

KVGA Newsletter

June 2023

Vol. 4. No. 2



As we approach the peak of the warm season, we reflect on the unique challenges that have characterized this year's growing season. Unusually cool weather persisted until the third week of May, causing some crops to respond sluggishly. However, with the recent surge in temperatures, we anticipate a rapid increase in their growth rate. Alongside this, the prevailing dry conditions have presented us with arthropod pest issues rather than foliar diseases.

Looking ahead, it is essential to prepare for the predicted El Niño year, which could bring up to 50% more rainfall this summer. Considering this forecast, it is advisable to develop a preventative fungicide program if you haven't done so already. Remember that fungicides must be applied before significant disease onset to effectively mitigate potential issues. Unlike insecticides, which are typically used after pest detection, fungicides require proactive measures. Fortunately, numerous tools and resources are available to aid growers in forecasting and managing pathogen-related challenges.

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For cucurbits, one such tool is Melcast (<http://melcast.ceris.purdue.edu/>). This forecasting system assists in timing fungicide applications to manage Alternaria leaf blight, anthracnose, and gummy stem blight in cantaloupe and watermelon. In some years, Melcast has proven to reduce fungicide applications by 2-3 times, offering significant cost savings. If you require assistance with Melcast or obtaining weather coordinates for your county, please reach out to your county agent for guidance.

Additionally, I encourage you to access information on downy mildew (<https://cdm.ipmpipe.org/>), a potential threat to cucurbits such as pumpkins, squash, cucumber, and watermelons. This resource not only provides valuable insights but also offers text and email alerts as the disease approaches your location. Downy mildew typically cannot overwinter in Kentucky and tends to spread from the southeast with rain and weather patterns. Although it has been detected as far north as Charleston, SC this year, increased rainfall as predicted may hasten its arrival in our region.

In conclusion, I want to reiterate the utmost importance of collaboration, particularly during these challenging economic times. As farmers facing common obstacles and uncertainties, it is essential that we come together to navigate the intricacies of our industry.

Shubin Saha, DPM, PhD

President,
Kentucky Vegetable Growers Association

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Dr. John Strang, Ret. UK Department of Horticulture (Lexington)

Dr. Shawn Wright, UK Department of Horticulture (Jackson)

Review of KVGA Member Benefits

Many KVGA members join during the annual KY Fruit & Vegetable Conference and don't realize the other benefits associated with membership in our organization. We've highlighted several below and encourage you to find out more if you aren't taking advantage of them all.

- An **extensive network** of Kentucky growers with experience and enthusiasm for growing produce.
- Access to 20 different Anthem health care plans through the **KY Ag Health Care Trust**.
- \$2,000 Accidental Death & Dismemberment** no-cost policy with American Income Life Insurance Company (AIL). Members receive a letter and response card in the mail.
- Free subscription to *American Vegetable Grower* magazine for one year
- Early notification of **KVGA-sponsored educational events like grower-buyer meet-ups**
- Authorization to use **24-c local needs pesticide registrations**
- Exclusive member content online <http://kyvga.org/>
- Free postings on the KHC **Trading Post** electronic bulletin board (<https://kyhortcouncil.org/trading-post/>)
- Free **quarterly newsletter**. Enjoy this issue — there is a lot of great content.

If you want to make suggestions about member benefits or have ideas for future newsletter content or events, please feel free to contact any KVGA officer or Board Member.

Additional Member Benefit at No Cost!

Through a partnership with American Income Life Insurance Company, an Accidental Death and Dismemberment benefit and other no-cost offers are being provided to all members of Kentucky Vegetable Growers Association.

Learn more at MyBenefits.AILife.com

Enter access code: **SGNRM**

This is a solicitation for insurance.

An AIL representative will contact members who return the reply card by mail or respond online to arrange a convenient time to deliver their certificate of coverage and other no cost offers and review other supplemental insurance benefits that may be available.



Amanda Cross, AIL Public Relations
859-229-5369 | ascross@AILife.com

EKY Equipment Repair Program FFA Chapter Recognition

You may remember from previous newsletters that KVGA is the fiscal sponsor for the Kentucky Horticulture Research Initiative and has been managing the fund established with a generous donation from Kentucky Farm Bureau to help produce growers in Eastern Kentucky who were impacted by the floods last summer.

In partnership with the Kentucky Horticulture Council, KVGA supported inventory, transportation, and repair of more than 150 pieces of equipment — primarily tillers, weeders and chainsaws — for 80 growers in the region, most from the highly impacted counties of Breathitt, Clay, Letcher, Knott, and Perry.

