# **KVGA Newsletter**

#### June 2021

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#### Guest Editorial: Kentucky Vegetables 2021 with Shubin K. Saha

Many of you may remember me from my days as an Extension Vegetable Professor during my time at the University of Kentucky. In 2017 I switched gears away from academia and into commercial production working with Kentucky Fresh Harvest, located in Stanford, KY. I have worked for the last 20 years in protected agriculture in some form. During my training I have worked for K&M of the Treasure Coast, greenhouse cucumber operation and Beli Farms, greenhouse tomato and cucumber production. Through my career I have assisted growers of all sizes in field and greenhouse vegetable production primarily in Kentucky and Indiana but also includes farmers in Canada, New Zealand, India, Alaska, Michigan, Ohio, West Virginia, Pennsylvania, Delaware, Illinois, Tennessee, Florida, Missouri, North Carolina, and Maryland.

I realize the last year has been challenging during the pandemic for many, but hopefully it gave all of us some perspective on life and our professions. I know most all in agriculture kept moving forward even under some difficult conditions. The fog seems to be lifting so to speak so we can focus more on critical production issues. Supply availability has been challenging for materials needed for vegetable production. If sourcing wasn't an issue, it is likely that transporting it too your farm may be their ultimate challenge. We have seen the price of various materials increase in cost as well as shipping for these materials has also increased. With all of this being an issue, proper planning has become even more important than ever. I encourage you to spend the valuable time planning out the season as many of you do, but now it has become necessary to get ahead of the

#### In this issue:

Kentucky Horticulture Research Initiative Update Specialty Crop Research Update: 2021 Cicadas and Vegetable Crops Virtual Trading Post Notes from Dr. Rachel Rudolph Meet Megan Taylor at Murray State Systemic Acquired Resistance (SAR) Food Safety Updates Agriculture Water Testing Reminder Microbial Water Quality Profile (MWQP) Kentucky Specialty Crop Block Grant Leafy Greens Survey On-Farm Water Systems Upcoming Events curve and plan even earlier to allow for items to arrive as needed. Wood pallets for packing product is a significant issue for some producers as the availability is limited and pricing in some cases has increase fivefold. Examples like this are more reason to plan earlier.

By this time in June, most of your warm season vegetables should be transplanted and, in most years, would likely be progressing nicely. However, we are having a cool start to the beginning of the summer season and you might have some unhappy plants. You may see symptoms such as purpling leaves which appears to be phosphorus deficiency. While it is technically a phosphorus deficiency, it is not necessarily because it isn't present in the soil. Actually, most of Kentucky soils are loaded with phosphorus naturally, in fact the last few years of field production in Kentucky, I never *Continued on pg. 2* 

### **KVGA Officers**

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Ryan Burnette, Kentucky Department of Ag (Frankfort) Dr. Cindy Finneseth, Kentucky Horticulture Council (Lexington) Dr. Rachel Rudolph, UK Department of Horticulture (Lexington) Dr. John Strang, Ret. UK Department of Horticulture (Lexington) Dr. Shawn Wright, UK Department of Horticulture (Jackson) added phosphorus to the soil because the soil reports always show more than sufficient availability. The issue with the cooler weather is the roots of the vegetable crops do not work efficiently and struggle to take up enough phosphorus. This is certainly a season where raised beds and plastic mulch along with drip tape can provide root zone warming which can help mitigate this issue.

Additionally, with the cool wet weather, producers should be thinking of their preventative fungicide programs. Keep in mind most fungicides are preventatives and not curatives. This means they need to be present on the plant foliage before the pathogen is introduced into the system. This differs from insecticides in that most of those products are curative rather than preventative. There are several great resources online to assist with spray program development for fungicides on vegetables including Purdue University's ID-56 and University of Kentucky's ID-36. Further if assistance is needed you should certainly reach out to your local county extension agent. Keep a watch in the future as we at KFH are in the beginning stages of developing some educational opportunities with collaborators in the state.

