

2025 North American Berry Kona, Hawai'i Conference

The North American Raspberry & Blackberry Association



NARBA is a membership organization dedicated to the advancement of the raspberry and blackberry industry. Members are growers, nurseries, marketers, processors, researchers, breeders, extension, suppliers, and state and regional affiliate organizations.

MISSION

- To actively support a vibrant, healthy, and competitive raspberry and blackberry industry at all levels, from the farm stand to the global marketplace
- To provide a unified voice and platform to represent the raspberry and blackberry industry in North America
- To identify, support and communicate research and marketing priorities for raspberries and blackberries in North America affecting the general interest of the NARBA membership and the industry
- To engage with partner organizations on promotion of raspberries and blackberries with a focus on breeding, production, extension, health benefits and consumer outreach

NOT A MEMBER? NARBA invites you to join during the conference (see the registration table) or to contact <u>info@raspberryblackberry.com</u> for any questions about membership!

The North American Strawberry Growers Association



NASGA was organized in 1977 and incorporated as a nonprofit corporation by progressive strawberry growers and leading small fruit researchers. Their purpose was to support USDA and state/provincial research programs, develop educational seminars and publications, promote development of equipment, varieties and cultural methods to improve efficiency for the strawberry industry - including grower applied research, and promote beneficial legislation.

Today NASGA represents more than 250 members in 40 states, 10 provinces of Canada and 15 countries. NASGA continues to be a grower-based association strongly rooted in the original philosophy that ongoing research will provide knowledge to strengthen and improve strawberry production and marketing.

To accomplish this mission NASGA:

- Commits 25% of dues to research (NASGA has granted over \$350,000 in research dollars).
- Formed a foundation to generate increased funds for research (NASGA has increased funding to more than \$50,000 per year).
- Sponsors an educational winter conference and publishes a newsletter for members.
- Organizes a summer tour to premiere berry farms throughout North America as well as tours to growing areas around the world and supports issues critical to the well-being of strawberry growers through an active legislative committee.

NOT A MEMBER? NASGA invites you to join during the conference (see the registration table) or to contact <u>info@nasga.org</u> for any questions about membership!

2025 NORTH AMERICAN BERRY CONFERENCE SCHEDULE

Schedule subject to change.

Monday, February 3rd

1:00pm – 4:00pm | Registration / Check-In Open – Kaleiopapa Convention Center Outdoor Foyer, OUTRIGGER Kona Resort & Spa

5:00pm | Opening Reception – Bayview Grounds, OUTRIGGER Kona Resort & Spa

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Tuesday, February 4th

7:30am – 8:25am | Registration & Exhibitor Sessions – Kaleiopapa Convention Center Outdoor Foyer

Keauhou I & II – Joint General Session

8:25am – 8:30am | Conference Welcome

8:30am – 9:00am | Opening Remarks – Bonhee Chung, Market Analysis and News Branch Manager, Agricultural Development Division, Hawai'i Department of Agriculture – Agriculture in Hawai'i

9:00am – 9:20am | Penelope Perkins Veazie, North Carolina State University – Career Retrospective – Strawberry Fruit Quality: Meeting Consumer Demands for Flavor and Health

9:20am – 9:40am | Hannah Levenson, North Carolina State University – Improved Management Recommendations for the Control of Spotted-Wing Drosophila in Berry Crops

9:40am – 10:00am | Chuanfei Zhong, Beijing Academy of Agriculture and Forestry Sciences – Progress of the Chinese Strawberry Industry

10:00am - 10:30am | Aaron Cato, University of Arkansas - Using Drones in Berry Production

10:30am – 11:00am | Refreshment Break & Exhibitor Session – Kaleiopapa Convention Center Outdoor Foyer

11:00am – 11:30am | Dan Villamor, University of Arkansas – Clean Plants 2.0: Overcoming the Challenges of Detecting Berry Viruses

11:30am – 12:00pm | Protected Culture Panel – Moderated by Austin Wrenn, Wrenn's Farm, LLC

- Corenthin (Felix) Chassouant, Harnois
- Richard Mills, Haygrove
- Cal Lewis, Lewis Nursery and Farms, Inc.
- Israel Holby, Plantlogic

12:00pm – 1:25pm | Lunch & Exhibitor Session – Kaleiopapa Convention Center Outdoor Foyer & Back Lawn