Six high schools — Montgomery Co, North Laurel Co, Robertson Co, Rockcastle Co, Spencer Co, and Western Hills — participated in the repair activities and were recognized at the State FFA Convention in Lexington, KY this month. Students from each FFA chapter received a donation to cover the cost of consumables and support their ag repair programs.



Equipment pick-up in Breathitt Co with KVGA Board Member David Neville



Equipment drop-off at Rockcastle Co. Students Sarah Barron and Dwayne Clark represented their chapter at the FFA Convention (Lewis Mink, Advisor)



Tyler Hibbard and Avyanna Grigsby, students from North Laurel High School with Drew Graham and Sharon Furches from Kentucky Farm Bureau and Jeremy Hinton, Kentucky Horticulture Council. (Brandon Fawbush, Advisor)



Equipment drop-off at Spencer Co High School. Ryan Tobbe and Jackson Tobbe represented their chapter at the FFA Convention (Daniel Dunaway, Advisor)



Brinley Fields, Bri Colston, and Kyleigh Penn represented Western Hills High School (Franklin Co). (JR Zinner, Advisor)

2024 Kentucky Fruit & Vegetable Conference Save the Date



Mark your calendars! The 2024 Kentucky Fruit & Vegetable Conference will be January 2-4 at the Slone Convention Center in Bowling Green, KY. Please note that because of the New Years holiday, the Conference will be Wednesday (1/3) and Thursday (1/4), with set-up and pre-conference events on Tuesday (1/2).

2024 Kentucky Fruit & Vegetable Conference Call for Proposals

The 2024 KY Fruit & Vegetable Conference Planning Committee is accepting proposals for educational presentations at the annual conference.

Are you doing something particularly well or novel? Other growers would appreciate you sharing your expertise!

Session topics should be highly focused for produce growers in Kentucky. Topics can address production methods, business management strategies, and best practices.

The deadline to submit proposals is August 1, 2023. Presentation date and time will be confirmed with speakers by September 1, 2023. The full agenda with registration details will be published in late October.

We encourage you to consider submitting a proposal to share your knowledge, passion, and innovation with others or suggest speakers you'd like to hear! Submit proposals at <https://www.surveymonkey.com/r/24FVProposalCall>.



THANK YOU TO OUR 2023 KY FRUIT & VEGETABLE CONFERENCE SPONSORS



UPDATE FROM UK VEGETABLE EXTENSION

Two hands-on grafting workshops were held in March by the Vegetable Extension Team at UK. One was in central Kentucky at the UK Horticulture Farm and one was hosted at the Muhlenberg Co. Cooperative Extension office. These were open to the public and free to attend. Participants had the opportunity to practice grafting plants and were able to take the plants home. There were 37 participants, with great feedback.



Rachel Rudolph instructs participants on how to graft.



End result of a participant's first try at grafting.



Dr. Jonathan Larson speaking to participants at the in-person workshop at Abbott Acres Farm in Muhlenberg Co.

In March, the team also hosted a High Tunnel Basics webinar series. Topics included structure design, site selection, production basics, and pest, weed, and disease management. If you missed those live webinars, the recordings can be viewed on our YouTube channel. Here is the link to the playlist with all of the recorded presentations: <https://www.youtube.com/watch?v=albnAhAUfUQ&list=PLQEQoZRMbybIHAPvsLDmHGIN9YeJgEGj-&pp=iAQB>

The webinar series was combined with in-person trainings held on three commercial farms across the state. Commercial high tunnel growers in Franklin, Morgan, and Muhlenberg counties were kind enough to host. Thank you to those growers! These in-person trainings gave the team the opportunity to meet beginner high tunnel growers, allowed us to give hands-on demonstrations, and allowed experienced growers to provide advice and words of wisdom to new growers. We had 42 participants attend the in-person trainings. Thank you to Delia Scott for helping to organize and coordinate the High Tunnel Basics series and trainings.

— The UK Veg Extension Team

UK Extension Resources for Commercial Vegetable Production

The University of Kentucky Vegetable Extension team provides numerous resources for commercial vegetable growers regarding production and pest management. The following list details the resources provided by University of Kentucky specialists in horticulture, entomology, and plant pathology.

Commercial Growers Vegetable Alert Listserv

Commercial vegetable growers can subscribe to the Veggie Alert Listserv. This e-mail distribution list allows growers to receive the most up-to-date information and notifications from UK specialists. To subscribe to the listserv, go to this [link](#), and enter your name, county, and mail address.



Please provide the following information to sign-up for the KY Veggie Alert Listserv.