Best of luck on the 2021 vegetable season!

Shubin K. Saha, D.P.M., Ph.D.

Vice President, KVGA

#### Kentucky Horticulture Research Initiative (KHRI) Update

In the first quarter of 2021, KHRI received contributions from the following Kentucky farmers markets:

Mercer County Farmers' Market Taylorsville Farmers' Market Woodford County Farmers' Market Blue Grass Farmers' Market

You may recall from the last newsletter that this year KVGA is matching — up to \$5,000 — each farmers market donation.

Between January and March, an additional \$1,020 was added to the KHRI to support research projects that provide new and valuable information to increase grower profitability.

#### Donor Highlight:

Woodford Co Farmers Market

\$250 to support KY research projects!

Support WCFM on Mondays, Wednesdays and Saturdays!

https://woodford.ca.uky.edu/ content/farmers-market

Please consider making a 2021 donation to KHRI. This tax-deductible funding goes directly to support research projects that provide new and valuable information to increase grower profitability.

Make checks payable to: KVGA (*write KHRI in memo box of your check*)

Send to:

Ron McMaine Treasurer, KVGA 450 Hawkins Lane Salvisa, KY 40372

Aasafe **Bluegrass Farmers Market Circle T Farms Community Farm Alliance** FoodChain **Roby Forree Glean Kentucky** Hinton's Orchard & Farm Market **Kentucky Farm Bureau Kentucky Horticulture Council** Kentucky Vegetable Growers Association **ML** Irrigation **Mercer County Farmers Market** Midwest Vineyard Supply, Inc. **Monte Package Company** Nutrien Ag Solutions **Reid's Orchard Rockford Packaging Rupp Seed** Seedway **Taylorsville Farmers Market USDA NRCS** Woodford County Farmers Market

KHRI Donors 2021



#### Specialty Crop 2021 Research Project Update

KVGA partners with the Kentucky Horticulture Council to identify and articulate research needs to university programs in Kentucky. The University of Kentucky College of Agriculture Food and the Environment (UK) and Kentucky State University College of Agriculture, Food Science and Sustainable Systems (KSU) are important research partners dedicating resources to developing solutions that address industry needs. In 2021, 20 seasonal specialty crop research projects and 9 perennial crop research projects are planned, including:

- Diamond Back Moth Control with Reduced Risk Insecticides PI: Dr. Ric Bessin
- Weed Control in Plasticulture Strawberries PIs: Dr. Shawn Wright with Dr. John Strang
- Mini-Watermelon Variety Trial PIs: Dr. Shawn Wright with Dr. John Strang
- Weed Management Alternatives for Pumpkins PI: Dr. Rachel Rudolph
- Mustard Cover Crop Varieties and Planting Dates PI: Dr. Rachel Rudolph
- High Tunnel Rotation with Tomatoes and Cut Flowers PI: Dr. Rachel Rudolph
- Performance of soilless culture cucumbers for truncated greenhouse production PI: Dr. Garrett Owen
- Boston fern cultivar daily light integral (DLI) evaluation for hanging basket and container production PI: Dr. Garrett Owen
- Reduced temperature energy-efficient bedding plant production PI: Dr. Garrett Owen
- Apples/Asian Pears Scion Wood Orchard PI: Dr. Shawn Wright
- Fall Broccoli Variety Trial PI: Dr. Shawn Wright
- Fall Kale Planting Demonstration PI: Dr. Shawn Wright
- Fig Container Plant Production and Fruit Production PI: Dr. Win Dunwell
- Softwood Cutting Propagation of Brown Turkey and Celeste Figs PI: Dr. Win Dunwell
- Cucurbit Downy Mildew Sentinel Trial PI: Dr. Win Dunwell
- Black Landscape Fabric as Weed Control in Market Gardens PI: Dr. Win Dunwell
- Ornamental Plant Variety Trails PIs: Dr. Win Dunwell, Dr. Garrett Owen
- Mini-Pumpkin Variety Trials PI: Dr. Win Dunwell
- Boxwood Variety Trials in anticipation of testing against Boxwood Blight PI: Dr. Win Dunwell
- National Arboretum Hydrangea and Hamamelis (Witchhazel) cooperator PI: Dr. Win Dunwell

