



October 2023

Brett Wolff, Editor
Christy Cassady, Editor/Designer

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Coming up

Nov. 4 - Kentucky Maple School, 9 a.m.-4 p.m. ET at the Berea Forestry Outreach Center, 2047 Big Hill Rd., Berea, KY 40403. For details and to register, visit <https://ky-maplesyrup.ca.uky.edu/ky-maple-school>.

Nov. 6 - Quarterly Cut Flower Short Course: Budgeting for Profit. Speaker: Lyndsay Biehl, Wildroot Flower Company. 6:30 p.m. ET. For more information, see **Page 4**.

Nov. 9 - Northern Kentucky Grower Buyer Meetup, Boone County Extension Office, 9:30 a.m.-noon ET. For details, see **Page 6**.

Dec. 5 - FSMA PSA Grower Training, virtual. You must register by **Nov. 3**. For details and to register, [click here](#).

2023 Kentucky Vegetable & Fruit Input Costs: Changes and Trends

By Tim Woods and Emily Spencer, UK Department of Agricultural Economics, and Matt Ernst, Writer, UK Center for Crop Diversification

Contact: Tim Woods (tim.woods@uky.edu)

Summary

Prices for many crop inputs have increased steadily since 2016. This report updates 2023 Kentucky price trends for key vegetable and fruit crop inputs: fuel and fertilizer, labor, plant protection products and seed. These representative data may be used to help producers identify input costs and trends and update production budget estimates for 2024.

Nationally, there has been a sharp increase in many farm inputs connected with the vegetable sector, especially over the past 3 years. Table 1 (Page 2) details average price increases for several key inputs, including the vegetable sector overall.

Key variable input costs such as those related to fertilizers and fuel were down in 2023 compared to the previous year, but still remained relatively high. Wage rates have moved up sharply since 2016 and appear to be up again based on AEW figures, especially in California.

Kentucky farmers have similarly seen significant increases in some inputs, while others have stayed relatively steady or even dropped since last year. In the summer and fall of 2023, we completed a regional summary of input prices for Kentucky producers for both conventional and organic inputs on vegetable farms. A more detailed summary of specific inputs can be found [here](#).

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Disabilities accommodated with prior notification.

Table 1. Index of Selected Prices Paid by U.S. Farmers Related to Vegetable Production

Input	Annual Average							
	2016	2017	2018	2019	2020	2021	2022	2023
	Index, 2011 = 100							
Fertilizer, nitrogen	71.6	66.5	66.5	71.4	69.9	90.9	151.6	- - ¹
Fertilizer, potash/phosphate	70.5	64.4	62.9	63	68.1	85.1	110.1	- - ²
Fuels, diesel	51.8	57.6	67.4	71.5	52.5	73.3	112.9	- ³
Fuels, gasoline	59	64.5	70.9	75.1	59.6	78.5	104.4	-
Wage rates	115.9	119.1	126.3	133.2	138.2	146.1	156.9	++ ⁴
Vegetable sector ⁵	106.1	107.2	109.8	113.1	113.1	121.3	138.8	+

Source (2016-2019): USDA, National Agricultural Statistics Service except first quarter 2022 projections by USDA, Economic Research Service
 Source (2020-2022): Vegetables and Pulses Outlook: April 2023, VGS-370, April 27, 2023, USDA, Economic Research Service
 Source (2023): decreases from 2022 levels based on sources in the footnotes below

¹ <https://www.dtnpf.com/agriculture/web/ag/crops/article/2023/08/09/fertilizers-see-large-price-move>

² <https://www.dtnpf.com/agriculture/web/ag/crops/article/2023/08/09/fertilizers-see-large-price-move>

³ <https://www.eia.gov/petroleum/gasdiesel/>

⁴ <https://www.fb.org/market-intel/examining-the-2023-aewr>

⁵ Input items common to vegetable production weighted by 2006 vegetable farm expenses derived from the 2006 Agricultural Resource Management Survey.