First and Last Name	<input type="text"/>
KY County	<input type="text"/>
Email Address	<input type="text"/>

e-



College of Agriculture Publications

Ag Communications - <http://www2.ca.uky.edu/agcomm/pubs.asp>

Departmental Websites (*publications, fact sheets, videos*)

Ag Economics - <http://agecon.ca.uky.edu/extension>

Biosystems Engineering (Ag Weather) - <http://weather.uky.edu/>

Center for Crop Diversification - <https://www.uky.edu/ccd/>

Entomology - <https://entomology.ca.uky.edu/entfacts/>

Horticulture - <https://www.uky.edu/hort/documents-list-commercial-fruit-nut>

Forestry - <http://forestry.ca.uky.edu/wildlife>

Plant Pathology - <http://plantpathology.ca.uky.edu/extension/publications>

Plant and Soil Sciences - <https://pss.ca.uky.edu/extension15>

Newsletters

KY Pest News - <https://kentuckypestnews.wordpress.com/>

Email Alert Listserv, Vegetables

Subscribe at https://uky.az1.qualtrics.com/jfe/form/SV_cCtU7usSqWbyZq6

Vegetable-Specific Websites

Mobile version of Vegetable Scouting Guides – <https://veggiescout.ca.uky.edu/>

Vegetable Crops Extension & Research Website - <https://veg crops.ca.uky.edu/>

Plant Pathology Vegetable Extension Publications – <https://plantpathology.ca.uky.edu/extension/publications#VegetableCrops>

Lab Services

Plant Disease Diagnostic Laboratory (free) submit samples through county Extension offices

Soil Testing (fees vary) submit through county extension offices - <https://www.rs.uky.edu/soil/redirect.php>

Food Systems - <https://fsic.ca.uky.edu/>

County Agents

UK Extension Service - <http://extension.ca.uky.edu/county>

Year-round, the UK Veg Crops Extension Team is conducting and analyzing research projects to benefit KY growers. Below is a list of trials going on this spring and summer!

SPRING AND SUMMER 2023 VEGETABLE TRIALS

High tunnel soil solarization for management of *Sclerotinia*

Evaluation of planting date, irrigation regimes,
and lettuce cultivars for management of
lettuce drop

Evaluation of nitrogen fertilization regimes and
resistant cultivars for management of
powdery mildew on summer squash

Evaluation of Early Blight on resistant tomato
cultivars

Management of Southern root-knot nematode in
high tunnels using resistant tomato cultivars



UK Veg Crops Social Media

Facebook

KY Fruit & Veg Extension - <https://www.facebook.com/KYFruitVegExtension/>

Diseases of Vegetables, Fruit, & Hemp - <https://www.facebook.com/KYPlantDisease/>

UK REC Hort - <https://www.facebook.com/people/Ukrec-Hort-Group/100057676561088/>

Ag Weather - <https://www.facebook.com/ukagweather>

UK Robinson Center - <https://www.facebook.com/ukrobinsoncenter/>

University of Kentucky Ag Programs - <https://www.facebook.com/UKANR/>

Center for Crop Diversification - <https://www.facebook.com/CenterforCropDiversification>

Instagram

KY Fruit & Veg Extension - @KY_Fruit_Veg_Extension

University of Kentucky Vegetable Crops Extension & Research - @uky_veg_crops

Twitter

KY Fruit & Veg Extension - @KYFruit_VegExtn https://twitter.com/KYFruit_VegExtn

KY Plant Disease - @KYPlantDisease <https://twitter.com/kyplantdisease?lang=en>

UKY Entomology Extension Specialist, Dr. Jonathan Larson - @bugmanjon <https://twitter.com/bugmanjon>

UK Extension - @UKExtension <https://twitter.com/ukextension?lang=en>

UK Ag Weather Center - @UKAGweather <https://twitter.com/ukagweather?lang=en>

Southern IPM Center - @southernipm <https://twitter.com/southernipm?lang=en>

YouTube

Kentucky Vegetable Crops Extension & Research – <https://www.youtube.com/channel/UC6JyU2Fdo3Yvml4y7LF0M4A>

Kentucky Fruit and Vegetable Extension – Nicole Gauthier, Plant Disease - <https://www.youtube.com/c/NicoleGauthier>

Veggie Scout Website

The IPM Scouting Guide publications for vegetable crops are valuable resources for growers. This information can also be easily accessed through the Veggie Scout Website (<https://veggiescout.ca.uky.edu/>). Be sure to bookmark this website for easy access in the future. This website provides access to the information found on the Solanaceous crops, Cucurbit crops, and High Tunnel and Greenhouse Scouting Guides. Additional scouting guides will be added in the future.