Keauhou I & II – Joint General Session, continued

1:25pm | After Lunch Welcome

1:30pm – 2:00pm | Joshua Mays, TriEst Ag Group – What Happens to Soil Microbes When You Fumigate? How to Integrate Soil Fumigation into a Soil Health System

2:00pm – 2:30pm | Jérémie Pitre, Entreprise Pitre, Quebec – Grower Profile: Transitioning from Open-Field to High-Tunnel Production, Innovative Strategies for Small Fruit Growers

2:30pm – 3:00pm | Betsy Bihn, Cornell University – Revised FSMA Produce Safety Rule Pre-harvest Agricultural Water Requirements

3:00pm – 3:45pm | Substrate Panel – Moderated by Kevin Schooley, NASGA

- Shawn Mallen, AMA Horticulture
- Shanna Riser, Grodan
- Kyle Freedman, Jiffy Group
- Lisa Rayburn, North Carolina State University

3:45pm | Exhibitor Session, Poster Session & Networking | Kaleiopapa Convention Center Foyer

7:30pm | **Berry Bull Session** - **Lessons Learned** | *Keauhou II* - This an opportunity to talk with other growers and agribusiness experts about success and challenges that growers have had over the years. It's an open forum to ask questions from others and share your experiences.

Wednesday, February 5th

8:00am – 8:55am | Exhibitor Session – Kaleiopapa Convention Center Outdoor Foyer

Keauhou I – Caneberry Morning Session

8:55am – 9:00am | Day 2 Caneberry Welcome

9:00am – 9:30am | Tom Spaulding, Pairwise – Gene-Edited Blackberries that Benefit Growers and Consumers: Roadmap to High-Yielding, Seedless and Thornless Blackberries from Pairwise

9:30am – 10:00am | David Bryla, USDA- ARS Corvallis – Impacts of Post-harvest Water Deficits and Alternate-Year Production on the Seasonal Water Requirements of 'Columbia Star' Trailing Blackberry

 $10:00am-10:30am \mid Joshua Mays, TriEst Ag Group - \mbox{Annual Raspberry Systems in the Southeast USA-How to Develop the Fourth Berry Crop}$

Keauhou II – Strawberry Morning Session

8:55am – 9:00am | Day 2 Strawberry Welcome

9:00am – 9:30am | Jayesh Samtani, Virginia Tech – Effect of Additional Fall Season Growing Degree Day Accumulation on Strawberry Fruit Yield

 $9:30 am-10:00 am \mid Natalia \ Peres, University \ of \ Florida- Neopestal otiops is \ Update$

10:00am – 10:30am | Amanda McWhirt, University of Arkansas – Managing Nitrogen in Short and Long Day Strawberries

10:30am – 11:00am | Refreshment Break & Exhibitor Session – Kaleiopapa Convention Center Outdoor Foyer

Keauhou I – Caneberry Morning Session, continued

11:00am – 11:30am | Amanda McWhirt, University of Arkansas – Recommendations for Leaf Tissue Nutrient Sampling in Blackberry

11:30am – 12:00pm | Caneberry Cultivar Panel – Moderated by John R. Clark, Fruit Breeding Consultant and Retired Distinguished Professor of Horticulture at the University of Arkansas

- Jackie Lee, University of Arkansas
- Michael Hardigan, USDA-ARS Corvallis
- Joe Fiola, University of Maryland
- Ellen Thompson, Hortifrut North America, Inc

Keauhou II - Strawberry Morning Session, continued

11:00am - 11:20am | NASGA Annual Meeting

11:20am – 12:00pm | Strawberry Cultivar Panel - Moderated by Kim Lewers, USDA-ARS

- Amanda Emond, Nourse Farms
- Charlie Gunderson, *Planasa*
- Courtney Weber, Cornell University
- Hillary Thomas, Naturipe Berry Growers, Inc.

