped him to develop a passion for research, youth, and economic development. He hopes to utilize his research knowledge to explore the long history of cooperation in the region. Kline is excited to join a dynamic team that strives for the development and support of cooperatives.

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Appalachian Cooperative Networks Before Rural Electrification

Rural Electrification Office https://sohp.org/research-projects/past-projects/rural-electrification/

The growth of rural electric cooperatives in the 1930s and 40s brought electricity and technological advancements, such as water pumps and agricultural machines, to much of rural America. Though these co-ops created an electrical transformation, cooperation was familiar to many rural areas, including Appalachia. From community care to unions, Appalachians had utilized community networks to cooperate for generations.

Before the rural electrification efforts, community members and farmers in the South and Appalachia, according to the Southern Oral History Program, kept telephone networks up and running for rural areas, which was only possible through cooperation. Dema Lyall, a native Appalachian from North Carolina, born in 1918, said, "I don't remember when we just didn't have a telephone." Farmers and residents worked together to provide telephones to local communities, typically working in networks of 8-10.

In some cases, telephone lines were widely available to areas that would not see any electrification efforts until the early 1940s. The community networks that supported these local telephone lines may have supported cooperatives' growth over corporations during the Rural Electric Administration's campaign the 30s and 40s. The cooperative networks established before rural electric co-ops highlight a much longer history of cooperation in the Appalachia.

The Freedom Quilting Bee, Alabama 1960s

By 1967, generations of Black men and women struggled under the sharecropping economic system, where white plantation owners often bonded people to the land through debt and labor. With the Civil Rights Movement, a group of Black craftswomen in Alabama sought to leave sharecropping and generate independent income with an increasingly popular commodity: quilts.

Freedom Quilting Bee: http://encyclopediaofalabama.org/article/h-1628

Started by a group of Black women near Selma, Alabama, the Freedom Quilting Bee collectively quilted cloth scraps into usable blankets. They hoped to generate individual income for their sharecropper spouses, families, and themselves. However, as Dr. Jessica Gordon Nembhard found, these women not only supported their families, but also promoted community economic stability. The Freedom Quilting Bee bought 23 acres of land, provided housing for evicted farmers, formed childcare cooperatives, and supported community solidarity, fostering growing support from within the cooperative and the community.

The Freedom Quilting Bee Coop highlights how Black women regained economic control through cooperation. When the traditional socioeconomic parameters oppressed these craftswomen, they mobilized collective power for themselves and the community. By including the quilting bee cooperative in the American cooperative movement's history, the real economic advantage and community stability that cooperation offers to members becomes clearer.

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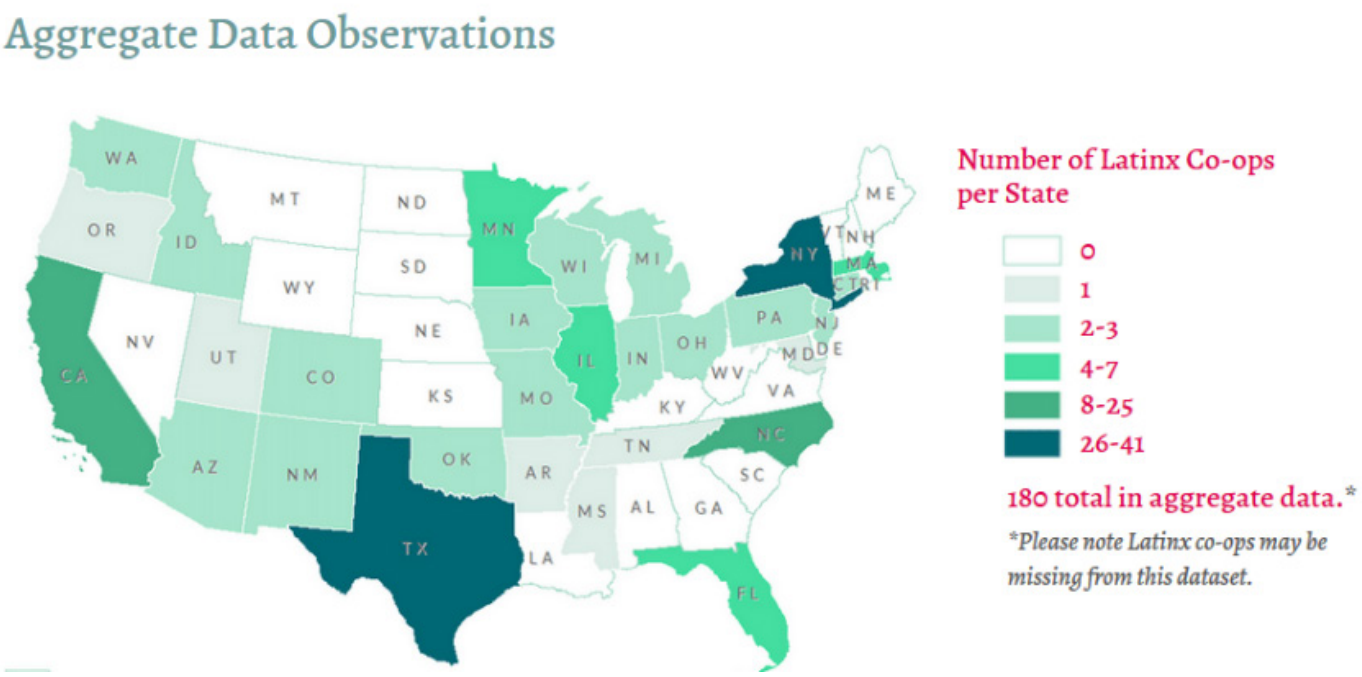

