WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

Volume 32, Issue 3 **March 8, 2024**

WCU Subscription Options for 2024: Mail, Email or Text

Welcome to the first regular issue of WCU for the 2024 season. The next WCU for this year will be issued on April 5. WCU will then be posted on the web and sent to mail subscribers by 4:30 p.m. each Friday until September 27. The cost of mail subscription is $40. You can subscribe by returning the form at the back of this issue.

The WCU is also available for free online as a printable PDF or blog format at: https://sites.udel.edu/weeklycropupdate/.

For those who access the newsletter via the internet we send a weekly email reminder which will let you know when the WCU has been posted online, provide a link directly to the current issue, and give you a taste of the headlines. If you are don't currently receive the email reminder and would like to be added to the list, click the Subscribe link at the top of the WCU blog page. If you experience problems with the online WCU please contact us at wcueditors@udel.edu or (302)-856-7303.

We will also send out a text message each week when a new issue is posted. The message will be brief, and the text message distribution list will not be used for other announcements except those of an urgent nature (i.e. pest or disease alerts). If you would like to receive the text reminder please send your name, number and cell phone carrier to us at the above email address or send a text message to 302-233-4719.

Emmalea Ernest and Drew Harris

Vegetable Crops

Standout Vining Snow and Snap Pea Varieties

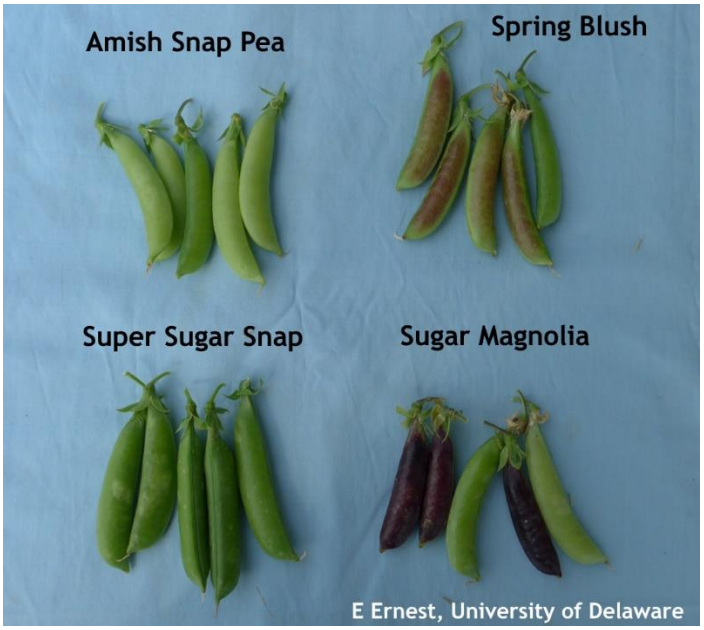
Emmalea Ernest, Extension Fruit & Vegetable Specialist; emmalea@udel.edu

In 2023 I tested four vining snap pea varieties and three vining snow peas. All of the varieties require trellising. My trial was planted on March 30 and harvest began on May 31, 62 days after planting (DAP). The final harvest was on June 20, 82 DAP.

Peas growing on the trellis early and later in the season

Among the snap pea varieties, Super Sugar Snap produced the highest yields and the largest pods (Table 1). Yields for this variety were greater than 0.5 lb/10 ft over six harvests, with peak harvest at 74 DAP (1556 Base 40° GDD).

Among the snow pea varieties, Frieda Worlds and Green Beauty produced the highest yields (Table 2). Green Beauty produced the largest pods. Green Beauty had a more concentrated harvest, with three days over .05 lbs/10 ft. Frieda Worlds had four harvests over .05 lbs/10 ft. Peak harvest for Green Beauty was earlier than for Frieda Worlds at 64 vs 74 DAP (1390 vs 1556 Base 40° GDD).



Pods from snap pea varieties in the 2023 trial

Pods from snow pea varieties in the 2023 trial

Table 1. Yield by Harvest and Total Yield for Snap Pea Varieties in Pounds per 10 ft of Row

Date	31-May	2-Jun	6-Jun	9-Jun	12-Jun	14-Jun	16-Jun	20-Jun	
DAP	62	64	68	71	74	76	78	82	
Base 40° GDD	1238	1295	1390	1460	1556	1616	1674	1798	Total Yield
Amish Snap Pea	0.29	0.41	0.18	0.88	0.57	0.26	0.32	0.31	3.2
Spring Blush		0.17	0.32	1.48	1.62	0.75	0.64	0.59	5.6
Super Sugar Snap	0.33	0.23	0.55	1.63	2.35	0.91	0.81	0.76	7.5
Sugar Magnolia			0.70	1.27	1.17	0.79	1.03	0.36	5.3

Table 2. Yield by Harvest and Total Yield for Snow Pea Varieties in Pounds per 10 ft of Row

Date	31-May	2-Jun	6-Jun	12-Jun	14-Jun	16-Jun	20-Jun	
DAP	62	64	68	74	76	78	82	
Base 40° GDD	1238	1295	1390	1556	1616	1674	1798	Total Yield
Frieda Worlds	0.21	0.22	0.75	1.43	0.78	0.41	0.66	4.5
Golden Sweet	0.14	0.24	0.71	0.07	0.63	0.23	0.24	2.2
Green Beauty	0.16	0.34	1.24	1.13	0.83	0.35		4.1

Agronomic

Agronomic Crops Insect Scouting

David Owens, Extension Entomologist, owensd@udel.edu

Alfalfa

Now is a good time to start scouting alfalfa fields for alfalfa weevil. Just a reminder that alfalfa weevil thresholds are based on plant height and do not pertain to mixed stands of less than half alfalfa.

Corn

Next week, seedcorn maggots will be active. Fields with any organic matter, heavy residue, and poultry manure that has been incorporated will be the most attractive to flies.