#### Ongoing Research Trials and Demonstration Plantings

- Highbush Blueberry Variety Trial (CKY). Six replications of 11 newer varieties of highbush blueberries were established in 2020.
- Hop Yard Establishment (CKY, EKY). This is an on-going project with KY Hop Growers Alliance and is primarily funded by a KY Specialty Crop Block Grant.
- <u>Hybrid hazelnut evaluation (EKY)</u>. This is a cooperative project between UK, KSU, and University of Oregon focused on evaluation of disease resistance and nut production of European and American hybrids.
- Pawpaw Demonstration Planting (EKY). This is a cooperative project between UK and KSU.
- Peach and Nectarine Cultivar Trial (WKY).
- <u>Apple/Peach Rootstock and Peach/</u> <u>Nectarine Cultivar Trial (WKY).</u>
- Blueberry Container Fruit Production (WKY). An ongoing evaluation of highbush blueberry adaptability to fruit production in above-ground containers.
- <u>Blueberry Demonstration Plot (EKY).</u> An existing planting is used for teaching and maintained for Spotted Wing Drosophila IPM monitoring.
- Sweet Cherry Rootstock Training, and Fruit Production Demonstration (WKY). An ongoing evaluation of newer dwarfing rootstocks adaptability to growing in a clay soil that drains slowly and is not suitable for older standard-sized rootstocks.

#### **Cicadas and Vegetable Crops**

By now you must have heard about Brood X — Kentucky's expected cicada infestation. News outlets have reported sightings and we should expect seeing many more in Kentucky as soil temperatures have been increasing. (Soil temps of 64F at 8" below the surface, to be exact.)

It is expected that cicadas will be present throughout Kentucky, with counties along the Ohio River and forested areas having the highest numbers of insects.

According to Jonathan Larson, University of Kentucky Extension Entomologist, "Normally we see the annual cicadas, which are green and black, but the cicadas emerging this summer are a different species. They are black with red eyes and orange marks on their wings," Larson said. "It will be a unique experience. The trees will be very loud this spring. People should get out and try to enjoy them while they are here."

Is it possible for Kentucky vegetable growers to enjoy the "music" of the cicadas or should you be worried about damage to your crops?

If you are only growing veg crops, the risk of damage is minimal, since damage is caused from adult females laying eggs in branches. If you have a diverse operation with tree fruits and brambles, though, you might see damage especially in young trees.

"Those can be damaged as the female cicadas lay their eggs in their branches," Larson said. "Getting some netting with holes that are less than one-half-inch wide and wrapping it around the young trees for about six weeks while the insects are out will keep those females from laying their eggs on them."

Branch tip dieback and flagging is the common sign of damaged caused by cicadas. Chemical controls are not recommended.

#### More Information on Cicadas

Billions of Cicadas Will Return to Kentucky in Late Spring (https:// uknow.uky.edu/campus-news/billions-cicadas-will-returnkentucky-late-spring )

Cicada Safari (https://cicadasafari.org/)

Cicadas (https://extension.umd.edu/resource/cicadas)

17-Year Cicadas of Brood X (https://extension.illinois.edu/blogs/ garden-scoop/2021-05-08-17-year-cicadas-brood-x)

#### **Virtual Trading Post**

The Trading Post bulletin board has always been a popular feature of the annual Kentucky Fruit & Vegetable Conference. Now you don't have to wait until January to let others know if you need or have land, supplies, or used equipment. The Kentucky Horticulture Council is offering a free service online for KVGA members to list items for sale (or to give away).

Just email KHC (info@kyhortcouncil.org) a description of the items along with your name, phone number, and the price as well as any other important information.