The Veggie Scout Website is available for grower, agent, and homeowner use and can be accessed from any phone, tablet, iPad, or computer. The website provides users the opportunity to first select a scouting guide (Figure 1). Next, the home page for each crop/structure (Figure 2) allows visitors to select a problem area. Finally, users select from a menu of various diseases, pests, or problems to obtain more information and view images (Figure 3).



Figure 1: Veggie Scout website home page. (Screen shot: Kim Leonberger, UK)

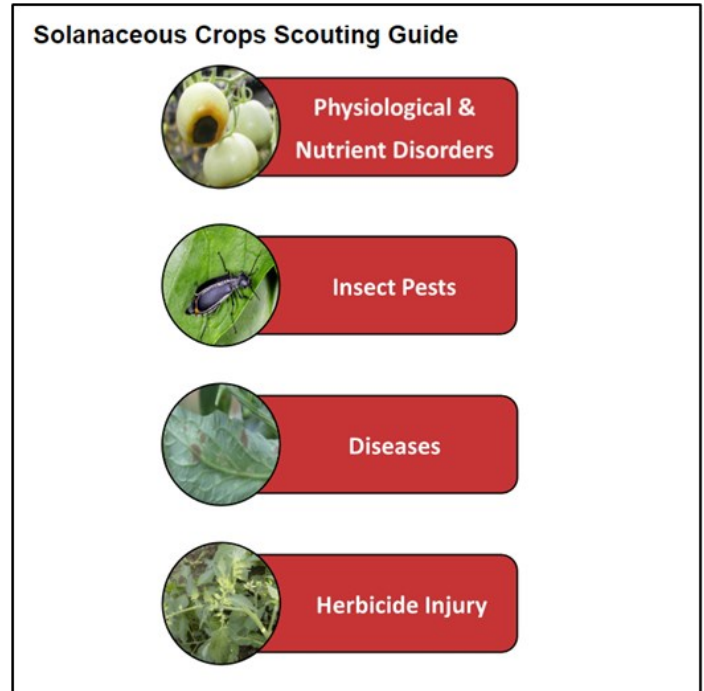


Figure 2: Visitors select a problem area within each crop/structure group. (Screen shot: Kim Leonberger, UK)

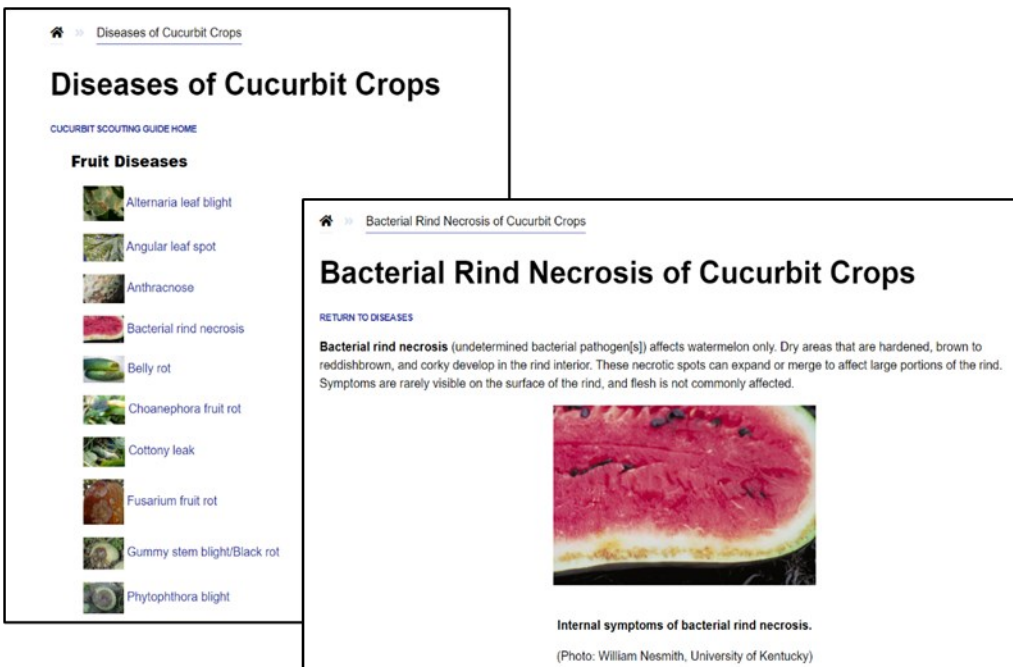


Figure 3: Users can select a specific disease or pest to obtain more information. (Screen shot: Kim Leonberger, UK)

Getting Sweet on Sweetpotato Propagation

Sweetpotatoes are an attractive crop for growers but availability of locally grown cuttings limits production in KY. Most of the cuttings that are used to produce sweetpotatoes are coming from out of state. Production of cuttings could be an additional source of income for a grower early in the season. Like any enterprise, you need to evaluate the availability of labor and time and determine if it will be profitable for you. Use this growing season to evaluate your production needs, demand for the crop in your market channels, and potential demand from other growers.