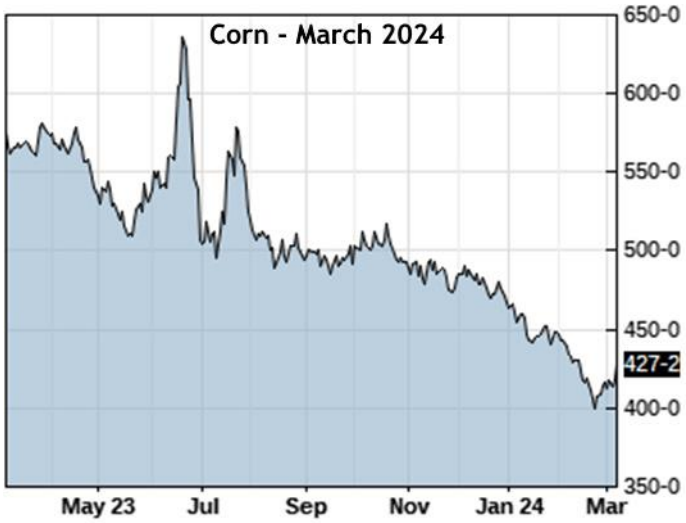
Monthly Grain Market Outlook

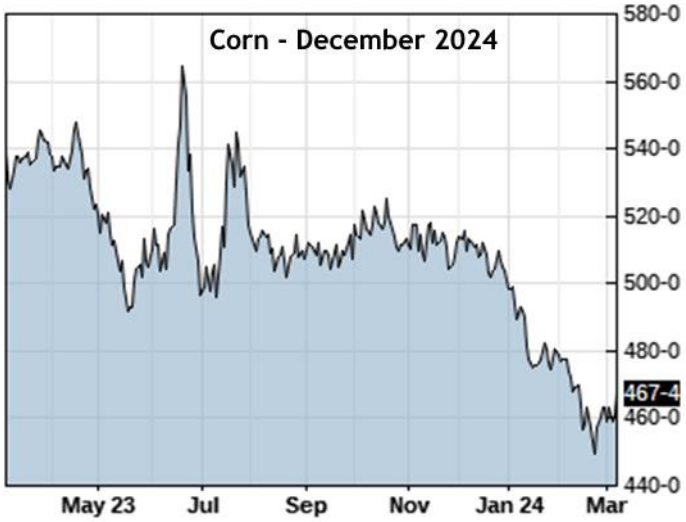
Nate Bruce, Farm Business Management Specialist, nsbruce@udel.edu

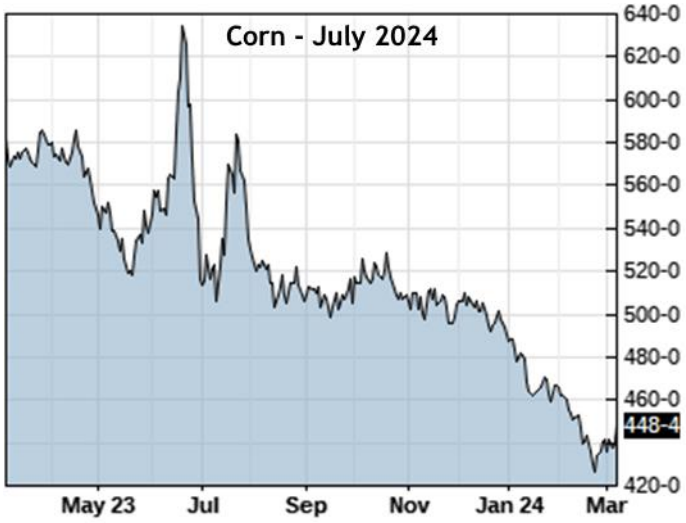
March is going to be a critically important month for commodity prices. South American crops are coming into fruition and USDA will be releasing the projected planting report on March 28th. Corn prices may have reached their low price point during the second half of February. December corn has jumped $0.10 cents since reaching a market price low of $4.50 in late February. All corn futures have increased since the late February low. Prices were helped considerably with short positions exiting the market and rumors of China looking to import corn. Soybean prices have been relatively flat thus far in March as Brazil finishes up harvest. Soybean export demand has been consistently weak but the demand for soybean oil and crush remains strong. Wheat prices are in total freefall despite lower production in several major exporters. Wheat markets may have adjusted to a new normal larger global supply, despite the geopolitical tensions present in the world right now. At the time of this writing, WASDE will be released tomorrow on March 8th. The next WASDE report will come out on April 11th.

Brazil is in the middle of harvesting soybeans. Last month, CONAB, the Brazilian equivalent of USA cut their outlook for soybeans to 149.40 million tons. Between CONAB, USDA, and various Agribusiness Firms, the 2023/24 Brazilian crop is expected to be somewhere between 148 – 152 million tons. This harvest could potentially be the second-largest crop on record. Harvest will continue this month and the reality will become clearer. Either way, China is continuing to purchase everything they need from Brazil right now, driving domestic production out of the export market. Brazil, Argentina, and the US accounts for 80% of all global soybean output. In addition to soybean news out of Brazil, Argentina is expecting an increase in soybean production this marketing year, further cementing the South American stranglehold over the export market. In addition, there were reports recently of several cargo ships importing Brazilian grain into ports on the eastern seaboard of the United States. Poland is on the front line of a European grain crisis that is continuing to widen. The Ukraine-Russian War has forced Ukrainian grain to find alternative export routes other than the Black Sea. Overland across the Polish border has been met with strong resistance from Polish farmers. Russian grain is entering the European Union through the Polish / Belarusian border, increasing tension through Eastern Europe. The war has not been the major market mover that many thought it would be in the earliest days of the conflict. World grain supplies have seemed to find a balance.