12:00pm – 1:30pm | Lunch & Exhibitor Session – Kaleiopapa Convention Center Outdoor Foyer & Back Lawn

Keauhou I – Caneberry Afternoon Session

1:30pm – 2:00pm | NARBA Annual Meeting

2:00pm – 2:30pm | Lorena Lopez, North Carolina State University – Spider Mite Management in Protected Culture

2:30pm – 3:00pm | Aaron Cato, University of Arkansas – Survey of Mites in Blackberries and Their Management in the SE

3:00pm – 3:45pm | Caneberry Grower Panel – Moderated by Jayesh Samtani, Virginia Tech

- Bo Slack, Cal Giant
- Blaine Staples, The Jungle Farm
- Kerry Charron, ROC Farm
- · Barron Shaw, Shaw Orchards

Keauhou II – Strawberry Afternoon Session

1:30pm – 2:00pm | Kim Lewers, USDA-ARS – "The Times They are a 'Changin': Neopestalotiopsis and CEA

2:00pm – 2:30pm | Hillary Thomas, Naturipe Berry Growers, Inc. – Trends in the CA Strawberry Industry

2:30pm – 3:00pm | Nate Westrick, Connecticut Agricultural Experiment Station – Managing Anthracnose Crown Rot: An Emerging Issue in the Northeast

3:00pm – 3:30pm | Kashif Riaz, Production Lareault – Challenges of Vertical / Indoor Strawberry Production

3:30pm | Exhibitor Session, Poster Session & Networking | Kaleiopapa Convention Center Foyer

Thursday, February 6th

8:45am | Depart for Island of Hawai'i Agricultural Tour – OUTRIGGER Main Lobby

All groups will leave the hotel promptly at 8:45am and return around 4pm. Please plan to be in the lobby by 8:30am. Drivers will meet their group at the hotel roundabout in front of the main lobby. The tour includes lunch. **You must sign-up for a tour group** and carpooling is encouraged.

- Group A: Route Kona Salt Farm, Greenwell Farms, and Big Island Bees
- > Group B: Route Big Island Bees, Kona Salt Farm, and Greenwell Coffee
- **Group C:** Route Greenwell Farms, Big Island Bees, and Kona Salt Farm

Please bring your supplemental handout for the self-driving tour. Plan to wear layers of clothing appropriate to tour fields and for extended time outside in the Hawai'i sun. Wear sunscreen, a hat and closed toed shoes.



Penelope Perkins-Veazie | 2025 Distinguished Service Award

Thank you for your decades of dedication to the specialty crop industry. Your innovative research and extension work has improved the industry and made lasting impacts.

Penelope Perkins-Veazie is a Professor of Horticulture at North Carolina State University at Kannapolis. Her areas of speciality are in postharvest physiology in fresh fruits and vegetables, for shelf life, flavor, bioactive preservation.

Dr. Penny Perkins-Veazie heads research on postharvest physiology and technology for fruits and vegetables for North Carolina State University. Her research involves storage methods to extend shelf life, collaborative studies to determine fruit and vegetable roles in human health, storage technologies to enhance functional food compounds, and the identification and quantification of health-related compounds in fruits and vegetables and from production systems. She also evaluates food safety, quality and consumerappeal characteristics such as flavor, color, antioxidants and texture to make sure growers will have better quality fruits and vegetables for high-value markets.



Dr. Perkins-Veazie is also a professor of Postharvest Physiology at the Plants for Health Human Institute at NC State. She graduated from the University of Maine with a B.S. and went on to the University of Florida where she received an M.S. and PhD.

Perkins-Veazie is known worldwide for her groundbreaking research on how postharvest storage of fruit and vegetables alters their nutritional and phytonutrient profiles. Her work has included assessing how genetic traits, production systems, and postharvest storage management affect nutritional and market characteristics. She also has developed storage methods that have helped to extend the shelf life of produce.

Her findings have helped create new markets and production opportunities for a range of specialty crops including niche produce such as radicchio, turnip, okra, butternut squash, blackberry, raspberry and muscadine.

Kevin and Margo Schooley - Thank you for your service!



Kevin is one of the most knowledgeable berry crop specialists in North America, with extensive expertise in clean plant programs, strawberry propagation, breeding, variety rights, pest management, and evolving production systems. At the close of the 2025 North American Berry Conference, Kevin and Margo Schooley will begin their retirement from the North American Strawberry Growers Association!

Together with Margo, Kevin has been a cornerstone of NASGA's success, combining dedication and thoughtfulness to keep the organization running smoothly, while balancing their family life. For many years, they have organized NASGA's annual conferences, summer tour and the North American Strawberry Symposium held every four years. Kevin's remarkable people skills set him apart—he inspires, values, and empowers others while fostering collaboration and solutions.