Descriptions are supplied by the sellers – it is the buyer's responsibility to read carefully and ask questions if you are interested in an item; neither KVGA or KHC takes responsibility for the quality, operational status, terms, etc... of any item listed.

The web address is: https://kyhortcouncil.org/trading-post/



Brood X cicadas are easily identified— black bodies, red eyes, and wings with orange markings (cicadasafari.org)



Brood X cicada exoskeletons will be left clinging to leaves, tree trunks, and other surfaces (cicadasafari.org)



Cicada emergence holes— 1"-2" wide (https:// extension.umd.edu/ resource/cicadas)

#### Veg Notes from Dr. Rudolph

Hi, Kentucky Vegetable Growers!

Although sometimes the weather makes it hard to tell, summer is right around the corner. Vegetable research is in full swing as we try to work around the rainy days. Here is an update on the research trials and projects we are working on:

#### Evaluation of pest management at different planting dates for spring broccoli

In collaboration with Dr. Ric Bessin, the vegetable entomologist, we planted broccoli at three different time points this spring—early, mid, and late planting.

Weekly scouting of plants for damage-causing caterpillars, such as cabbage loopers and the larvae of diamond -back moths, indicates whether a pesticide application is needed. We are also evaluating the different planting dates for yield and quality. This is the second year of this project with promising results from 2020.

#### Kale and lettuce cultivars trials in both high tunnels and open field

We are evaluating six different kale varieties and 10 different lettuce varieties in both the high tunnel and field for yield and quality. The results of this trial will be published in the next UK Fruit and Vegetable Research Report which is usually available in early January. Stay tuned!

#### Weed management alternatives in bare ground pumpkin production

This is a new trial and will evaluate five different weed management options in the walkways of pumpkins planted on bare ground—pre-emergent herbicide, pre- and post- emergent herbicide, cultivation, herbicide-killed cover crop, and mowed cover crop. The idea came about from discussion with growers interested in different options for weed management, particularly in pumpkins.

#### Multi-state winter squash cultivar trial

In collaboration with several other states in the Southeast region, we will be evaluating 10 different varieties of *Cucurbita maxima*. Although grown in warm weather, it has a long days to maturity window. When stored in the correct conditions, the harvested fruit can keep for several months.

#### Evaluation of root-knot nematode resistant tomato rootstock in high tunnels

These are on-farm trials that would not be possible without the collaboration of commercial vegetable growers. Five different rootstocks are being evaluated in high tunnels with high root-knot nematode populations. Although there are several species of root-knot nematode, resistance is for only one species, *Meloidogyne incognita* (aka Southern root-knot nematode) and it can cause significant yield loss in tomato and even plant death. Resistant rootstocks may be a valuable part of an integrated strategy for management of these plant parasites. This is part of a graduate student project with promising results from year one. If you would like to read more on root-knot nematodes, here is a great informational website: <a href="https://www.apsnet.org/edcenter/disandpath/nematode/pdlessons/Pages/RootknotNematode.aspx">https://www.apsnet.org/edcenter/disandpath/nematode/pdlessons/Pages/RootknotNematode.aspx</a>

I hope the growing season is going strong for all of you.

Happy growing,

Rachel Rudolph, PhD UK Extension Vegetable Specialist





Root-knot nematode symptoms on 'Rutgers' tomato roots. Other species of root-knot nematodes produce similar galling symptoms. T. Schwarz, NC State University



### Meet Dr. Megan Taylor!

Dr. Megan Taylor is a new professor of Agronomy at Murray State University in Western Kentucky. An Indiana native with a production agriculture background, she is new to Kentucky and already has several vegetable research projects underway, including pumpkin and tomato field trials.

Look for Dr. Taylor at summer field days and the 2022 Fruit & Vegetable Conference.

MSU Hutson School of Agriculture 401B S. Oakley Appl. Science Bld. Murray, KY 42071 mtaylor68@murraystate.edu

#### Systemic Acquired Resistance (SAR)

In the last newsletter, Dr. Rudolph mentioned Actigard registration and how that product's mode of action is Systemic Acquired Resistance (SAR). SAR is one of two well-characterized states of induced resistance; the other is Induced Systemic Resistance (ISR).