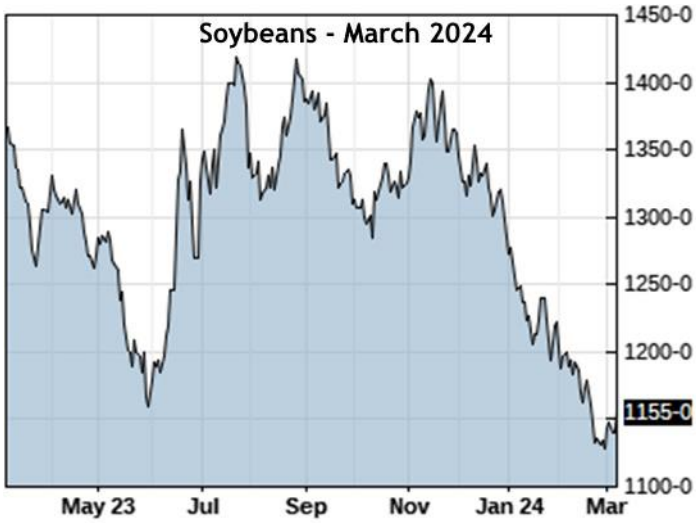
Corn Futures

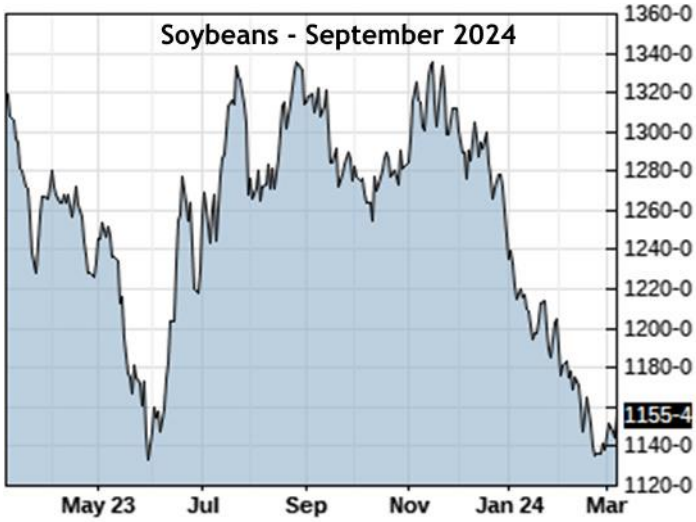


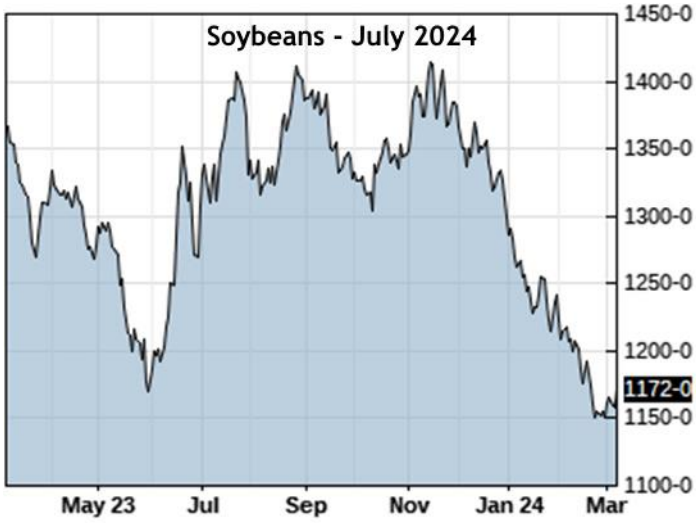




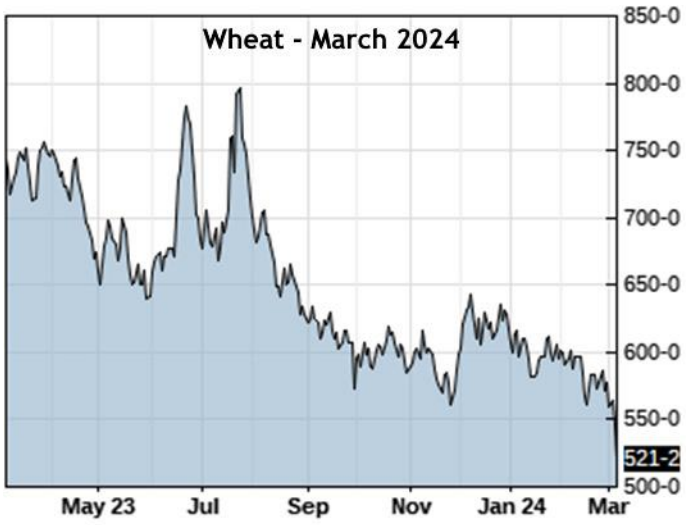
Soybean Futures

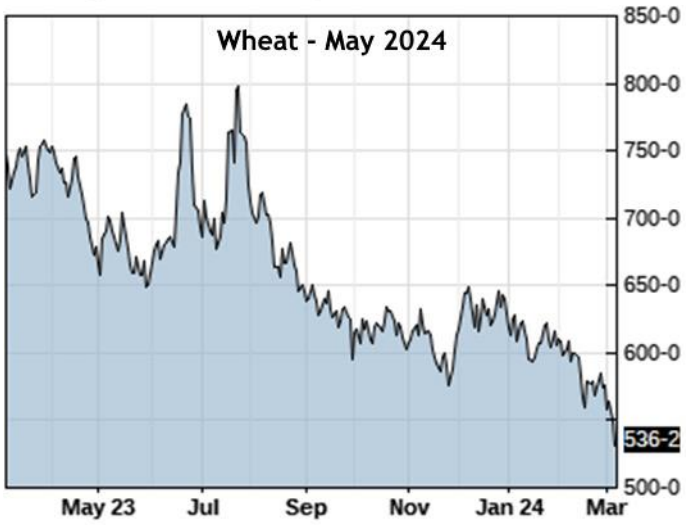


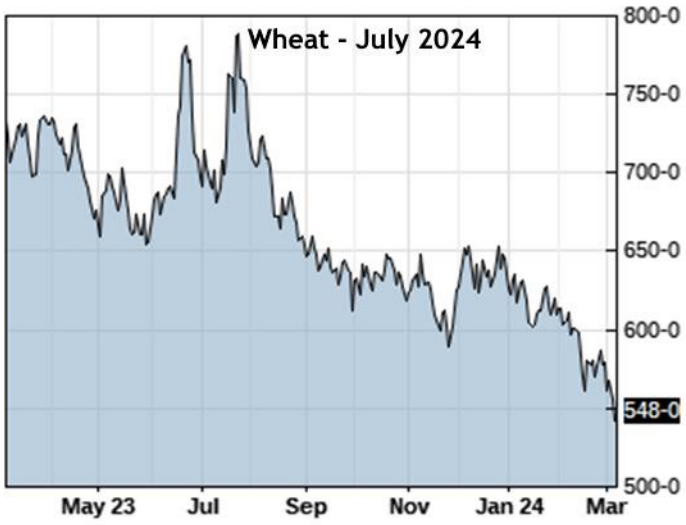




Wheat Futures







General

Weather Based Tools to Help Delaware Farmers Make Management Decisions

Emmalea Ernest, Extension Fruit & Vegetable Specialist; emmalea@udel.edu

Delaware has a dense network of weather stations that is maintained by Delaware Environmental Observing System (DEOS). The weather data from DEOS stations is publicly available through the DEOS website (deos.udel.edu). The DEOS home page is a great resource for quickly checking temperature, wind speed, rainfall totals, and radar and satellite loops for Delaware (Figure 1.). I personally use the DEOS home page almost every day during the growing season to check rainfall totals and temperatures and to dodge thunderstorms as I plan (and replan) the day's field work.