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For John Bell at Elmwood Stock Farm, a certified organic farm in Georgetown, KY, three inputs have been significantly over budget in the fall of 2023: cardboard and plastics, seed, and interest expense. Bell further noted that, “drip irrigation supplies are around 20% more than what we had expected.” This article details some of the farm inputs that are affecting Kentucky growers in 2023 and will likely continue to affect Kentucky growers into 2024.

Plant protection products

Plant protection expenses vary across different crops and by season. An input price survey was conducted with regional suppliers, agricultural organizations, and leading farmers in summer 2023, confirming higher prices for many inputs for Kentucky specialty crop growers. However, prices reported by major suppliers for Kentucky growers in the 2022 and 2023 seasons showed relative stability across synthetic products. Price ranges for selected major products are reported [here](#).

Inputs for certified organic production may be more difficult to obtain locally, depending on the crop and the region. Generally speaking, product prices for OMRI-approved materials showed less variability in 2022 and 2023 than in previous

years. Availability and shipping costs are often more significant factors for obtaining plant protection products for certified organic production.

For a list of plant protection products and their respective costs, see the more detailed 2023 Kentucky Vegetable & Fruit Input Costs: Changes & Trends publication on the [CCD website](#).

Labor

Kentucky H2A wages were \$11.63/hour in 2019, climbing 23% to \$14.26 in 2023. Labor comprises 30-40% for typical produce enterprises, so this is a significant figure. Labor is also a significant portion of post-harvest costs related to packing, grading, and shipping. These costs have increased throughout the supply chain.

Seed

Seed costs, as reported by USDA for vegetable farms on a national basis, increased slightly from 2020 to 2022. The USDA survey reported no year-on-year increase in seed costs for the first quarter of 2023, as compared to 2022.

Kentucky vegetable producers reported only modest, if any, increases in seed prices for 2023. The vegetable seed cost category is similar to the

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2024 KENTUCKY FRUIT & VEGETABLE CONFERENCE

Jan. 3rd-4th, 2024
Pre-conference events Jan. 2nd

**Sloan Convention Center
Bowling Green, Kentucky**

[CLICK HERE FOR REGISTRATION](#)



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plant protection category: some increases to be expected over time, but large percentage increases continue to be unusual.

Plant material for perennial crops (asparagus, berries, tree fruit, nuts) has increased more significantly since 2020. This is tied to robust demand and producers passing along higher costs (e.g., labor and fertilizer) to buyers. In some cases, higher freight costs have an outsized impact on the cost of acquiring plant stock for perennial crops.

2024 Outlook

Nationally, prices for many crop inputs have increased since 2020 and we see the same for Kentucky growers. International market trends, trade and geopolitics have an outsized impact on the prices that Kentucky farmers pay for fuel. Producers with the storage and/or financial capacity to pre-purchase fuels may be able to guard against some of the risks of price increases. Price uncertainty will likely remain in 2024.

Prices for nitrogen fertilizers were still very high in 2023. Going into fall 2023, “fundamental factors

suggest an easing in nitrogen fertilizer prices,” according to the University of Illinois (Schnitkey)⁶. However, as the Illinois report acknowledges, this is an easing from very high nitrogen prices. Price relief for synthetic nitrogen sources in 2024 is unlikely to reach back to price levels seen in 2021, let alone 2020.

Global factors in the phosphate industry supply chain portend that 2024 phosphate fertilizer prices could remain at 2023 levels (Jasinski)⁷. Potash prices are also likely to remain similar to 2023 prices because of similar supply and demand.

In short: Input prices rose sharply across the board for specialty crop producers through the pandemic both for Kentucky and nationally. Some costs have moderated in 2023, even come down sharply relative to peak costs in 2022. Labor costs remain a challenge and the era of higher fuel, fertilizer, chemical, and seed prices is likely to persist for Kentucky fruit and vegetable growers in 2024, though there is evidence to suggest that the prices will stabilize at their current high price point, rather than see more sharp increases.