Map of Latinx Cooperatives per state https://uwcc.wisc.edu/research/latinx-cooperative-research/

Exploring Latinx Cooperatives

In a recent study, the University of Wisconsin Center for Cooperatives explored the growing cooperative movement in Latinx communities. In Latinx Co-op Power in the U.S., Dr. Jessica Gordon Nembhard and Esther West reveal a rich and expansive network of 180 Latinx cooperatives. Though Latinx cooperative history has not been studied in the American movement, Latin American communities across North America have a strong tradition of cooperation.

In their sample survey, Nembhard and West uncovered that most Latinx co-ops are urban and suburban, with nearly 89% located in urban areas. From credit unions to agriculture and food co-ops, there were Latinx cooperatives in every sector. The results also revealed that most co-ops were younger businesses, with only two Latinx co-ops formed before 2000. Between 2004 and 2020, Latinx cooperative numbers skyrocketed, with 14 developing within the last five years. Though the 180 cooperatives surveyed does not depict the entire Latinx co-op community, the study makes important strides in Latinx co-op development and efforts to integrate them into the national cooperative movement history.

The diversity of cooperatives in the United States has expanded tenfold with recent studies; however, these cooperators are often overlooked in history. Though many are familiar with the Rochdale pioneers, perhaps a more inclusive history of American cooperation should begin with indigenous networks of cooperation, such as John Curl's For All The People. With the addition of BIPOC and underserved communities, the history of the U.S. cooperative movement becomes both more inclusive and accurate.

If you would like to learn more about broadband cooperatives or to explore an opportunity for community-owned enterprises in your community, contact the CFAES Center for Cooperatives.

Contact the CFAES Center for Cooperatives for more information

740-289-2071 ext 111 bauman.67@osu.edu

Check the CFAES Center for Cooperatives website and social media for updates!

go.osu.edu/cooperatives @OSUCooperatives

Soil and Water team publishes numerous manuscripts, applies for more grant funds

By Dr. Mohammad (Arif) Rahman
SWBR Scientist

Soil, Water, and Bioenergy team members at The Ohio State University South Centers published 10, and submitted several other research manuscripts to internationally reputed, peer-reviewed journals through our national and international collaborations. Moreover, we have submitted several research grant proposals during the COVID-19 pandemic.

One of the classical papers dealt with the assessment of heavy metals pollution of soil-water-vegetative ecosystems associated with artisanal gold mining, and was published in Soil and Sediment Contamination. This paper explores how food crops grown in artisanal gold mine areas in Southern Ghana contained mercury higher that the maximum permissible limits of WHO/FAO guidelines. In addition, how both well and stream water were contaminated with heavy metals and become unsuitable for drinking due to lead, cadmium and mercury toxicity.

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WORKSHOP HELD ON GROWING ORGANIC CROPS IN UKRAINE

By Dr. Rafiq Islam
SWBR Program Leader

Rafiq Islam was actively involved, participating in and virtual teaching, in the training program "Growing organic crops in crop rotation with a focus on technical tomatoes" organized by the Institute of Water Problems and Land Reclamation of the National Academy of Agrarian Sciences of Ukraine (IWPLR NAAS), together with the European Bank of Reconstruction and Development (EBRD).