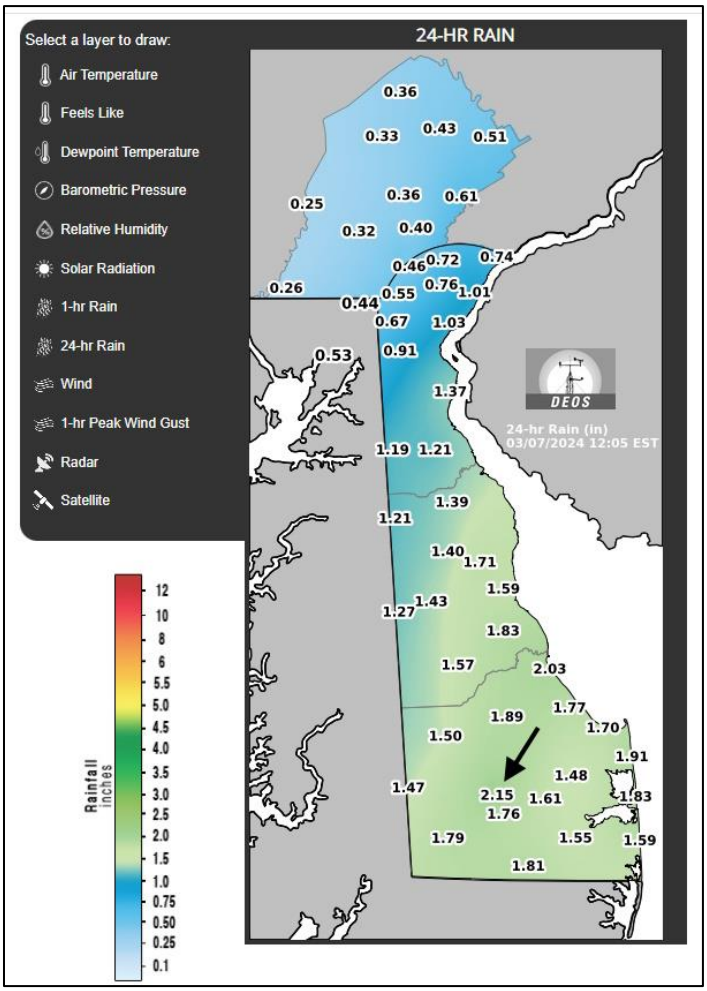


Figure 1. On March 7, 2024, the DEOS 24-hour rainfall map indicates that we got 2.15 inches at the Georgetown research farm and rainfall amounts were higher in southern Delaware.

Almost 20 years of historical weather data from the DEOS system is available through the DEOS Data Services page https://deos.udel.edu/data/. This data can be useful when trying to understand how weather conditions may have impacted crop performance. In Figure 2 I plotted the daily high and low temperatures for the period when I was growing watermelons in 2023, as well as the 10-year average high and low temperatures. Obviously, temperatures were much lower than average during the beginning of the growing season, which helped to explain the delayed harvest that I observed.

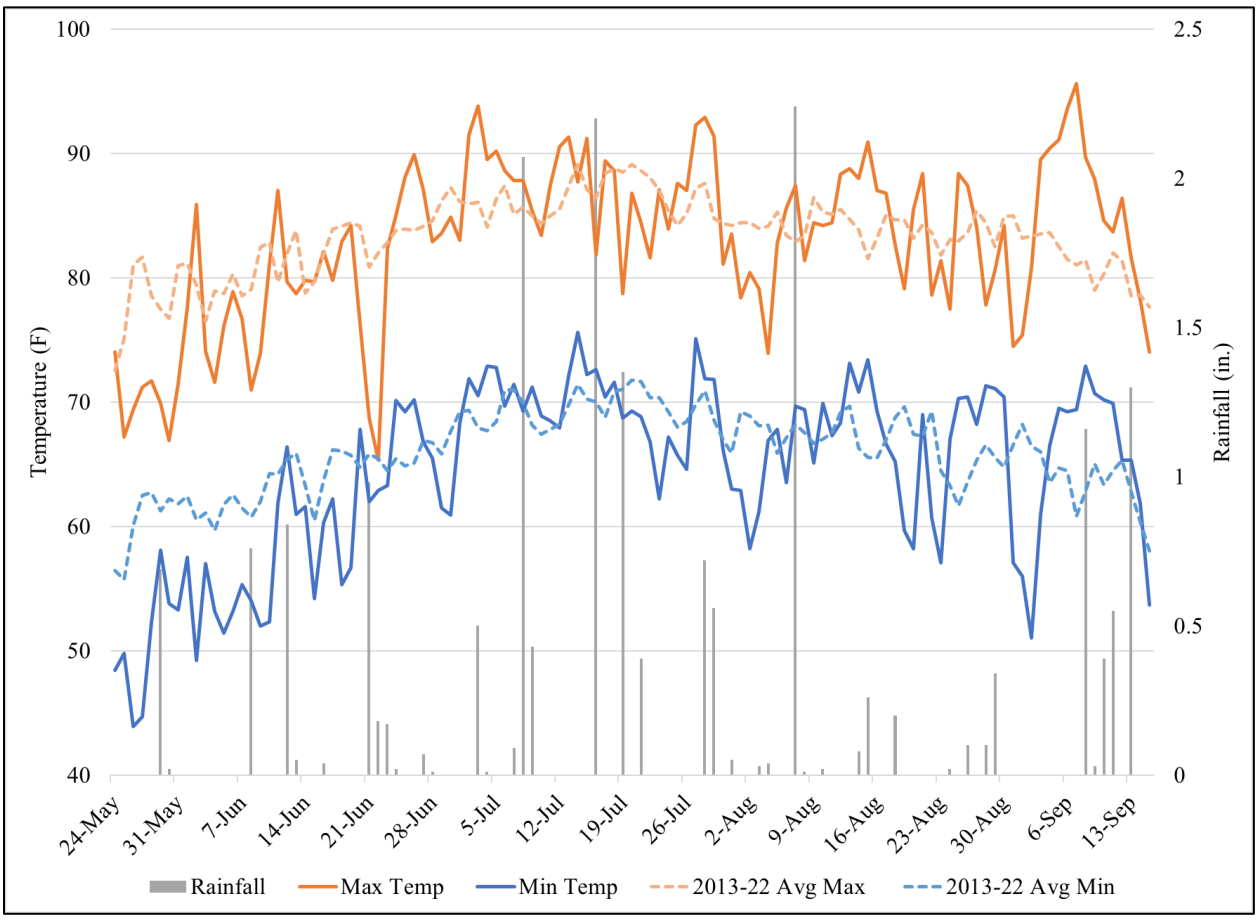


Figure 2. Season-long weather summary from the 2023 seedless watermelon variety trial.