Seed sweetpotatoes are planted in beds, typically utilizing certified disease-free seed sweetpotato stock, 6 to 8 weeks prior to the planting season. Planting season is now (early June) for most of Kentucky so, cutting production would begin in mid-late April. After sufficient vines are produced, cuttings are taken 1"-2" above the soil line and sold directly or shipped to buyers. Boxes of 1,000 cuttings are typical for large growers, but smaller amounts could also be sold.

Because plants are vegetatively propagated, mutations are easily passed from one generation to the next. Therefore, it is advised that after a few seasons, growers replace their seed stock with new certified disease-free stock. To offset the cost of using completely new seed stock every 2-3 years, growers can replace a small portion of their plants each year.

One can expect to get 10 or more shoots per single sweetpotato. Growers should not cut the roots as one would when seeding out Irish potatoes. Cutting the seed roots of sweetpotatoes exposes them to soil-borne diseases, and the high sugars in them make them a favorable environment for colonization by soil bacteria and fungi.

On average, 10 to 12 bushels (55 pounds each) of sweetpotato roots are required to produce one acre's worth of cuttings — about 13,000 cuttings — depending on row spacing and plant population per acre. Growers should use medium and large sweetpotatoes when producing cuttings. Although small roots have been shown to produce more shoots per unit weight; growers might be selecting inferior sweetpotatoes if they plant only small (<3 - 4 oz) roots.

Growers must also take into consideration that sweetpotatoes harvested in September can lose 10% or more of their weight during winter storage. Further storage losses due to disease can also occur. If 550 to 660 pounds of roots are required to produce an acre's worth of slips, at least 2 extra bushels per acre should be stored to compensate for storage losses.

To discourage soil-borne diseases, seed roots can also be treated with fungicides prior to planting. Temperatures should not be below 50°F on the day of planting so that sweetpotatoes are not subjected to cold damage. Once seed sweetpotatoes are planted and covered with soil they can typically withstand much cooler temperatures.

Sweetpotatoes are laid end to end in a row approximately 2 feet wide (or wider or narrower, based on the available equipment) and as long as necessary. After seed sweetpotatoes are placed, they are covered with soil. Devrinol



One potato, Two potato

Is it one word or two — sweet potato or sweetpotato?

According to the International Potato Center, using sweetpotato (one word), helps differentiate the sweetpotato from the white or Irish potato.

The National SweetPotato Collaborators adopted and have been promoting this spelling since 1989!

Sweetpotato (*Ipomoea batatas*) is a member of the morning glory family and is a root.

White potatoes (*Solanum tuberosum*) and yams (*Dioscorea sp.*) are tubers and also grown commercially in the US.

Similarities in names, size, and shape do cause confusion!

Continued on following page

Sweetpotato production, continued

(napropamide) preemergent herbicide can be applied to the soil surface after sweet potatoes are covered to prevent weeds. Drip irrigation tubing should be placed over the sweetpotatoes to irrigate and provide fertility and then clear plastic mulch is placed over beds to increase soil temperatures, which encourages sprouting.

After a week or so, punch holes in the clear plastic mulch to ensure that there is enough oxygen in the soil so that roots will not rot. Almost anything can be used to punch holes; waterwheel setters work well as long as the spikes on the wheel do not punch deeply enough to harm the buried roots. After about three weeks, initial sprouts should appear under the plastic mulch. Be careful to frequently monitor the bed as the clear plastic will burn sprouts that emerge beneath it.

When sprouts are consistently breaking through the soil cut the plastic away from the bed to allow the plants to continue growing. After two more weeks sprouts should be 8 to 10 inches long, allowing for cutting. During this time, supplemental fertility and water can be applied through the drip irrigation if desired. An application of 5 to 10 pounds nitrogen per acre with a general purpose fertilizer should be sufficient.

After cuttings are taken they can be stored for short periods. Do not store cuttings in a refrigerator or a cooler below 50° F or they will suffer cold injury.