The entire training program, in six different modules, was supported by the European Union in the framework of the EU4Business initiative "Ukraine: Training for small and medium agricultural enterprises."

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Thousands take part in virtual teaching on climate-smart agricultural renaissance and global food security

By Dr. Rafiq Islam
SWBR Program Leader

Rafiq Islam, Program leader of the Soil, Water, and Bioenergy Resources at The Ohio State University South Centers, participated virtually in the International Symposium on Food Security and the Stand of Civilization: Agri-Horti-Livestock Dynamics in Changing Global Ecology, jointly organized by Bidhan Chandra Krishi Vishwavidyalaya, India, Lincoln University College, Malaysia, and University of Bengkulu, Indonesia.

The approximate 3,014 participants consisted of faculty members, scientists, professionals, and students, including personnel from several international organizations from Afghanistan, Bangladesh, Burma, Cambodia, India, Indonesia, Malaysia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, and other East Asian countries.

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Other recently published work included:

Shedekar, V.S., King, K.W., Fausey, N.R., Islam, K.R., Soboyejo, A.B.O., Kalcic, M., L.C. Brown (2020) Exploring the effectiveness of drainage water management on water budgets and nitrate loss using three evaluation approaches. Agric. Water Manag. 243: 106501.

Dutbayev, Y., Islam, R., M.J. Haus, and D. Brad (2020) Impact of Fusarium Infections on Dry Bean Stomatal Functions and Crop Physiology. Annals of Agri-Bio Res. 25: 270-274.

Kuldybayev, N.M., Slyamova, A.Y., Islam, K.R., Tsygankov, V., and Dutbayev, Y.B. (2020) Clustering methods of important soybean physiological parameters and root rot indexes. UDC 519.237.8:581.1:633.853.52:581:144.2.

Raut, Y., Vinayak Shedekar, K.R. Islam, Javier Gonzalez, Dexter Watts, Warren Dick, Dennis Flanagan, Norman Fausey, Marvin Batte, Randall Reeder, and Tara VanToai (2020) Soybean yield response to gypsum soil amendment, cover crop and rotation. Agric. Environ. Letters. https://doi.org/10.1002/ael2.20020

Reda M. Y. Zewail, Heba S. El-Desoukey & K.R. Islam (2020) Chromium stress alleviation by salicylic acid in Malabar spinach (Basella alba), Journal of Plant Nutrition, DOI: 10.1080/01904167.2020.1727504.

Emmanuel, A., Emmanuel Arthur, KA, Frimpong, S.J, Parikh, and K.R. Islam (2020) Soil organic carbon storage and quality are impacted by corn cob biochar application on a tropical sandy loam. J Soils and Sediments. https://doi.org/10.1007/s11368-019-02547-5.

Emanuel, A., Frimpong-Manso, J., Essumang, K.D., and K.R. Islam (2020) Weed control by glyphosate associated with maize production. J. Botanical Res. Appl. (Accepted for publication).

Emmanuel, A., M.A. Rahman, K.A. Nketia, R. Djouaka, N.O. Didenko, and K.R. Islam (2020) Impact of deforestation and subsequent land-use change on soil quality. Eurasian J. Soil Sci Accepted for publication).

There are two additional manuscripts that have been submitted to journals still under review.

In continuation of research, the Soil, Water, and Bioenergy team submitted six (6) grant applications to Warner Endowment (received), OARDC-IGP, OSU-IGP for Ph.D. students, NC-SARE R&E (One with OSU and the other one with Lincoln University, MO), and Kazakh-US (Bolashak) programs, which are currently under review.

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Islam delivered a 45-minute keynote PowerPoint presentation entitled "Climate-Smart Agricultural Renaissance and Global Food Security." In his presentation, he spoke about conventional agricultural practices, population growth, climate change effects (including greenhouse gas emission, global warming, and solar dimming on freshwater resources), soil health and food production and quality, conservation tillage, cover crops, and precision chemigation with new technologies and chemical-inducing (to minimize drought and salinity impacts) as part of climate-smart agriculture.

After the presentation, there was an interactive question and answer session to discuss sustainable agriculture, population growth, and climate change adaptation and mitigation with special reference to food security in Asia.