If you don't have time to create your own temperature charts, the Climate Smart Farming Growing Degree Day (GDD) Calculator from Cornell University (http://climatesmartfarming.org/tools/csf-growing-degree-day-calculator/) is another tool that can help you determine whether the current season's temperatures are a lot different that past seasons. In Figure 3, note that the 2023 season's GDD accumulation (green line) is lower than what is typical for the past 15 (blue line) and 30 (purple line) year averages in the month of June. GDD accumulation remains below the 15-year average through the end of the 2023 watermelon production season.

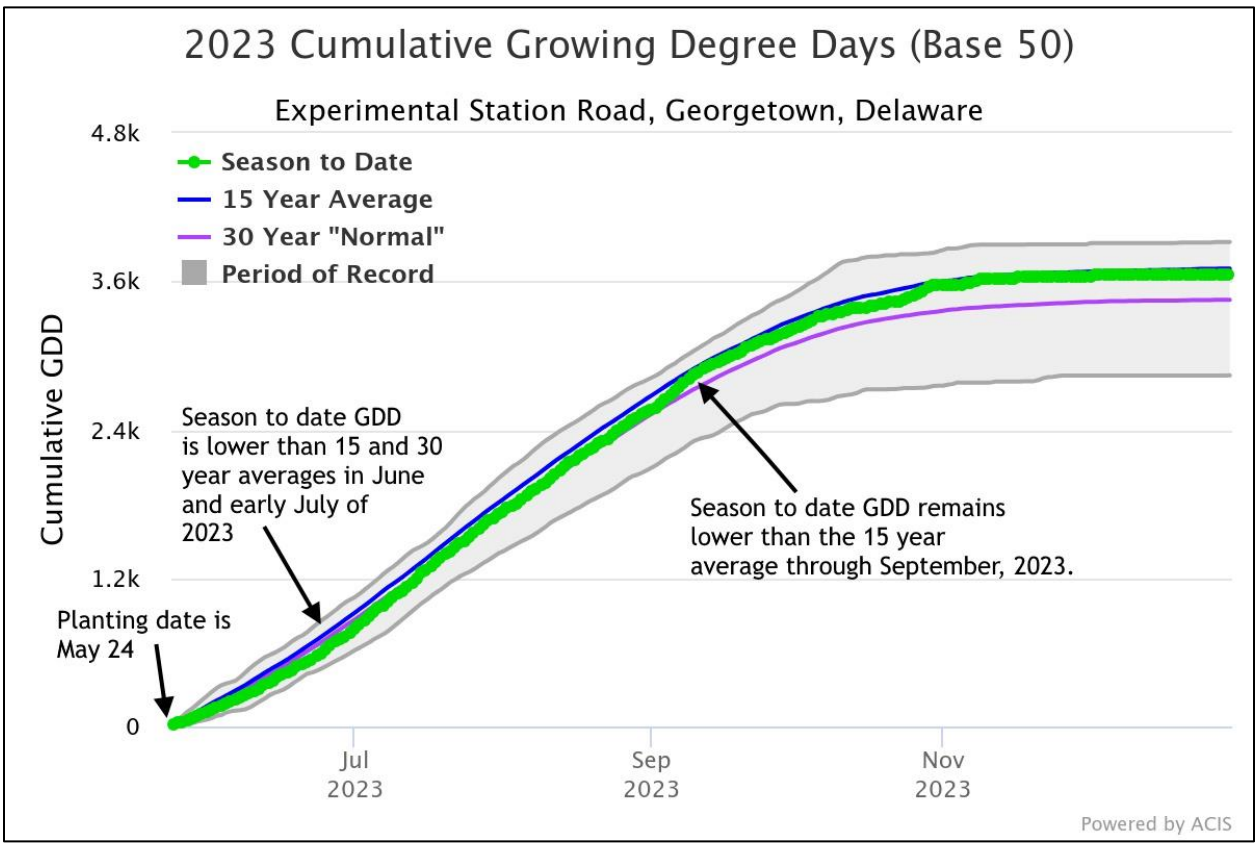


Figure 3. Comparing the observed GDD accumulation in 2023 to historical averages from the past 15 or 30 years using the Climate Smart Farming GDD Calculator.

The Climate Smart Farming GDD Calculator can also be used to predict maturity dates for crops, based on the 15 and 30-year average GDD accumulations. Figure 4 shows the base 40 GDD accumulation starting on April 1. If I plant peas on that date, I can expect a 1200 GDD variety to mature around May 29 and a 1600 GDD variety to mature around June 10. This tool can also be used at the end of the growing season, to determine if late plantings are likely to accumulate enough GDDs to mature.