⁶ Schnitkey, G., N. Paulson, C. Zulauf, and J. Baltz. “Nitrogen Fertilizer Prices Stabilize at High Levels in Spring 2023.” *farmdoc daily* (13): 108, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, June 13, 2023.

⁷ Jasinski, Stephen. “Phosphate Rock” and “Potash.” In *Mineral Commodity Summaries 2023*, U.S. Department of the Interior U.S. Geological Survey. <https://pubs.usgs.gov/periodicals/mcs2023/mcs2023.pdf>

Kentucky Greenhouse Census responses still being accepted

By Arundathi Sharma and Casey Byrd, UK Extension Associates, Controlled-Environment Agriculture

The Controlled-Environment Agriculture (CEA) group in Horticulture Extension is currently working to characterize the CEA industry in Kentucky by identifying greenhouses and greenhouse growers in each county. We hope this will help all of us in extension (from specialists to agents) better address our constituents' needs.

All horticulture/ANR agents should have received an email with a rough-draft list of greenhouse enterprises in their county. We hope the list is valuable to you and helps you reach growers

that you may not have worked with before. Your feedback is also vital in ensuring that the census is representative of what happens on the ground in your community, which will help us provide more relevant support to you and your clients. We are still looking for responses from agents that have not yet sent us their feedback.

Please reach out to CEA team members Arundathi Sharma and Casey Byrd (arundathi.sharma@uky.edu, casey.byrd@uky.edu) if you have any questions or concerns regarding the census, or any ideas/requests for greenhouse workshops in your county. We look forward to your responses!

New CCD resource addresses basics of hydroponic water management

By Arundathi Sharma, UK Extension Associate, Controlled-Environment Agriculture

A new publication, [Irrigation in Hydroponic Systems: An Illustrated Overview](#), is now available on the Center for Crop Diversification website. It

delves into the design concepts for water management and circulation in hydroponic systems, and it includes illustrated guides explaining the principles behind three different methods of delivering water to soilless crops. The article is aimed at

both new / interested commercial growers and non-commercial hobbyist growers. We hope the illustrations help readers understand how these systems work so that they can better maintain an existing off-the-shelf hydroponics system or build their own from simple hardware store products.

Additional resources from other institutions are also available on the Greenhouse Horticulture website at <https://greenhousehort.ca.uky.edu/grower-resources>.

Please reach out to Controlled-Environment Horticulture with any questions or feedback about these and other resources and programs related to soilless crop cultivation or commercial greenhouse horticulture. We can be reached at arundathi.sharma@uky.edu or casey.byrd@uky.edu.



Quarterly Cut Flower Short Course

Register at bit.ly/floralbudget

Budgeting for Profit
LYNDSAY BIEHL
of Wildroot Flower Co.

Learn how to create a topline revenue budget and a budget for expenses.

November 6, 2023
6:30PM ET / 5:30PM CT

Martin-Gatton College of Agriculture, Food and Environment University of Kentucky

Kentucky Horticulture Council

CENTER FOR CROP DIVERSIFICATION

Are you growing commercial horticulture crops in Kentucky? *We want you to participate in our study!*

By Arundathi Sharma, UK Extension Associate,
Controlled-Environment Agriculture

What will Grower Participants receive?

- Financial compensation for their time
- A personalized, in-depth analysis of their entire business operation at the end of the study year, including a customized plan for improving profitability
- Priority to participate in follow-up studies, which are projected to include system technology-in-kind upgrades as part of the compensation package

What is expected of Grower Participants?