Certificate of Appreciation

to

Prof. Rafiq Islam, Ph.D.

Director, Soil, Water and Bioenergy Resources Program, Ohio State University, School of Environment and Natural Resources, Food, Agriculture, and Biological Engineering Dept., Institute of the Ohio State University, Columbus, USA

for delivering speech as Keynote Speaker at the

International Symposium (ONLINE) on

Food Security and the Stand of Civilization : Agri-Horti- Livestock Dynamics in Changing Global Ecology

In support of United Nations SDG Goal 2: Zero Hunger

conducted on 20th & 21st September, 2020

Organised by: Bidhan Chandra Krishi Viswavidyalaya, India, Lincoln University College, Malaysia & University of Bengkulu, Indonesia

Prof. Anupam Pariari, Ph.D. — Organizing Secretary, Head, Department of Plantation, Spices, Medicinal & Aromatic Crops, Faculty of Horticulture, and Dean, Students' Welfare, Bidhan Chandra Krishi Viswavidyalaya, India

Dr. Sandeep Poddar, Ph.D. — Organizing Secretary, Senior Research Director, Lincoln University College, Malaysia

Dr. Guswarni Anwar, Ph.D. — Organizing Secretary, Associate Professor, Department of Forestry, Faculty of Agriculture, University of Bengkulu, Indonesia

www.bckv.edu.in • www.lincoln.edu.my • www.unib.ac.id

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As part of the training program, Islam and Dr. Nataliia Didenko delivered a two-hour PowerPoint presentation titled "Organic Production - Principles and World Experience." Around 30 participants, mostly small scale future organic farmers in Ukraine, attended the training course held at Mykolaiv in Ukraine. Dr. Didenko, as the co-presenter, translated the presentation into Ukrainian language and explained the presentation theme and results to the participants.

During and after their presentation, both Islam and Didenko emphasized Ukraine's availability of vast areas of fertile lands that could be turned into alternate farming practices, especially organic production, compared to current industrial farming systems. Small-scale farmers could export organic produce to European and North American markets, thus improving farm stability and the livelihood of Ukrainian small and future farmers. There is a high demand for organic tomatoes particularly in the United States and Europe. The economical profitability and nutritionally healthy properties of organic crops can help provide great opportunities for small-scale, poor and new farmers, along with rural job creation and organic export marketing opportunities, can help minimize farming costs with recycling of natural resources, and reduce pollution and improve soil health and water quality.

Ukraine has the land, water, technology, and motivated people to achieve these objectives, it just needs to remove Soviet-style old administrative roadblocks and create proactive business/marketing opportunities for farmers and entrepreneurs.

Dr. Hanping Wang's aquaculture book named one of the all-time best by BookAuthority.com

By Bradford Sherman
South Centers/CFAES

Dr. Hanping Wang's latest book, *Sex Control In Aquaculture*, has been named one of the best aquaculture books of all time by the popular book recommendation and ranking website BookAuthority.com.

The 888-page, two-volume book is a comprehensive resource that covers all aspects of sex control in aquaculture, and was written by internationally-acclaimed scientists. Wang, who serves as the Principal Scientist and Director of the Aquaculture Research Center and Aquaculture Genetics and Breeding Laboratory at The Ohio State University South Centers, was the editor of the book alongside Francesc Piferrer and Song-Lin Chen.

The book's first edition was published in January 2019 by Wiley-Blackwell.

BookAuthority is one of the world's leading websites for book recommendations by thought leaders, and aids people in finding the best books on any topic. The site serves millions of book recommendations every month and has been featured on CNN, Forbes, and Inc.

BookAuthority describes its ratings as "objective and unbiased," as they are calculated based purely on data. A proprietary algorithm uses public mentions, recommendations, ratings, sentiment, and sales history to rate each book.

In addition to Wang, South Centers staff members Zhi-Gang Shen, Hong Yao, Dean Rapp, and Paul O'Bryant also contributed to authoring chapters in the book. Sarah Swanson provided chapter coordination and Bradford Sherman, Joy Bauman, and Jordan Bostic contributed to the book by providing English language editing.

Additionally, Sex Control in Aquaculture also recognized as one of the best new aquaculture eBooks of 2020. A hardcover copy of the book or downloadable Kindle digital version are both for sale from Amazon.