Kevin played a pivotal role in saving NASGA's financial stability in 2005, transforming its precarious state after a costly 2003 meeting into a thriving organization. His calm leadership and behind-the-scenes efforts have consistently ensured success, whether guiding committees, supporting conferences, or solving logistical challenges.

Through his mentorship, Kevin empowers others to lead, offering guidance and encouragement that instill confidence. His contributions, alongside Margo's, have left a lasting legacy on NASGA and its members, who deeply value their leadership and friendship. Kevin and Margo have always worked hand in hand to get things accomplished for NASGA events, execution and planning. Kevin has been on the forefront of things and Margo has been the backbone. They are truly irreplaceable and will be dearly missed!

THANK YOU TO OUR 2025 SPONSORS!



Poster Presenter:

Dr. Mirella Aoun, Bishop's University

Title:

CANberries: Renewable Energy for Year-Round Production of Canadian Raspberries

Abstract Summary:

The CANberries project pioneers sustainable berry production through the integration of renewable energy technologies and climate-smart practices in controlled environment agriculture. Focusing on off-season raspberry production, the initiative features the construction of a solar passive greenhouse prototype, integration of agrivoltaics and aerogeothermal energy systems, and the design of a soilless cultivation system for out-of-season production. The project aims to eliminate fossil fuel reliance, mitigate climate change impacts, and enhance year-round supply chain resilience. Key objectives include ensuring consistent out-of-season raspberry supply, developing scalable renewable energy solutions, assessing economic feasibility, and transferring knowledge to producers.

Poster Presenter:

Mary Jamieson, Oakland University

Title:

Variation in Strawberry Functional Traits: Implications for Fruit Quality & Production

Abstract Summary:

Strawberry functional traits shape fruit productivity, quality, and resilience to pests, pathogens, and other environmental stressors. This poster highlights findings of two studies examining variation in strawberry functional traits across cultivars grown in an urban agricultural setting. Plants were grown in soilless potting medium in common garden experiments at the Oakland University Student Organic Farm in Rochester Hills, Michigan. In the first study, we found that plant response to mycorrhizae and herbivory treatments depended on cultivar. In one cultivar, mycorrhizal inoculations increased yield by 30-40%. Overall, genotype was a stronger predictor of variation in flower/fruit production and flower volatiles in comparison to biotic interactions. In the second study, results indicated that day-neutral varieties produced higher total fruit yield across and within years, with ~30% higher overall annual yield and 65% higher yield in our peak production year. Tribute had the highest fruit yield by weight, but smallest fruits. Albion had the largest fruits by weight, but produced the fewest number. Honeove had the lowest proportion of fruits damaged by pests/pathogens. Earliglow had the highest fruit total anthocyanin concentrations. For commercial growers, the choice of which cultivars to plant depends on labor and profitability considerations. Growing multiple cultivars, however, can extend the production period, add variety in fruit quality, and may be an important bet-hedging strategy, especially for organic growers, to enhance pest/pathogen resistance and resilience to plant stressors.

Poster Presenter:

Claude "Judy" Jean, University of Florida

Title:

Teaching Strawberry Gardening: Lessons Learned from Workshops in Northeast Florida

Abstract Summary:

Plant City, Florida, known as the "Winter Strawberry Capital of the World," is situated on the eastern side of the Florida coast and serves as a hub for innovation in strawberry cultivation. Local strawberry farmers benefit from access to the latest and most advanced cultivars, with homeowners enjoying the fruits of their labor through fresh strawberries at their local grocery stores. But can homeowners themselves experience the art and science of growing strawberries?

In September and October 2024, two workshops were held in Flagler and Putnam counties to empower homeowners with the skills to grow their own strawberries. These 2.5-hour sessions covered topics such as strawberry cultivars, best management practices, and integrated pest management (IPM). Participants received an EarthBox container, soil, fertilizer, and strawberry plugs to kickstart their home gardening journey.

The workshops introduced attendees to eight strawberry cultivars: Camino Real, Florida Brilliance, Florida Pearl 66, Sweet Sensation, Florida Ember, Florida Encore, A-18, and Marisma. A total of 39 participants—18 from Putnam County and 21 from Flagler County—attended the sessions. All participants expressed plans to adopt best practices and share their newfound knowledge with others. Notably, attendees highlighted that selecting the appropriate cultivar can mitigate pest issues, underscoring the importance of informed cultivar selection.