How does SAR work?

SAR is a physiological state — a defense mechanism in plants that confers long-lasting protection against many different microorganisms. SAR depends on the signal molecule salicylic acid (SA) and is associated with accumulation of pathogenesis-related proteins, which are thought to contribute to resistance. Induced Resistance (caused by either biochemical or microbial agents) is a physiological "state of enhanced defensive capacity" triggered by specific environmental conditions that cause the plant's internal defenses to activate and protect the plant from subsequent pest attacks.

Simply, in the case of Actigard (common name = Acibenzolar-S-methyl), application of the product doesn't impact pathogens directly, but causes the plant to create compounds (carboxylated byproducts) that boost the plant's defenses. Because the mode of action has no direct action on plant pathogens, development of resistance to these compounds is low.

Note that Actigard is not a biopesticide. The EPA definition of biopesticides are "naturally occurring substances that control pests (biochemical pesticides), microorganisms that control pests (microbial pesticides), and pesticidal substances produced by plants containing added genetic material (plant-incorporated protectants) or PIPs."

Are you interested in reading more about SAR, ISR, and Actigard? Try these publications:

Actigard EPA Registration No. 100-922 (<u>https://www3.epa.gov/pesticides/chem\_search/ppls/000100-00922-20060801.pdf</u>)

Signal Regulators of Systemic Acquired Resistance (<u>https://uknowledge.uky.edu/cgi/viewcontent.cgi?referer=https://</u>search.yahoo.com/&httpsredir=1&article=1032&context=plantpath\_facpub)

Systemic Acquired Resistance (https://www.sciencedirect.com/topics/immunology-and-microbiology/systemic-acquired-resistance)

Systemic Acquired Resistance and Induced Systemic Resistance in Conventional Agriculture (https:// execdeanagriculture.rutgers.edu/pdfs/goodman-093.pdf)

#### **New Produce Safety Rules**



Under legislation passed by the Kentucky General Assembly earlier this year, the Kentucky Department of Agriculture is implementing new produce safety rules. The new rules require vegetable (and fruit) growers averaging \$25,000 or above in annual sales during the last 3 years to complete a farm survey with the KDA and complete the 7-hour Produce Safety Alliance (PSA) Grower Training course.

Virtual training hosted by KDA and UK will be online in June and July.

Remember that Produce Best Practices Training (PBPT) is not the same as the PSA grower training. But, the PSA training can substitute for PBPT training for farmers' market sampling certificates.

If you haven't yet completed the farm survey or participated in a PSA training, KDA requires completion of the Produce Farm Survey. You can complete the survey on-line or via a mail-in survey card. KDA requires this regardless of farm size or sales. If you have not already completed the survey, you can do so on-line by visiting KDA's Produce Safety website (<u>https://www.kyagr.com/marketing/plant/fsma-survey.aspx</u>).

For questions or more information, contact KDA Produce Safety Program Manager Mark Reed at <u>mark.reed@ky.gov</u>.

#### **Agriculture Water Testing Reminder**

Remember that the ag water components of FSMA go into effect in January, 2022. The Kentucky Horticulture Council (KHC) is still accepting growers for the agricultural water testing program to help produce growers better understand the microbial quality of their surface and ground water sources used for production and post-harvest activities.

KHC's program in partnership with National Farmers Union's Local Food Safety Collaborative (LFSC) provides on-site technical assistance to Kentucky growers. If you would like to participate in the program, please email KHC at: info@kyhortcouncil.org.

Watch for KHC at local farmers markets this season talking about food safety and ag water testing. If you would like to host an ag water food safety event at your local market, send a note to KHC at info@kyhortcouncil.org.

#### **Microbial Water Quality Profile**

The Produce Safety Rule (PSR) requires growers to establish a Microbial Water Quality Profile (MWQP) for each untreated agricultural water source used during growing activities of covered produce using a direct water application method and conduct annual surveys for that water source in subsequent years.