Beyond operating their business as normal, grower participants are expected to maintain:

- Consistent participation in weekly surveys throughout the growing season
- Willingness to share information about their operations with extension program coordinators (all data will be anonymized, and the survey will be shared and reviewed with participants)
- Regular contact with extension support staff through biweekly check-ins

Benefits for Coordinating County Agents

- Co-authorship on extension publication at the conclusion of the study
- Gain experience and professional development in controlled-environment agriculture methods
- Professional networking with UK main campus resources and professional staff, as well as technical product and service providers in the greater greenhouse industry

What is expected of Agent Coordinators?

Agents who actively help coordinate this study are expected to maintain:

- Regular contact with growers in their area/county who are study participants throughout the growing season 2024
- Oversight of weekly data collection status from participating growers
- Regular contact with campus extension

More information is available at greenhousehort.ca.uky.edu.

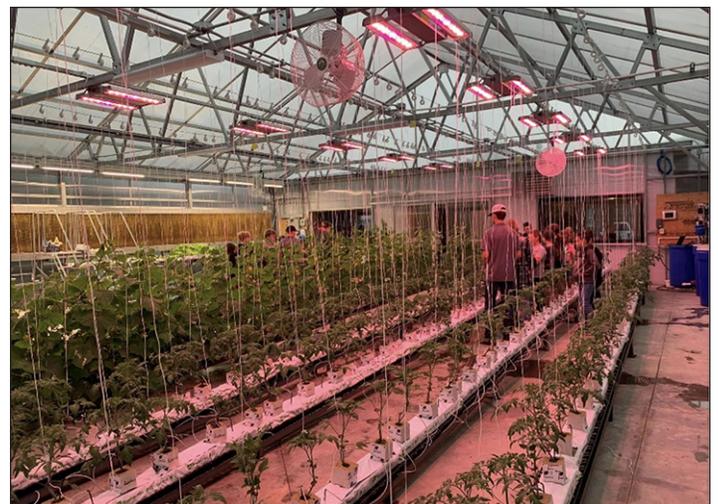
Sign up as a participant at <https://forms.gle/y4Mukjz8ZLB4fUUG7>, or email arundathi.sharma@uky.edu.

September Greenhouse Educators Training recording available online

By Arundathi Sharma, UK Extension Associate,
Controlled-Environment Agriculture

The Greenhouse Educators Training held on September 25th is now up and live on both the UK Greenhouse Horticulture website (<https://greenhousehort.ca.uky.edu/videos>), as well as on the UK Horticulture Youtube channel (<https://www.youtube.com/watch?v=IdsZyDzLYt4>).

We had a great session featuring Whitley County High School Agriculture Instructor, Brian Prewitt, who shared his experience teaching horticulture and entrepreneurship to his students through their new hydroponic greenhouse facility and storefront. They grow a variety of crops and sell to local businesses – proceeds fund their FFA programming and trips, and they have immense support in the community.



From the Whitley County FFA/Greenhouse Facebook page

If you have feedback about these sessions or ideas for trainings that you would like to see in the future, reach out to arundathi.sharma@uky.edu or casey.byrd@uky.edu.

Registration now open for KCARD workshops

From the KY Center for Agriculture and Rural Development website

The Kentucky Center for Agriculture and Rural Development (KCARD) is hosting Growing Your Farm and Food Business Workshops in November and December. Topics include essentials of business planning, qualities of a good grant proposal, and key grant programs across the state. Representatives from USDA, the Kentucky Department of Agriculture, Kentucky State University, and the Kentucky Office of Agricultural Policy will discuss their programs.

Registration for the in-person workshops is \$20. Lunch will be provided. Register using the links below:

Caldwell County on Nov. 9th at 9:30 a.m. - 4 p.m. at the Caldwell County Extension Office: <https://tinyurl.com/caldwell-gyffb>.

Clay County on Nov. 14th at 9:30 a.m. - 4 p.m. at the Clay County Cooperative Extension EXCEL Center: <https://tinyurl.com/clayco-gyffb>.

Virtual on Dec. 5th and 7th at 5:30 p.m. - 8 p.m. CT/6:30 p.m. - 9 p.m. ET on both nights: <https://tinyurl.com/virtualgyffb>.