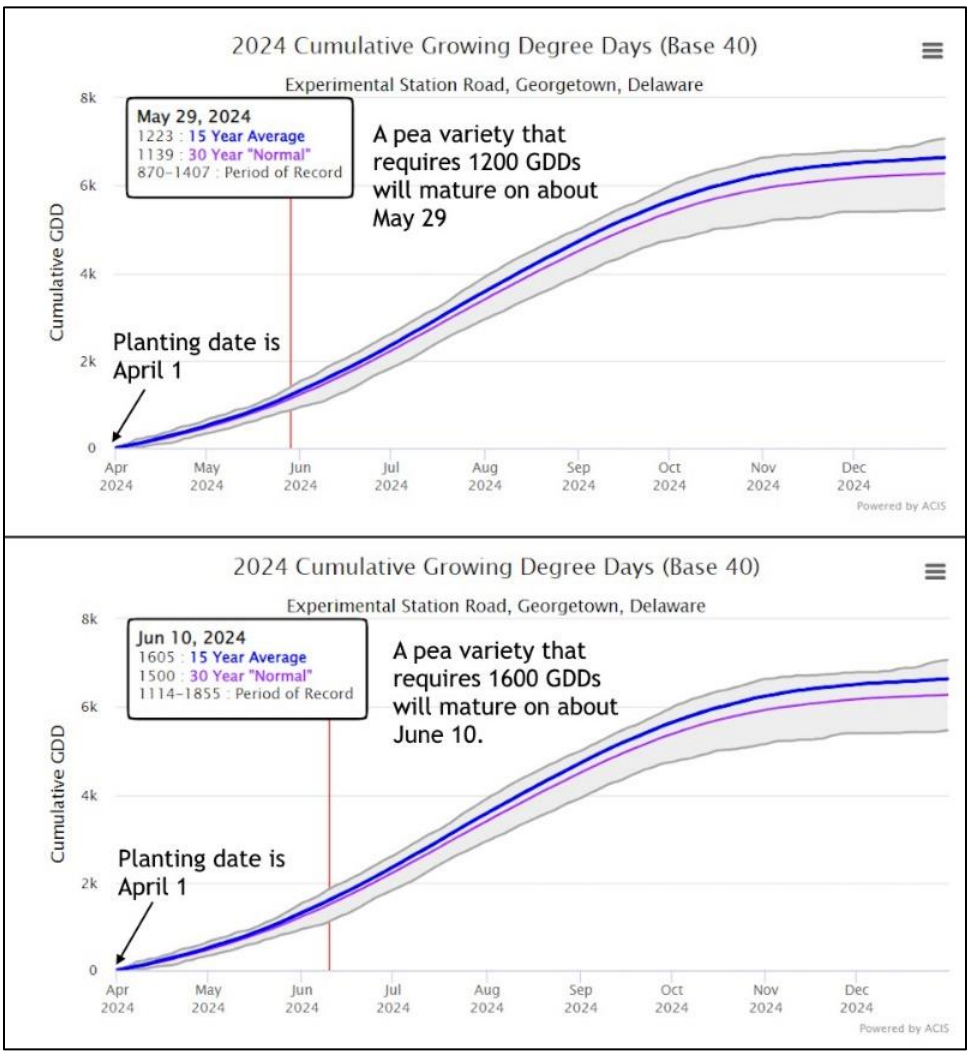


Figure 4. Harvest date prediction for peas using the Climate Smart Farming GDD Calculator.

Farmers may want to use weather data to predict the optimal time to protect their crops from pests and diseases. Weather data from the DEOS network is also accessible through the NEWA system (https://newa.cornell.edu/) thanks to funding obtained by the Fruit and Vegetable Growers Association of Delaware. The NEWA website offers weather summary tools and crop disease and insect pest forecasting models. Many of the available IPM models are for fruit crops, including apple, blueberry, strawberry (Figure 5) and grape. However, there are also models for alfalfa weevil, western bean cutworm, white mold (in soybean and snap bean), seedcorn maggot and some vegetable diseases. If you want to start using NEWA, there are short tutorial videos for each of the IPM models and weather tools. These videos can be accessed by clicking the "Watch Tutorial" button in the top left corner of the page for each tool. Many of the tools include the weather forecast for your location in the model. This can help you know if a pest or disease control application might be needed soon, based on the predicted weather.

Figure 5. NEWA's Strawberry Diseases Model includes the forecasted weather for the next 5 days.

Because we have had some warmer winter temperatures over the last few years people have asked about chilling hours. The perennial fruit crops that we grow in Delaware (such as apples, grapes, blueberries and strawberries) require a certain amount of cold weather during the winter in order to come out of dormancy, grow normally and produce fruit. The chilling hour calculation attempts to model the amount of time when the weather conditions go towards meeting the chilling requirement for the crop. There are Chilling Hours Maps available from the Midwest Regional Climate Center https://mrcc.purdue.edu/VIP/indexChillHours. Different varieties have different chilling requirements, and it is important to choose the right fruit varieties for our climate. After a variety's chilling requirement is met, it will break dormancy, making it susceptible to freeze damage in a false spring. Planting varieties with a chilling requirement that is too low for our climate puts plants at risk of freeze damage. Varieties with a chilling requirement that is too high for our climate may not leaf out, or fruit normally following a warm winter. In the map below, note that locations in Delaware have at least 1,000 accumulated chilling hours as of March 6, 2024. This is sufficient for high chill blueberry varieties, however, areas that are slightly south of the Delmarva Peninsula may not have received sufficient chilling for the Northern Highbush blueberry varieties with high chill requirement.