OCARD partnering with aquafarm giant to commercialize monosex fish

By Dr. Hanping Wang
Aquaculture Program Leader

The Ohio Center for Aquaculture Research and Development (OCARD) at the Ohio State University South Centers has partnered with Sandplains Aquaculture farm to commercialize all-male bluegill and all-female yellow perch.

Sandplains Aquaculture, located in Ontario, is one of the largest aquaculture farms in the Great Lake Region. Funded by USDA and NOAA-Sea grants, OCARD has developed technology for the production of commercial-scale, fast-growing monosex yellow perch and bluegill. Both species are the top aquaculture species in the Midwest and the Great Lake Region.

Sandplains Aquaculture wanted to try bluegill this year, since bluegill has a unique market in Toronto and New York and we can do out-of-season spawning. Bluegill males grow significantly faster and larger than females, and all-male monosex populations are needed by the aquaculture industry. OCARD at Piketon has created a technology that can generate large numbers of fast-growing, all-male bluegill populations. 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.

Successful creation of genetically male bluegill strains could have a tremendous impact on the sunfish aquaculture industry by increasing growth rate by 30-35% and saving energy expenditure by 20-30% for sex growth.

In the past several months, OCARD has produced approximately 15,000 all-male bluegill fingerlings for this commercialization project, and we are waiting for import authorization from the Canadian government for shipping the fingerlings to Sandplains Aquaculture farm.

Dr. Hanping Wang, left, is pictured alongside facility managers at Sand Plains Aquaculture farm

We will do yellow perch next year, and are conditioning perch broodfish for producing all-females next spring. Yellow perch females grow significantly faster and larger than males. OCARD at Piketon has created a technology that can generate large numbers of fast-growing, all-female yellow perch populations. A growth performance test of the all-females vs. mixed-sex group showed that all-females grew 26.3% faster than the mixed group, and 66.0% faster than males.

We thank the College of Food, Agricultural, and Environmental Sciences and Associate Dean Gary Pierzynski's support of this effort and processing of the material transfer agreement (MTA).

Direct Marketing team helps producers, consumers adjust to doing business amid COVID-19 pandemic

By Christie Welch
Direct Marketing Program Manager

While 2020 has been a challenge for us all, the Ohio State University Direct Food and Agricultural Marketing Program has continued to help Ohio's direct marketers continue to serve their customers and run their businesses. Ohio's farmers are still farming, and Ohio's consumers are still accessing the locally produced foods they have come to love and expect, but how they go about that, in many ways, has changed.

The team was awarded funding from North Central Region Sustainable Agriculture Research and Education program to help producers evaluate and adopt online sales platforms. This project allowed Ohio producers to learn from their peers about online sales platforms that have been successfully adopted by these producers. In addition, while some producers had adopted online sales platforms prior to the pandemic, the change brought about by COVID-19 has accelerated the need for many more to do so. If you are interested in these online platforms you can view the recorded presentations here: go.osu.edu/sareonlinesales.

During the busy fall season, as people were looking for safe activities and events in which to take part, our team worked with other Extension experts to develop a bulletin to assist these operators develop a plan to offer on-farm activities to Ohioans in a safe manner. Many agritourism operations put plans in place to limit the number of persons on the farm at a single time to allow for social distancing. In addition, they modified some of their activities to ensure safety. While things continue to be impacted by the pandemic, Ohio's farmers are still offering the opportunity to take part in family traditions that many have come to love, such as sunflower picking, apple picking, pumpkin picking, and shopping at farms and farmers markets.

The team also collaborated with the OSU Farm to School program to create a video about how Ohio apples are grown, picked, packed, and distributed to consumers to enjoy. The video was part of the Midwest Apple Crunch, which encourages people to eat apples as part of a healthy diet.

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What exactly is the Appalachian Export Development Program and how to apply?

The Appalachian Export Development Program is an initiative for eligible businesses in the Appalachian region of Ohio that are looking to start or grow their exports of products and services.

The program will pair accepted companies with trained export advisors in their area to develop an export plan. Grant funds will be available to help implement the export plan.

How to apply?

Companies can apply by completing an application here. The program is seeking five to 10 companies. Companies that are selected will be contacted regarding next steps.

For more information, visit development.ohio.gov/bs/bs_aedp.htm.

Which companies are eligible to apply?