NKY GROWER BUYER MEETUP

KY Farmers - Are you interested in expanding into new market channels? **Retail Buyers and Chefs** - Are you interested in purchasing locally-produced food for your business or restaurant? Join us for the NKY Grower-Buyer MeetUp!

Boone Co. Extension Office

6028 Camp Ernst Rd, Burlington, KY

9:30 am - noon EST

NOVEMBER 9, 2023

Pre-Registration Required

Register at <https://tinyurl.com/NKYmeetup2023>

You will have a chance to meet one-on-one in a "speed date" format to exchange contact information and match up products and needs. Face-to-face meetings with experts in food safety, organic production, and marketing will also be available.



Scan the QR code to register!



Organic Association of Kentucky

ANNUAL FARMING CONFERENCE



Advancing Organics In Kentucky:

Adopting Practices, Increasing Resilience and Strengthening Systems

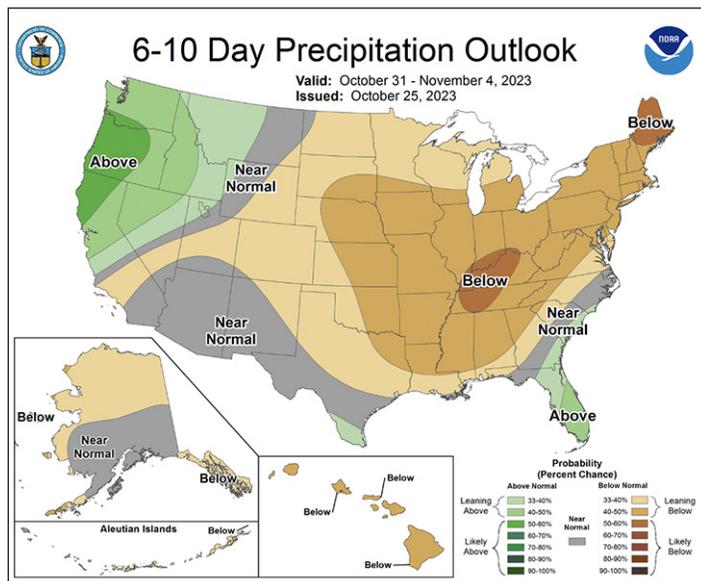
JANUARY 25-27, 2024 | Frankfort, KY

Expect a cooler and drier than average start to November

By Joshua Knight, Sr. Extension Associate, Horticulture

In the first days of November, almost the entirety of the eastern U.S. is likely to experience cooler than average temperatures. This includes the Commonwealth of Kentucky as well as the greater Ohio River Valley region. However, after those first days, NOAA's Climate Prediction Center expects near normal temperatures before likely giving way to warmer than average conditions by mid-November.

Drier than average conditions are expected to dominate for the first days of November. The national drought monitor shows abnormally dry conditions for most of Kentucky, with moderate drought for the central region and throughout



southern Indiana. This drought is expected to end sometime before the end of January 2024, though in the nearer term the forecast calls for near normal rates of precipitation as we move further into November.

KY Christmas tree growers gather in Mercer Co. for day of education and networking

By Tara Watkins, UK Extension Associate for Commercial Ornamentals

Christmas tree growers from Paducah to Verona to Somerset gathered in central Kentucky at a Mercer County farm for the Kentucky Christmas Tree Growers Association fall meeting just over two weeks ago. With the rapidly growing number of Christmas tree growers in Kentucky, the statewide association is an important networking and educational hub that advocates, educates, and provides valuable resources to its member growers. Nearly 60 individuals attended the meeting with nearly 30 farms represented. Participants were able to learn from a variety of speakers on topics including tree irrigation setup, marketing, tree shearing, and more.



Photo from the KY Christmas Tree Growers Association Facebook page. David Yount, co-host at Sherwood Acres in Mercer County, talks to participants about building and setting up an irrigation system at KCTGA Fall Meeting.