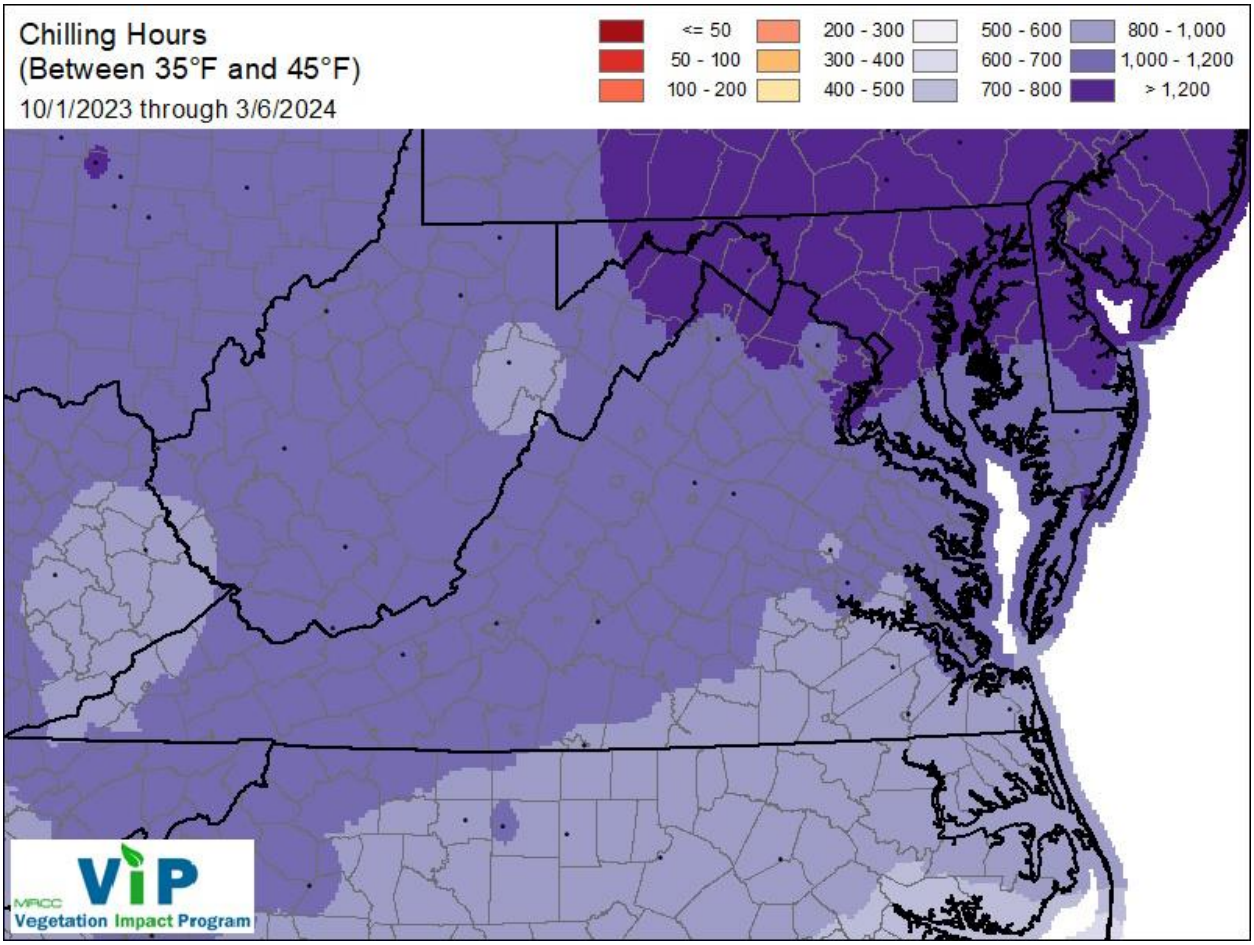


Figure 6. Accumulated chilling hours as of March 6, 2024 for Delaware and the region from the Midwest Regional Climate Center.

As you plan for the 2024 growing season and beyond, you may want to explore some of these weather-based tools that are available to help you make management decisions.

Survey for Field Equipment Sanitation

Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

I am part of a group of researchers looking at how vegetable farmers and the industry approach sanitation. We have developed a short (less than 5 minutes), anonymous survey about how different groups approach sanitation. We will use this information to determine if there is a need to develop further research or better outreach programs around this topic. If time allows, please consider completing this survey. Survey can be found at https://forms.gle/JRbGCYH22SRgh72p9

Agricultural Pest Management Needs Assessment Survey

David Owens, Extension Entomologist, owensd@udel.edu

We are in the process of writing a grant proposal that funds a very significant chunk of UD and DSU integrated pest management extension programs and we would like to hear from you to help guide our narrative and proposed outputs. Please take a few moments to answer a very short, 7 question survey: https://delaware.ca1.qualtrics.com/jfe/form/SV_8IkutN5bHUbib7o or by following the QR code:

2024 AI-CLIMATE Stakeholder Survey

Rose Ogutu, Horticulture Specialist, Delaware State University rogutu@desu.edu

The AI-CLIMATE Institute for Climate-Smart Agriculture was established in 2023 to help improve farmers', foresters', and ranchers' ability to make more informed decisions and respond to climate change (https://cse.umn.edu/aiclimate).

Climate change is causing disruptions to agricultural and forestry systems through its impact on temperatures, precipitation, extreme weather events, uncertainty and variability, and changes in weeds, pests, and diseases.
Machine learning (artificial intelligence or AI) is the science of developing computer systems that can perform tasks that normally require human intelligence, such as recognizing patterns or making decisions. AI technology can process large amounts of data to improve decision-making.
Our team is exploring compelling AI-powered knowledge and solutions - for example to enhance the measurement of greenhouse gases (GHGs) and create specialized decision-support tools for farms. The new institute is a collaboration among the University of Minnesota, Colorado State, Cornell, **Delaware State**, North Carolina State, Purdue, the USDA National Institute for Food and Agriculture, and the National Science Foundation. Watch a video about the work of our team: "Curbing Climate Change with Artificial Intelligence," UMN Dept. of Computer Science and Engineering, December 6, 2023.

We need your input to develop the most useful AI-inspired data and tools possible! Please take 3-5 minutes to fill out this short questionnaire to give us your input on the needs for AI in Climate-Smart Agriculture and Forestry.
Please follow the following link to complete the survey.
Farmer-Questionaire- https://docs.google.com/forms/d/e/1FAIpQLScXR7ihtuNJoEOcx3J7uOx63FVrc3d3OYhwS1tBESuKzyzarA/viewform?usp=sf_link
Non-Farmer Questionaire- https://forms.gle/arSimfzkfZjRx8RBA

Non- farmer Questionaire

Farmer Questionaire

Thank you very much for providing us with your feedback! Rose Ogutu (Horticulture Specialist-Delaware State University) on behalf of the AI-CLIMATE Team, ai-climate@umn.edu

Announcements

Transition to Organic Production Seminar

March 27th, 2024, from 6:00-8:00pm, New Castle County Conservation District

2430 Old County Road, Newark DE 19702

Join UD Cooperative Extension and the USDA Transition to Organic Partnership program for an evening seminar on converting your Grain or Vegetable farm to Certified Organic. If you are interested in learning more on how to transition your operation or the help that is available for the process, this event is for you!

No Registration is required, and this will be a Hybrid event with the following zoom link.

https://udel.zoom.us/j/91374237244

Any Questions please contact Nick Adams at 302-476-1136 or naadams@udel.edu

Webinar on How Endangered Species Act Will Affect Pesticide Registration
Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

The EPA is moving to more fully implement the Endangered Species Act (ESA). As a result of recent court rulings. How does the EPA intend to address the ESA, what will this mean for pesticide usage, and pesticide registration. The New York Integrated Pest Management Program will host a webinar on March 20 at 11 am to address these and other questions. Dr. Bill Chism will be the featured speaker. More information on the webinar and the speaker are found at https://cals.cornell.edu/endangered-species-act-and-pesticides-example. The webinar is free, but registration is required and that can be found at the same website.

Delaware Grain Marketing Club Meeting
Wednesday, April 17th, 2024 6:00-8:00 p.m.
University of Delaware
Paradee Center
69 Transportation Road, Dover, DE

The Delaware Grain Marketing Club will have its second quarter meeting of 2024 on April 17th at the Kent County Extension Office. Topics will include a grain market outlook, production issues to watch for in 2024, and strategies to keep up with market prices during the season. Dinner will be provided.

To register, please contact Lisa Collins.

E: lcollins@udel.edu

P: 302-831-3402

Please contact Nate Bruce nsbruce@udel.edu with any questions.

Farmer Stress, Stigma and Mental Wellbeing Survey
Maria Pippidis, Extension Educator; pippidis@udel.edu

Farmers & ranchers, farm workers, foresters, aquaculture, marine producers, and others who live in Delaware communities and those who work in agriculture related industries are invited to participate in a short survey about stress and mental health. We want to hear from you.

Participation in this project is anonymous and is entirely voluntary. You may skip any question that you do not wish to answer, and you may discontinue at any time. West Virginia University Extension is taking the lead on this regional survey. Please consider participating in this important Northeast region study.