The MWQP is based on the levels of generic *E. coli* in your agricultural water sources. There are different requirements for agricultural water that comes from surface or ground (well) sources.

More information on the Produce Safety Rule and agricultural water can be found here: www.fda.gov/Food/GuidanceRegulation/FSMA/ ucm334114.htm

#### Kentucky Specialty Crop Block Grant Program Announcement

Each year, the Kentucky Department of Agriculture (KDA) receives funding from the United States Department of Agriculture (USDA) to support specialty crop projects. The federal Specialty Crop Block Grant (SCBG) program requires that applicants describe how projects will potentially affect and produce measurable outcomes for the specialty crop industry and/or the public. This is a competitive program and KDA prohibits funding for projects that solely benefit a particular commercial product or provide profit to a single organization, institution, or individual.

Specialty crops are defined as vegetables, fruits, tree nuts, dried fruits, horticultural products, nursery crops (including floriculture), and honey. For a comprehensive list, visit: <u>https://</u><u>www.ams.usda.gov/services/grants/scbgp/specialty-crop</u>.

The SCBG program is usually a two-step process, with submission of a pre-proposal followed by an invitation to submit a full proposal. 501 (c)(3) nonprofit organizations (like KVGA) and quasi government entities, including public universities, are eligible to apply.

If you have a project idea, please let a board member know. (Note: It will probably be too late for this year's grant program, but will be great information for developing future projects.)

Preliminary proposals must be submitted by email to <u>brandiel.craft@ky.gov</u> no later than 4:30 p.m. EST on June 18, 2021 for this year's supplemental program.

# Leafy Greens Under Protected Ag Systems:

#### Your Input Is Needed!

University of Kentucky researchers are seeking voluntary input from individuals or businesses producing leafy greens (lettuce, kale, spinach, etc.) under protected culture. This 5-minute industry survey aims to identify research and Extension priorities focused on production systems, culture, harvest, food safety, and marketing of leafy greens.

If you or your business currently grow or are interested in growing leafy greens under protected culture, and are willing to participate in this short survey, please click on the link below.

#### https://uky.az1.qualtrics.com/jfe/form/ SV\_cCsJMsrWPBCrgSa



Except for your time, there are no risks or conflicts of interest associated with participation in this study and participation is voluntary. All responses will remain confidential. Your anonymous input for the survey will help identify research and Extension priorities in the United States.

#### **On-Farm Water System Upgrades**

Are you considering a water related project installation or upgrade on your farm?

The Kentucky Agricultural Development Fund offers an On-Farm Water Program to help KY farmers with water projects. The program has cost share funds to incentivize better water management practices.

Projects can include irrigation infrastructure, microirrigation systems, high tunnel gutters and catchment systems, and many more strategies to help you manage water for your produce crops.

2021 Deadlines: July 30 and October 29

Program guidelines can be found online: <u>https://agpolicy.ky.gov/funds/Documents/project-guidelines\_water.pdf</u>

#### **Upcoming Industry Events**

- 6/18 KSU Small Farms Third Thursday (Value Added Products)
- 6/18 SCBG Pre-proposal Deadline
- July Kentucky Grown Cut Flower Month
- 7/9 OAK Virtual Field Day
- 7/14 LAND (Bowling Green)
- 7/30 KADF On-Farm Water Program Deadline
- 8/5 LAND (Henderson)
- 8/5 OAK Virtual Field Day
- 8/12 LAND (Maysville)
- 8/15—8/29 Kentucky State Fair (Louisville)

# Save-the-Date

2022 Kentucky Fruit & Vegetable Conference

- Jan. 2 Pre-Conference Events
- Jan. 3-4 Educational Sessions & Trade Show

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Do you have a question about production, marketing or another veggie-



related topic? Send in your question and you may see it answered in a future newsletter!

# Info@KyVGA.org