Future efforts will focus on evaluating the performance of these cultivars in home gardens, particularly in raised bed systems, to identify the best options for homeowners.

Poster Presenter:

Melanie Kalischuk, University of Guelph

Title:

Protecting Strawberry From Emerging Strains of Crown Rot in Canada

Abstract Summary:

Strawberry is susceptible to a wide range of pathogens, causing severe disease and crop loss. Recently, an outbreak of a new aggressive species of Neopestalotiopsis was identified in Florida, but currently there are few management strategies available for the disease. Commercial fields in Ontario were monitored for the aggressive species of Neopestalotiopsis. Of the 45 symptomatic samples collected over a three-year period, 42% tested positive for three distinct species within the Neopestalotiopsis genus. The aggressive species represented 81% of the positive samples and 6% and 13% were identified as N. rosae and a new undescribed species, respectively. RNA interference (RNAi) is an innate immunity mechanism in plants that confers disease resistance and post-transcriptional gene regulation. Application of loci-

specific double stranded RNA (dsRNA) on the surface of a plant triggers the RNA-induced silencing complex (RISC). To explore RNAi, 400 bp and 1500 bp dsRNA duplexes were made to the beta tubulin gene of a related pathogen and tested against the three Neopestalotiopsis species. The 400 bp target inhibited mycelia growth of the aggressive and new undescribed species of Neopestalotiopsis by 40-60%, while it did not inhibit the mycelia growth of N. rosae. The beta tubulin is a highly conserved gene, and it's use in RNAi shows effectiveness but highlights specificity requirements to ensure minimal cross reactivity across genera and species. These results indicate that RNAi may provide an environmentally friendly cost-effective integrated pest management strategy (IPM) for emerging pathogens.

Poster Presenter:

Xinwei Li, University of Florida

Title:

Heat-Induced Morphological and Biochemical Modulations in Blackberry

Abstract Summary:

Blackberry is a newly emerging crop in the southeastern U.S., particularly in Georgia, Alabama, and Florida. In these states, blackberries are harvested in the summer, from June to July, when temperatures exceed 90°F, which limits the production of high-quality berries. Ouachita is one of the commercial varieties grown in North Florida, and usually ripens in mid-June to early-July when the temperature exceeds 90°F. High temperature during fruit development results in varied size fruit of poor quality and shelf life, consequently reduced marketable yield. However, less data is available to reveal how heat stress modulates different physiological and biochemical attributes in blackberry leaves resulting in limited plant growth and fruit yield. This research has investigated the heat-induced effects on some physiological and biochemical attributes in blackberry leaves. The young blackberry plants (cv. Ouachita) were exposed to three temperatures i.e., 75°F (Control), 85°F and 95°F to determine the heat-induced morphological and biochemical changes in leaves. Heat stress caused alterations in leaf surface temperature (LST) and leaf angle (LA), while it has limited effect on leaf chlorophyll (LCI) content. Likewise, high temperature also caused changes in the activities of antioxidant enzymes, including superoxide dismutase (SOD), peroxidases (POD) and glutathione peroxidase (GPX). Heat stress also caused increase in oxidative damage in terms of high concentration of reactive oxygen species (ROS), including (O2- and H2O2).

Poster Presenter:

Cindy Lopez Ramirez, University of California, Davis

Title:

Five High-Yielding, Disease Resistant Strawberry Cultivars for Short-Day, Day-Neutral, and Summer-Plant Production

Abstract Summary:

Currently, in the strawberry industry there is a rising concern about the emerging and dispersal of strawberry diseases that are affecting productivity considerably, one

of them is Fusarium oxysporum, commonly known as Fusarium wilt. The UCD breeding program is focusing on developing cultivars with improved disease resistance and enhanced traits of relevance for the strawberry industry such as competitive yields and fruit quality. Although losses to this devastating disease have been mounting, susceptible cultivars are still being grown on 50% of the acres in California. To address this problem, the University of California, Davis has announced the release of five versatile, high yielding, long shelf-life, Fusarium wilt resistant cultivars: two for short-day, two for dayneutral, and one for summer-plant production. These cultivars have industry leading quantitative resistance to Verticillium wilt and Phytophthora crown rot, and some display resistance to Neopestalotiopsis, a fungal disease commonly seen in productive regions like Florida (US), Mexico, and other countries. These new cultivars produce marketable fruit yields up to 76% greater than commercial checks across coastal California environments.

