



URBAN AG NEWS
CREATING CHANGE BY SHARING SCIENCE



One of the major objectives of OptimIA project researchers was to establish an outreach program to engage with stakeholders in the indoor vertical farming community. Photo courtesy of Chris Higgins, Hort Americas

Where Can You Get Accurate Information About Indoor Farm Production?

August 28, 2023

By David Kuack, UrbanAgNews.Com

OptimIA project members are sharing their indoor farm research findings with the controlled environment agriculture industry and the public through a variety of educational and informational outlets.

The indoor farm industry is very fluid right now with changes occurring on a weekly basis. New companies are starting, some are leaving the industry, while others continue to receive millions of investor dollars to expand their operations. While financial stability is a key factor in the sustainability of some of these businesses, the need for production- and economic-related information is crucial to profitably producing quality leafy greens crops. Those with the financial backing have been able to develop and implement their own technology to produce indoor crops. New indoor farm growers, existing operations with limited financial resources, and even large-scale farms already in operation continue to look for sound production- and economic-related information that they can apply to their businesses.

Improving the indoor farm industry

In 2015 when members of the OptimIA project team initially submitted a USDA Specialty Crop Research Initiative grant proposal for funding, the primary focus of their research was on the production of leafy greens

in indoor farms, but the focal points were moderately diverse.

“We went through the proposal submission process for several years before USDA approved the grant for the OptimIA project,” said Erik Runkle, who is project director and a horticulture professor at Michigan State University. “The proposal that was finally approved was to study the aerial environment as well as economics for leafy greens grown indoors. The aerial environment refers to air circulation, humidity, carbon dioxide concentration, light and temperature.”

One of the major objectives of the OptimIA project was to focus on industry outreach.

“The outreach program objective was to engage with stakeholders in the indoor vertical farming community,” Runkle said. “Prior to submitting the proposal to USDA, the project team members worked with an industry advisory committee and stakeholders from the indoor farm community.”

OptimIA team member Chieri Kubota, who is a professor and director of Ohio Controlled Environment Agriculture Center (OHCEAC) at Ohio State University, said proposals submitted for USDA Specialty Crop Research Initiative (SCRI) grants usually require both a strong research and outreach focus.

“USDA SCRI-funded projects focus on problem solving to move a specific industry forward,” Kubota said. “Not only is the research important, but also implementation of research findings in the industry sector. This is basically outreach extension. The proposals cannot just focus on research alone. It is important to have strong outreach activities.”

Some of the main activities of the OptimIA outreach program are the Indoor Ag Science Café and OptimIA University, which allow project researchers to engage indoor farm stakeholders through a community educational platform.



Some of the main activities of the OptimIA outreach program are the Indoor Ag Science Café and OptimIA University, which allow project researchers to engage indoor farm stakeholders through a community educational platform.

Multiple outreach activities, educational materials

Even before the grant proposal was submitted to USDA, OptimIA team members had already begun interacting with members of the indoor farm industry.

“We had been engaging stakeholders as a sort of proposal activities,” Kubota said. “We started doing the Indoor Ag Science Café almost a year in advance of submitting the grant funding proposal. That way we were engaging our stakeholders trying to develop a community educational platform that was a main activity. Indoor farm growers and equipment manufacturers are the general target audience of the project’s research. Team members are also constantly answering questions from growers and venture capital companies regarding indoor vertical farms.”

The OptimIA website includes a variety of educational materials including Research Highlights articles , scientific research journal publications and trade magazine articles, including Urban Ag News.

The OptimIA team members have also shared information from their research at various scientific- and grower-focused industry conferences. In July several members shared their research findings at Cultivate’23 during an educational workshop on the Essentials of Hydroponics Production: A tHRIve Symposium.

Team members have also been developing online educational materials under OptimIA University, which include YouTube videos.

“We have posted several lectures with topics based on discussions among the project members,” Kubota said. “The concept of OptimIA University is free access to whoever wants to use the online materials. The grower sector is the targeted audience.

“Rather than offering courses for a fee, we decided to make the information available to everyone, including growers and other companies that want to use it to train their employees. It consists of YouTube video lectures with pdf slides and additional reading materials. The OptimIA University website is about half completed and there are other course lectures still pending.”

The OptimIA researchers also hold an annual invitation-only stakeholder meeting.

“The annual meetings are specifically for our advisory committee which gives team members an opportunity to share information about the research in progress and that has been recently completed,” Runkle said. “It’s also an opportunity for the committee members to provide feedback and guide future project activity.

“We also invite growers and company representatives who we have worked with in some capacity on research projects. This includes growers with whom we may have conducted research trials or representatives from companies that have provided us with equipment or supplies used in our research.”

While the primary focus of the OptimIA project outreach program is members of the indoor farm industry, team members have also extended their educational activities to the general public, including the COSI Science Festival.



While the primary focus of the OptimIA project outreach program is members of the indoor farm industry, team members have also extended their educational activities to the general public, including the COSI Science Festival.

Educating the public

Even though the primary focus of the OptimIA project outreach program is members of the indoor farm industry, the team members also extend their educational activities to the general public.

“OptimIA researchers at Ohio State participated in the COSI Science Festival organized by the Columbus Museum of Science and Industry,” Kubota said. “This is a community STEM educational event in which companies and scientists participate and showcase their technologies and science. It is held in May over multiple days. We participated as an OptimIA group. We showed how leafy greens can be produced using different hydroponic systems with LED lights. OptimIA team members at Michigan State University and at University of Arizona have also done similar STEM programs related to hydroponic crop production for the public.”

For more: Erik Runkle, Michigan State University, Department of Horticulture; runkleer@msu.edu; https://www.canr.msu.edu/people/dr_erik_runkle; https://www.canr.msu.edu/profiles/dr_erik_runkle/cell. Chieri Kubota, Ohio State University, Department of Horticulture and Crop Science; kubota.10@osu.edu; <https://hcs.osu.edu/our-people/dr-chieri-kubota>; <https://ohceac.osu.edu/>. OptimIA, <https://www.scri-optimia.org/>.

This article is property of Urban Ag News and was written by David Kuack, a freelance technical writer in Fort Worth, Texas.