Participants who complete the survey are eligible to be entered in a drawing for a Gift

Card. One person will be selected randomly from each state in the Northeast region to receive a $50 Amazon gift card.

For more information and to participate, follow the QR code or enter one of the anonymous links below. The survey is open through April 2024 and the Gift card drawing in May.

The study is trying to understand access and barriers to mental health resources in agriculture. You can use the QR code or go to this website: https://bit.ly/Cultivemos

This survey is funded through FRSAN - Northeast (Farm and Ranch Stress Assistance Network) and is being conducted by the Extension systems within this region.

If you are looking for resources in Delaware about this topic, please google Delaware Got Your Back or go to https://www.udel.edu/academics/colleges/canr/cooperative-extension/nutrition-wellness/got-your-back/

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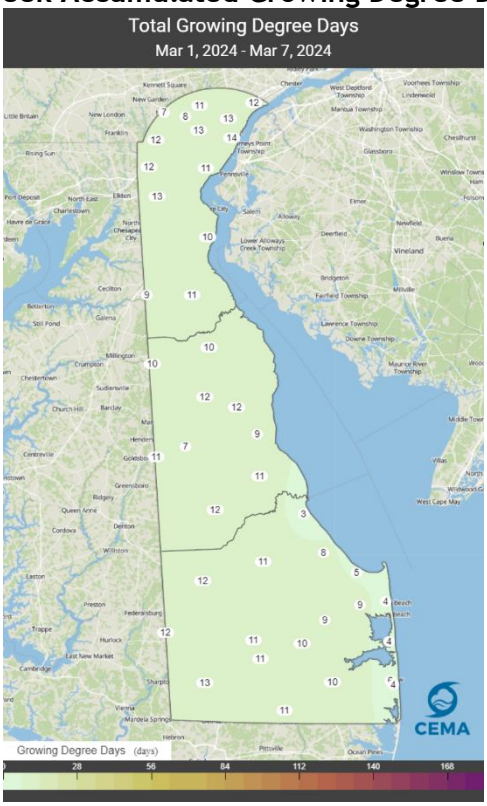
Safety Advisory Bulletin

Link to SAFETY Advisory Bulletin issued by FMCAS and DOT on possible catastrophic failure of nurse tanks.

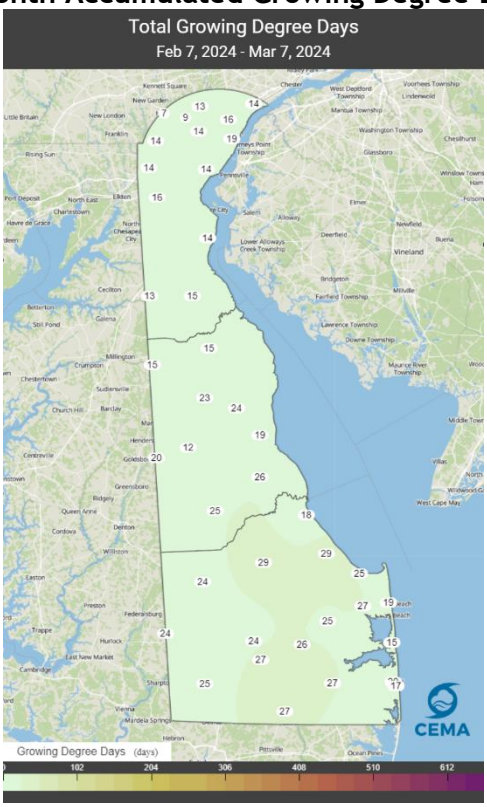
https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/2024-02/Safety%20Advisory%20AWT%20Nurse%20Tanks.pdf

Weather Summary

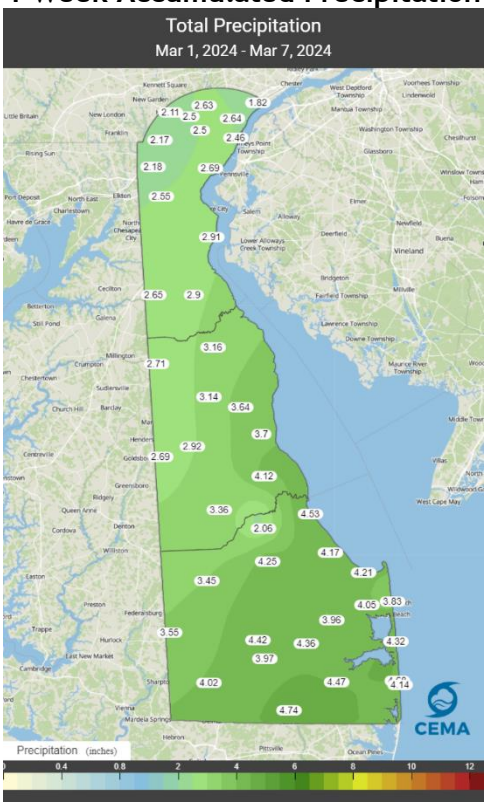
1 Week Accumulated Growing Degree Days



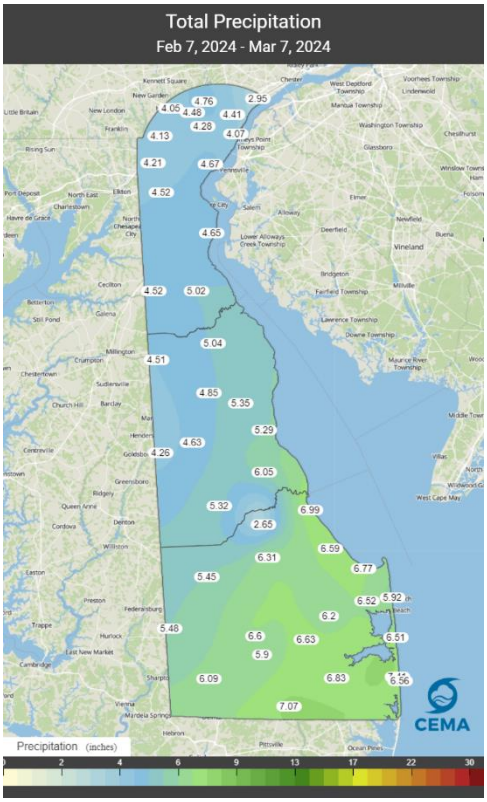
1 Month Accumulated Growing Degree Days



1 Week Accumulated Precipitation



1 Month Accumulated Precipitation



Weekly Crop Update is compiled and edited by Emmalea Ernest, Extension Fruit & Vegetable Specialist and Drew Harris – Kent Co. Ag Agent