Poster Presenter:

Julio Perez, University of Florida

Title:

Blackberries: The Underdog Among Small Fruits for Home Gardeners

Abstract Summary:

Small fruits hold a special place in home gardens, offering fresh produce in limited spaces and, in some cases, yielding fruit within the first year. But how popular are blackberries among homeowners, and can they serve as a viable alternative crop for home landscapes?

In 2023, a series of four workshops focused on small fruits—strawberries, muscadine grapes, blueberries, and blackberries—attracted a total of 119 participants. Each workshop provided attendees with a plant corresponding to the session they attended. Participant registration was as follows: strawberries (39), muscadine grapes (47), blueberries (21), and blackberries (12). Notably, the blackberry workshop had the lowest attendance.

Two years after the workshops, follow-up results revealed mixed outcomes for blackberry growers. Of the 12 participants, two reported that their plants had died, while another two stated their plants were healthy but had not produced fruit within the last year and a half.

These findings highlight the challenges and limited appeal of blackberries among small fruit growers, suggesting a need for further education on proper care and cultivation techniques. Future efforts will focus on understanding barriers to blackberry success and promoting this underappreciated crop in home landscapes.

Poster Presenter:

Savannah Phipps, Oregon State University

Title:

Genomic and Phenomic Technologies for Assessing Root Lesion Nematode (Pratylenchus penetrans) Resistance in Red Raspberry

Abstract Summary:

Genomic and phenomic technologies are enabling agricultural scientists to study and characterize the genetics of economically important traits with greater

efficiency. Examining and understanding resistance to Pratylenchus penetrans, a root lesion nematode (RLN), in red raspberry has proven to be a challenge due to the labor-intensive and destructive sampling methods needed to quantify nematodes in roots. This pathosystem presents a unique opportunity to test modern genomic tools for raspberry breeding and define the nature and underlying genetic control of RLN resistance or tolerance in red raspberry. A replicated field trial comprised of a diversity panel of 270 red raspberry genotypes from the PNW breeding programs and international genotypes from the National Global Germplasm Repository was established in 2022. To date, three years of biomass data and two years of RLN population densities and spectral data have been collected. Using whole-genome sequencing data, a genome-wide association study with be conducted with the available phenotype data in 2025.

Poster Presenter:

Haley Sater, University of Maryland Extension

Title:

Evaluating New Thornless Blackberry Cultivars and Trellis Systems Across Maryland

Abstract Summary:

Thornless blackberries offer significant potential for Maryland growers, but cultivar performance and management practices vary across the state's diverse conditions. We are evaluateing 11 thornless blackberry cultivars-Caddo, Celestial, Galaxy, Eclipse, Osage, Ouachita, Ponca, Traveler, Twilight, Von, and Zodiacat three University of Maryland research centers: Keedysville, Queenstown, and Salisbury. We are evaluating plant vigor, yield, fruit quality (size, flavor, texture, firmness), and seasonality. At one of our trial sites, in Salisbury, we are also investigates the effects of different trellis systems (V, T, and Rotating Cross Arm) on plant yield, harvestability, and fruit quality. Preliminary results from the cultivar tiral highlight differences in cultivar vigor and fruit characteristics. These findings will help to guide Maryland and other Mid-Alantic growers in selecting cultivars and trellis systems that optimize productivity and fruit quality under regional growing conditions.

Poster Presenter:

Edward Sikora, Auburn University

Title:

Neopestalotiopsis Leaf Spot and Fruit Rot of Strawberry in Alabama

Abstract Summary:

Neopestalotiopsis leaf spot and fruit rot is a relatively new disease to Alabama; first reported in the state in 2022. The disease was observed in six counties in the 2022-2023 growing season, eight counties in 2023-2024, and nine counties thus far in 2024-2025. Damage from the disease in Alabama has been negligible, with the exception of one field in 2022 where a heavily infected varietal block was destroyed to prevent spread of the pathogen to other varieties on the farm. Severe outbreaks

of Neopestalotiopsis have occurred in Florida and Georgia over the last five years. The common link among past outbreaks was the nursery sources from which transplants originated. The current situation concerning Neopestalotiopsis-infected strawberry plant material originating from Prince Edward Island and shipped to plug producers and growers in the U.S. has had a negative effect on strawberry growers in Alabama. There was an understanding that growers accepting material from that source should assume that plants would be infected with the disease, even if they looked clean and healthy. Growers in Alabama and other states in the southeast responded by either looking elsewhere for disease-free planting material, taking the year off from growing strawberries, or accepting infected-plants knowing an aggressive fungicide spray program would likely be necessary for the chance to have a productive crop. There have been a handful of growers in Alabama that were able to order and receive Neopestalotiopsis-free plant material from California. However, others producers in the state have accepted plants from infested nurseries and are now fighting the battle to keep the disease at bay. The disease has been detected on multiple commercial farms this fall, and reports suggest most farms accepting plants that originated from Canada are dealing with the disease. Growers have responded with an aggressive fungicide spray program this fall, and coupled with relatively dry conditions, have been able to keep the disease in check for the time being.

Poster Presenter:

Renee Threlfall, University of Arkansas

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Title:

Fruit Quality and Postharvest Storage of Arkansas Freshmarket Blackberries Grown on a Rotating Cross Arm Trellis

Abstract Summary:

Fresh-market blackberries (Rubus L. subgenus Rubus Watson) are commonly grown on T- or V-trellis systems, but the Rotating Cross Arm (RCA) trellis, which allows canes to be positioned parallel or perpendicular to the ground, offers a potential alternative for improving production. This study evaluated the performance of three blackberry cultivars (Ouachita, Sweet-Ark® Caddo, and Sweet-Ark® Ponca) grown on an RCA trellis at a commercial farm in Fayetteville, AR, during the 2023 and 2024 growing seasons. Blackberries were harvested into clamshells in triplicate on three dates per cultivar, with berries evaluated for marketability at harvest and after storage at 2 °C for 0, 7, 14, and 21 days. Marketable berries (fruit without damage or blemishes) were significantly higher in 2022 (92.79%) than in 2023 (83.68%), with unmarketable berries affected by factors such as anthracnose, red drupelet reversion (RDR), bird damage, poor pollination, white drupelet, and rain damage. Cultivar × year interactions were significant for berry weight (5.52-8.60 g), soluble solids (9.37-11.91%), pH (2.96-3.32), and titratable acidity (1.09-1.53%) at harvest. Sweet-Ark[®] Caddo had the highest soluble solids and pH and lowest acidity in 2022, though year had no consistent impact on composition at harvest for the other cultivars. Storage duration significantly increased leakage and decay of blackberries in clamshells across cultivars, though RDR remained low (<15.1%). At 21 days storage, Sweet-Ark® Caddo showed higher leakage (77.73% in 2022 vs. 10.60%

in 2023) and decay (57.28% in 2022 vs. 7.43% in 2023), while Ouachita and Sweet-Ark® Ponca demonstrated greater storage potential with less leakage and decay. This study highlights the potential of the RCA trellis system to produce high-quality, marketable blackberries and provides insights into cultivar selection for optimal postharvest performance.

Poster Presenter:

Renee Threlfall, University of Arkansas

Title:

Impact of Harvest Date on Flavor of Fresh-market Blackberry Cultivars

Abstract Summary:

Flavor (aroma and taste) is an important attribute of freshmarket blackberries (Rubus L. subgenus Rubus Watson). While the flavor of blackberries predominantly develops during ripening, it is also influenced by intrinsic and extrinsic factors. Fresh-market blackberries are often limited by inconsistent flavor and postharvest perishability, reducing consumer demand and market potential. This study investigated how harvest date and environmental conditions influenced the physical, composition, and aroma attributes of three commercial blackberry cultivars (Ouachita, Sweet-Ark® Caddo, and Sweet-Ark® Ponca) grown in Fayetteville, AR, during the 2022 and 2023 growing seasons. For these blackberry cultivars, 262 aromatic compounds from 12 classes were identified and quantified using GC-MS/MS. Increased rainfall and cooler temperatures during June and July 2023 positively influenced physical attributes of Ouachita and Sweet-Ark® Caddo but negatively impacted Sweet-Ark® Ponca's berry firmness and weight. In 2022, Sweet-Ark® Caddo had the highest total volatile content (2,991 µg/kg), with terpenes the most abundant $(1,018 \mu g/kg)$. However, in 2023, terpenes decreased (237 µg/kg), possibly due to increased rainfall or other environmental factors. Overall, the physical, composition, and aroma attributes of Sweet-Ark® Ponca were more consistent, whereas Sweet-Ark® Caddo and Ouachita changed significantly over harvest year and date. These findings highlight the variability in flavor and composition attributes of blackberries grown on a commercial farm across two growing seasons and demonstrate that cultivar stability differs significantly across years and harvest dates.