For more information about sweetpotato production, check out [ID-195 Sweetpotato Production for Kentucky](#).

Shawn Wright, University of Kentucky Extension Specialist

KSU Regional Water Testing Labs

Kentucky State University (KSU) has opened regional water testing labs for growers interested in having their production and post-harvest ag water sources tested. This program is voluntary and can help growers comply with requirements under the Food Safety Modernization Act Produce Safety Rule (FSMA PSR).

Labs are operating in Bowling Green (Warren Co), Hodgenville (LaRue Co), Frankfort (Franklin Co), and Whitesburg (Letcher Co). Testing for *E. coli* in surface and ground water samples is free to Kentucky growers and results are available approximately 1 week. The results can be used for your Farm Food Safety Plan, Ag Water Quality Plan, and other certification programs.

For more information about scheduling a time to drop off samples, contact: Kevin Gurtowski (kevin.gurtowski@kysu.edu) or John Thomas (john.thomas1@kysu.edu).

FARM WATER TESTING

SURFACE & GROUND WATER TESTING FOR TOTAL COLIFORMS & E. COLI PRESENCE

Kentucky Horticulture Council

USE CLEAN TOOLS

Always sanitize tools between samples. Use a telescoping water sample dipper to reach several feet out into ponds and creeks.

USE AN UNOPENED BOTTLE

Use a 100 mL Water Sampling Bottle with a sodium thiosulfate tablet. Fill the bottle to the 100 mL line.

ONE SAMPLE FOR EACH WATER SOURCE

Be sure to label each sample. Use a naming or numbering system to differentiate.

DELIVER TO A LAB

Deliver samples within 6 hours of taking them. Transport samples in a cooler.

GET RESULTS & MAKE A PLAN

Once you get the results, make a plan and take corrective measures to ensure against produce contamination

For Info Email: info@kyhortcouncil.org

Got Deer?

It's amazing the amount of damage deer and other wildlife can do in a really short period of time. Do you know your options for controlling nuisance wildlife?

Join the Kentucky Horticulture Council (KHC), Kentucky Fish & Wildlife, UK Extension, and Van Meter Family Farm for a session on Wildlife Management.

Three sessions will be offered at different locations across KY.

The basic agenda for each session follows:

6:00 pm — Fish & Wildlife Biologists will explain Nuisance Wildlife Laws in KY and procedures for taking animals causing damage.

7:00 pm — KY Horticulture Council will give program and food safety updates for produce growers.

7:15 pm — Danny VanMeter will discuss production considerations for current and beginning strawberry growers

** Listed times are local time zone*



Monday, June 26	Tuesday, June 27	Wednesday, June 28
Christian Co Extension Office 2850 Pembroke Rd. Hopkinsville, KY	Laurel Co Extension Office 200 County Extension Rd London, KY	Breckinridge Co Extension Office 1377 S Hwy 261 Hardinsburg, KY

Please register online by using the Eventbrite link and selecting the ticket for the date/location you plan to attend. The basic program is the same at each site. Times listed are in the local time zone. A Zoom option may be available.

<https://Summer23ProductionWorkshop.eventbrite.com>

2023 Agronomy Pest Management Field Day—June 29

Are you having weed issues in the field? You might want to consider attending the 2023 Pest Management Field Day. The event is scheduled for 8:30 a.m. to 12:30 p.m., June 29, 2023, at the University of Kentucky Research and Education Center farm in Princeton. Sign-in begins at 8 a.m. CDT.

The focus will be on agronomic crop topics, including Palmer amaranth and water-hemp control; weed control in early planted soybean; weed control in corn; Italian ryegrass research updates; presentations on herbicide resistant johnsongrass and weed management utilizing cover crops; corn disease research and entomology updates. Presentations will be conducted by Travis Legleiter, JD Green, Erin Haramoto, Kiersten Wise and Raul Villanueva, UK extension specialists. Some of these topics may be issues you face. Specifically, if you have having trouble controlling water-hemp and Palmer amaranth, a walking plot tour of management research being conducted at the UK Research and Education Center farm will also be highlighted.

Lunch will be provided. To assist with meal planning, organizers are encouraging participants to preregister at https://uky.az1.qualtrics.com/jfe/form/SV_4PjveAug6mK9rXU by June 22.

For additional information on the 2023 Pest Management Field Day, contact Jason Travis, extension associate for the University of Kentucky, at jason.travis@uky.edu or (859) 562-2569. The University of Kentucky Research and Education Center farm is located at 1205 Hopkinsville St., Princeton, Ky. 42445.