To be eligible, companies must:

- Be located in an Appalachian county as defined by the Appalachia Regional Commission.
- Not exceed size standards as established by the Small Business Administration.
- Not have been a recipient of the International Market Access Grant for Exporters (IMAGE).
- Have a product or service that can be exported.
- Be willing to be counseled by the Ohio Export Assistance Network.

SBDC ASSISTING BUSINESS OWNERS WITH NEW LOW-INTEREST LOAN PROGRAM

By Brad Bapst
SBDC Director

The Small Business Development Center (SBDC) at The Ohio State University South Centers is continuing to serve the needs of businesses in the region. SBDC is monitoring the ongoing coronavirus (COVID-19) pandemic and, with the information and guidance provided by the university, state, and federal government, the program is taking all necessary precautions to reduce the spread of the virus.

The safety and well-being of our clients, training attendees, and staff is of utmost importance to us.

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We have resumed one-on-one advising services with our clients in situations where meetings can be conducted safely. We also continue to utilize telephone, e-mail, social media, and most recently, video conferencing through the Zoom communications platform to conduct counseling with clients. Our training events, however, are continuing to be conducted exclusively online utilizing the Zoom platform of communicating.

We are constantly in search of resources to assist businesses and their financial wellbeing. A recent addition to this list of resources is a low-interest loan program. The Ohio Valley Regional Development Commission (OVRDC) is currently accepting small business loan applications to assist business owners in managing their cash flow with a low-interest sustainability loan from the EDA CARES Act Revolving Loan Fund.

A pre-application questionnaire to begin the process is required from the business owner and once eligibility is determined, they will have access to apply for loans from $5,000 to $25,000 for working capital expenses, without the participation of a bank. Other features connected to the program make it easy for businesses to access capital that could help sustain them through the coronavirus downturn, including interest rates as low as 2% and no payment required for the first six months of the loan term. A business plan and supporting financial documentation, including cash flow projections, are required as a part of the loan application.

The SBDC can assist in the development of these documents. Please contact our center for assistance. Details of the loan program are as follows:

- Loans from $5,000 – $25,000 for working capital expenses
- Interest rates as low as 2%
- Pay nothing for the first 6 months
- No bank required
- Use loan proceeds for day-to-day operating expenses to work through the temporary economic downturn
- Term 3-5 years
- Low application fee of $100

Eligible borrowers include existing small business owners or sole proprietors with operations located in Adams, Brown, Clermont, Fayette, Gallia, Highland, Jackson, Lawrence, Pike, Ross, Scioto, or Vinton counties in Ohio.

For information about the OVRDC Business Sustainability Loan, please visit: ovrdc.org/rlf/business-sustainability-loans.

Our team of Certified Business Advisors are here to support you and your business. Your health, well-being and business success are our number one priority. Moving forward, the SBDC is preparing to provide additional resources in the coming months in an effort to assist businesses in the recovery process from the pandemic-induced economic disaster.

To reach us, please call 740-289-2071 or visit us online at southcenters.osu.edu/business We also continue to update businesses with the latest information through our Facebook page.

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You can view the video by visiting farmtoschool.osu.edu/2020/09/28/apple-crunch-virtual-event-2020/.

And as we continue to adjust to life amid the pandemic, we continue to work with our producers to adapt their businesses. The Direct Marketing Program is collaborating with the Farmers Market Coalition and the Ohio Farmers Market Network to evaluate the strengths and weaknesses of Ohio farmers markets' work in data collection, and training managers and Extension educators on the suite of available tools and appropriate methodologies to help create a culture of shared data collection and use to increase the sustainability and success of farmers markets. The first phase of the project is to create a database of farmers markets that collect data, and understand how they use that data for decision-making. This three-year project is funded by USDA's Sustainable Agriculture Research and Education Program. Over the course of the project, the hope is to help create a culture of data collection and use among Ohio farmers markets in an effort to help them with decision-making and planning to increase this important market channel for Ohio's direct marketing farmers and food producers. If you would like to learn more, contact Christie Welch via email to welch.183@osu.edu.

FROM THE FIELD

By Ryan Slaughter
Research Assistant

Despite all the changes brought on by COVID-19 in everyday life, activity for the research farm has changed very little.

The presence of the specialty crops team to accomplish all the intricate day-to-day duties required to raise a healthy crop of fruits for research and Extension purposes has never ceased. Weeding, mowing, spraying, planting, and harvesting are activities that continue.