If you are interested in joining the Kentucky Christmas Tree Growers Association, please visit www.kychristmastreefarms.com and fill out the information in the Contact tab. If you are grow-

ing or interested in growing Christmas trees and would like to connect with extension personnel expertise, please reach out to Tara Watkins at tara.watkins@uky.edu.

Be on the lookout:

Invasive species spotted lanternfly discovered in Kentucky

Adapted by Tara Watkins, UK Extension Associate for Commercial Ornamentals

Many, if not most, of you have heard of it – the spotted lanternfly (SLF). This invasive species has gained the attention of many Kentuckians in the grape, apple, Christmas tree, hops, and nursery industries and more in recent years. It is present in several surrounding states, and now it is in Kentucky. It was discovered and confirmed in Gallatin County, and it could have severe repercussions for the state's economy and quality of life if not controlled. The adult is distinctive looking, with front wings that have a mixture of stripes and spots while the back wings have a bright red color that contrasts with white, black, and khaki coloration on the rest of the body. Correctly identifying these insects is important because they resemble numerous important native species. Tree of heaven is their primary host plant, but they are known to feed on more than 70 different species of plants.

As these insects feed, they decrease the plant's health and can ultimately cause plant death. Their high numbers on host plants and the recruitment of black sooty mold and stinging insects by honeydew production can decrease the ornamental value of many common nursery products. Restrictions on the movement of goods like lumber, the need for quarantines affecting nurseries, and even the requirement of permits to travel or move nursery goods out of an area can have financial impacts for Kentucky nurseries and landscapers.

If you think you have seen SLF, please capture the specimen if possible. At the very least, please take clear photos as evidence and for verification of what you have seen. If SLF is discovered and the infestation is relatively contained, efforts will



Photo by Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org

Adult spotted lanternflies are distinctive looking insects with a pink-khaki coloration and spots and stripes on their wings.

be made to locally eradicate the insects to prevent their continued local spread and establishment. The sooner SLF is reported, the better and higher the probability of effectively controlling it. If you do have evidence that needs to be evaluated, please reach out to reportapest@uky.edu and include the county.

For the University of Kentucky press release on the confirmation of SLF in the state, please use this link: <https://news.ca.uky.edu/article/critical-invasive-species-now-spotted-kentucky>.

For a full article describing potential hosts, symptoms, life cycle, descriptions of life stages, and photos, please use this link: <https://entomology.ca.uky.edu/files/ef465.pdf>.

To visit the USDA APHIS SLF page to learn more about SLF and how to report it, please use this link: <https://www.aphis.usda.gov/aphis/resources/pests-diseases/hungry-pests/the-threat/spotted-lanternfly/spotted-lanternfly>.

KSU hosting 25th Small Farmers Conference

From the KSU Land Grant Program
Facebook page

Join us in person for Kentucky State University's 25th Annual Small, Limited-Resource, Minority Farmers Conference. This year's theme is "Planting Ideas, Harvesting Success."

The in-person conference will provide you an opportunity to take advantage of the following:

- Educational workshops
- Tours
- Networking opportunities
- Keynote speakers
- Recognition of the Kentucky Small, Limited-Resource Farmer of the Year and Women in Agriculture Excellence Awardee
- "Third Thursday Thing"

Registration for this conference is required and costs \$50. That fee covers your attendance at all three days of the conference as well as four meals. For more information and to register, [click here](#)



**Small, Limited-Resource,
Minority Farmers Conference**
November 16-18, 2023
**Planting Ideas,
Harvesting Success**

Register now: <https://bit.ly/2023sfc>

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KENTUCKY STATE UNIVERSITY
Cooperative Extension Program



**Save
-the-
Date**

**2024 KNLA Green Industry
Winter Conference**

January 31 - February 1, 2024

Marriott Louisville East

Thanks for reading!

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