Adjuvants 101 is a reprint from the May 2023 Ag Matters Newsletter. Specialists have noticed a recent uptick in questions about these products.

Adjuvants 101

Daniel Bergman, Nutrien Ag Solutions, Apr. 2023

If you want to maximize your crop yield every year, you need to understand adjuvants. Defined broadly, **an adjuvant is a product that enhances the ability of another product to work more effectively.** Adjuvants don't contain pesticidal active ingredients; instead, they aid active ingredients in overcoming environmental and equipment-based fail factors to maximize application performance.

Of course, in reality adjuvants are much more complex than that. There are many different types, and it's important to know which types to use in which situations. Using the wrong kind of adjuvant in certain conditions can actually cause more harm than good.

That's why the best advice on adjuvants that I can share with growers is this: **Read the label.** If an adjuvant is recommended for use with a specific product, the label on that product will say so. It will also provide additional important information, such as adjustments to make if you're applying on a very hot day, have the wrong spray-tank pH or if you're dealing with high winds. Unfortunately, reading the label can sometimes cause additional confusion, especially when you're mixing multiple products into a single tank. That's when a deeper understanding of adjuvants is extremely helpful. With that in mind, let's talk about what the types of adjuvants are, how they work, and what you need to know.

Types of adjuvants There are five main categories of adjuvants. They are:

- **NIS (non-ionic surfactant):** The most commonly used adjuvant, NISs are water-soluble and aid with coverage on the plant as well as with uptake. They're considered the workhorse of the industry because of their leaf-wetting ability and common use recommendations by many pesticide labels.
- **COC (crop oil concentrate):** Most-ly used with herbicides, COCs drive

active ingredients into plants by helping with uptake and penetration.

- **MSO (methylated seed oil):** Like COCs, MSOs are oils, but they act more aggressively than COCs. In other words, they accelerate the plant's uptake of active ingredients. They're also usually used with herbicides.
- **Organosilicones:** These are silicon-based adjuvant systems that provide extreme wetting and aid in uptake and penetration. You have to be careful with 100% organosilicones products when applying to crops with upright leaves such as onions, because they can run the spray solution off the leaf of the plant and potentially running down into the neck of the onion, causing an excessive accumulation of spray solution. It's usually better to use silicon blends, which combine organosilicones with an oil or NIS.
- **Spreader-stickers:** Most adjuvants in this category are more "stickers" than they are "spreaders," so the term is a bit of a misnomer. These are non-ionic adjuvants that impart adhesiveness to the pesticide solution, helping pesticides or fungicides to stay on leaves longer and resist being washed off by rain or irrigation.

How adjuvants work Adjuvants work in a few different ways, all of which are designed to help other pesticidal products work more effectively. Adjuvants can:

- **Modify droplet size.** Put simply, adjuvants can make the droplets coming out of your sprayer larger, mid-ranged in size, or smaller. On a windy day, having larger droplets (500+ microns) means less drift, but larger droplets are more susceptible to bouncing or running off the leaf surface. Smaller droplets (< 150 microns), on the other hand, are more susceptible to drift. Most of the time, it's best to strive for a mid-range droplet (150-500 microns) for optimum drift management, leaf retention and coverage.

- **Increase droplet retention.**

Droplets that run off the surface of a leaves aren't very effective at delivering pesticidal active ingredients to the plant surface. Adjuvants that retain spray droplets on the leaf surface are best.

- **Improve leaf wetting.** Spray solutions tend to poorly wet the leaf surface and do little good when applied to crops that have very waxy leaf surfaces like onions and cabbage. Adjuvants help lower droplets' surface tension so the pesticidal products cover the leaf more efficiently and gets through the waxy leaf cuticle and into the plant.
- **Promote better uptake.** Adjuvants can increase the rate of pesticide penetration through the plant cuticle and into the leaf surface.

As you can see, there's a lot to know about adjuvants. And while we can only touch on the basics in this article, having at least some level of knowledge comes in handy, because you can better understand what your product's label is telling you. If you're using a pesticide or plant protectant, it'll tell you to use adjuvants to improve penetration and performance. If you have tough weed conditions, labels may ask you to go with an oil-based adjuvant (a COC or MSO). If conditions exist that may cause a higher concern of phytotoxicity, a NIS recommendation may be the right answer.

Adjuvants and tank mixes It's entirely possible that a single tank mix will involve multiple pesticide products with each of their own adjuvant recommendation. While that isn't necessarily an issue, it's on you to determine whether your particular mix will result in adjuvant conflicts. The first place to start is to go through your full list of label adjuvant instructions and sort them from most to least restrictive. If you give first consideration to your most restrictive instructions and go step by step, you'll be able to avoid most conflicts.