Some highlights, as the growing season comes to a close, come from the fruit that has been (and is still being) harvested. The last of the wine grapes, traditionally the last fruit crop to be harvested at the Ohio State University South Centers, were picked and data recorded the week of October 12. These grapes are used to make wine and later evaluated for quality and flavor. The South Centers Research and Extension Vineyard is one of three within The Ohio State University system; the other two are in Wooster at Ohio Agriculture Research and Development Center (OARDC) and Kingsville at Ashtabula Agriculture Research Station (AARS).

As of October 23, the fruits of ripe hardy fig plants are being harvested, and this may very well continue as long as the temperatures stay above freezing.

Small Fruit Specialty Crops Update
Ryan Slughter
Research Assistant
youtube.com/watch?v=fhx4rCqT4sk

There is a replicated fig trial at South Centers with plants both outdoors and inside an un-heated high-tunnel, a plastic cover metal structure that helps collect and maintain heat units. Peak production for both the tunnel-grown figs and the outside-grown figs was October 9th, but fruit still continues to ripen.

Another highlight from the Small Fruits team is the move to virtual Extension programming. The Fall Fruit Update occurred on September 9 this year in the form of a Live Q&A session focused on five major crop types. Each Q&A was preceded with a short update on the crop, and these can still be viewed on YouTube by searching “Small Fruit Specialty Crops Update.”

Presentations on blackberry production and hardy fig and hardy kiwi production were also given by Dr. Gary Gao and Ryan Slaughter, respectively, at Farm Science Review 2020.

Those presentations can be viewed at fsr.osu.edu. Stay tuned for more virtual offerings from the team in the future.

INNOVATIVE ENGAGEMENT
+ ACTIVE COLLABORATION

SMALL FRUITS

A MESSAGE FROM DR. GARY GAO
Professor and Extension Specialist

This year has been quite challenging in many ways; COVID-19, obviously, is one of those. As you read this article, I hope it finds you healthy and that conditions are improving where you live. COVID-19 is an invisible enemy and we need to work together to defeat it.

Another challenge in 2020 was the crazy weather. Fruit production can be quite dependent on weather conditions and spring frost and freezes did hurt some of the fruit crops. Fortunately, some crops came through well, considering what has happened this year. As we try to put the 2020 in rearview mirror, here are some things we have learned and done.

- Remote Learning can be quite effective. Admittedly, I was not that excited about using this tool known as Zoom initially, but quickly realized that remote learning would be around for a while. With some serious training, I learned how to use it effectively. We hosted a Fruit Research Update with Live Q&A. More than 90 people had registered for the class. A few of them attended the program live while others watched at their leisure as an "on-demand" option. Overall, it was a success. We will keep tweaking our programs to make our future programs more engaging. Our upcoming programs will include the annual Fruit Pruning Workshop, as well as a Blueberry School and Bramble School.
- OSU's Farm Science Review went virtual this year as well. I gave a presentation on blackberry production that went very well. I heard the entire program was quite successful. I, like all of you, do miss the interactions with growers, gardeners, colleagues, and friends.
- OSU Master Gardener State Conference was offered online too. I gave a presentation on raspberry production in the home gardens. Master Gardener volunteers have a special place in my heart; they are very eager to learn and help.

On a more personal front, I have been serving as a University Senator for about two years now. It has been very interesting to attend the senate meetings to learn about the operation of The Ohio State University. As a part of my university senator duties, I served on the Committee for Evaluation of Central Administration. We evaluated Kris Devine and her office last year. Ms. Devine is the Vice President of Operations and Deputy Chief Financial Officer. Here is her website: busfin.osu.edu/people/kristine-devine.

I was quite impressed by their achievements and all of the work that went into what they do. Our committee also made a few suggestions in a committee report on behalf of the faculty council and the university senate. For the year 2020-2021, we will be evaluating Ms. Stacy Rastauskas, Vice President for Government Affairs. Here is her website: oaa.osu.edu/rastauskas-stacy. I am chairing this panel and looking forward to this important task.

If you need to reach me, e-mail is the best way, as I check it regularly. My address is gao.2@osu.edu. With questions through e-mail, I can give you a more detailed and educated answer. Cell phone works well too. I can always give you a call the conventional way. Another way to connect is to schedule a virtual farm visit using Zoom. I have done quite a few of these already, and they have been fun and informative. Call or email me if you would like to schedule one.

In the meantime, stay healthy and safe!

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