Sometimes you have instructions on two products that are in direct conflict

with each other. Here's an example involving an herbicide, Chateau® and an insecticide Movento® that you may want to use in very close proximity in onion (we know the this combo should not be tankmixed). Chateau's label tells you not to use an adjuvant, because that will result in the onion taking up too much of it too quickly, resulting in excessive phytotoxicity (e.g. leaf necrosis). Movento, however, says it requires an adjuvant that aids in uptake to achieve maximum performance. Which do you spray first?

The solution: Apply Chateau as directed, wait three to five days, then come back with Movento combined with an adjuvant that improves penetration. Be sure to follow the label instructions.

Check your conditions

Temperature. You can have an encyclopedic knowledge of products and adjuvants and still run into issues. That's because pesticide products and adjuvants aren't always the only two variables at play. Heat, for example, is an important factor to consider. If you're spraying on a hot day, you'll

want to avoid high rates of oil-based adjuvants. Oil-based products tend to have greater wax solubility at high temperature, which can too aggressively dissolve the waxy surface of the leaf. Obviously, that's bad. Instead, go with an NIS. It's water-based and more forgiving on a hot day. (This is one of the reasons NISs are considered an industry workhorse; they're the best option in a wide variety of situations.)

Water hardness. Another factor that many growers may overlook is the quality of the water they use in their tank mix. Many municipalities have hard water, which means it has high levels of calcium, magnesium or iron dissolved in it. These hard water metals bind with pesticide actives and built-in emulsifiers, thus reducing application efficacy. Don't underestimate the importance of checking the hardness of your water. It's an issue that can directly impact your pesticide use efficiency and yield if it isn't addressed properly.

Water pH. While not as important or common as water hardness, the

pH level of your water is also worth checking. As with hardness, this is easily checked using readily available test strips. Ideally you want your spray-tank water to be neutral or slightly acidic. If anything, your water supply is likely to have a higher pH than is ideal, but an acidifier will easily help with that needed adjustment.

Excessive acidification. If you're using metal-based fungicides (such as those that include copper or tin), don't use an adjuvant that reduces pH and thus increases the acidity of your mix. If you acidify your tank mix too much, you can end up with too much copper or tin available. This in turn can cause plant phytotoxicity.

Read the Label! I said these three little words a few times already, but it's worth repeating: read the label. The vast majority of the time, the labels on the products used in your tank mix will tell you everything you need to know about which adjuvants to use and when to use them. Hopefully you now have a little bit more understanding of adjuvants that you can apply this season and into the future.

MarketReady Buyer Tours

The Buyer Tour allows growers and producers to get a behind-the-scenes look at what happens at these various marketplaces. Growers and producers can ask questions, talk with buyers, and get first-hand experience with what it is like to sell to a restaurant, grocery/retail store, or farm-to-school buyer. During these tours, growers visit 3-4 buyers to see what happens behind the back doors! The buyers are to-be-determined; however, they will include a restaurant, a grocery/retail market, and a farm-to-school buyer.

These events are free-of-charge but require an RSVP. Make sure to secure your spot today! RSVP via the webform links below.



Registration: <https://marketready.uky.edu/buyertourlex2023>

RSVP by Monday, July 31



Registration: <https://marketready.uky.edu/events/buyertourlou2023>

RSVP by Monday, August 7

Upcoming Industry Events

6/16 — First Farm Workshop (RCARS, Jackson)

6/20 — Integrating Sustainability in a Solar Farmhouse and Organic Market Garden (OAK Field Day, Frankfort)

6/26 — Wildlife Control for Specialty Crop Growers (Hopkinsville)

6/27 — Wildlife Control for Specialty Crop Growers (London)

6/28 — Wildlife Control for Specialty Crop Growers (Hardinsburg)

7/6 — Keeping Our Balance: Diversified Farming with Steep Hills and Off-Farm Jobs Field Day (OAK Field Day, Mt. Vernon)

8/3 — Buyer Tour (Lexington)

8/6-8/12 — National Farmers Market Week

8/10 — Buyer Tour (Louisville)

8/17-8/27 — Kentucky State Fair (Louisville)

9/19 — CSA Production, Packing, and Planning Field Day (Independence)

October — National Farm to School Month

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

Save-the-Date

2024 Kentucky Fruit & Vegetable Conference

Jan. 2 — Pre-Conference Events

Jan. 3-4 — Educational Sessions & Trade Show