Poster Presenter:

Courtney Weber, Cornell University

Title:

Crimson Beauty: A New Early Season Primocane Raspberry

Abstract Summary:

'Crimson Beauty' is a new early season primocane fruiting red raspberry that starts off the "fall" season in late July in Geneva, NY. 'Crimson Beauty' was selected from a seedling population grown under high tunnels in substrate in 2017 and is best suited for production under high tunnels. It was tested as NY17-25 in trials. 'Crimson Beauty' produces large, glossy, bright red fruit with a very good flavor that has a nice balance of acid and sugar with 'brix as high as 13.2 when ripe. The cone-shaped fruit has small drupelets with a uniform shape and a firm texture that can be harvested when light pink in color. The canes of 'Crimson Beauty' are

relatively short, averaging approximately 1.5 m high, heavily branched, and self-supporting, similar to 'Crimson Treasure'. The canes carry a heavy crop load with a primocane season mean of 4.2 g and a maximum of 6.5 g. Its harvest finishes in late September just as 'Crimson Blush' begins harvest. The canes benefit from trellising due to the heavy crop load. The relatively small floricane crop has larger fruit (5.0 g mean) but smaller maximum size (6.0 g) and is produced from late June to late July under high tunnels in western NY. It would not typically be recommended for double crop production due to the shorter stature and branching of the canes. Field and tunnel observations suggest it is resistant to late leaf rust, powdery mildew and Phytophthora root rot and raspberry aphids with the original test plot planted in 2018 still productive under high tunnels in unfumigated ground with a history of raspberry production. Yield estimates exceed other early season varieties such as Autumn Britten, Polana and Polka in NY conditions. 'Crimson Beauty' has been tested extensively at Cornell AgriTech and with growers in New York and is commercially available for spring 2025 from North American Plants and PhyllaTech nurseries.

Poster Presenter:

Courtney Weber, Cornell University

Title:

Crimson Blush: A New Late Season Primocane Raspberry

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Abstract Summary:

'Crimson Blush' is a new late season primocane fruiting red raspberry that closes out the fall season in Geneva, NY. 'Crimson Blush' was selected in 2017 from a seedling population planted in the open field in 2016 in unfumigated soil with a history of raspberry production. It was tested in trials as NY17-35. Due to its late harvest season, high tunnel production is recommended to realize its full production potential in temperate regions. It produces large, light red fruit with a very good flavor that has a nice balance of acid and sugar with °brix as high as 12.0 when ripe. The cone-shaped fruit has a large, plump drupelets with a firm texture that can be harvested when light pink in color. The canes carry a heavy crop load on the top 1/3 of the cane with a primocane season mean of 4.8 g and a maximum of 7.1 g. It begins harvest in late September, as 'Crimson Beauty' and 'Crimson Treasure' are finishing harvest, and is still producing into late November to finish the season as the temperatures drop in western NY. The canes of 'Crimson Blush' are very tall, averaging approximately 2.4 m high, with a heavy panicle of fruit that needs significant trellising to support. Due to the tall canes, the floricane crop is similar in volume the primocane crop, but with somewhat smaller fruit (4.0 g mean; 4.6 g maximum) and is produced from late June to late July under high tunnels in western NY. This makes 'Crimson Blush' a good candidate for double crop and/or long-cane production. Field and tunnel observations indicate resistance to late leaf rust, powdery mildew and raspberry aphids, but only tolerance to Phytophthora root rot so that raised beds are recommended. Yield estimates greatly exceed other late season varieties such as Heritage and Crimson Giant in NY conditions. 'Crimson Blush' has been tested extensively at Cornell AgriTech and with growers in New York and is commercially available for spring 2025 from North American Plants and PhyllaTech nurseries and for homeowners in the Gurneys Seed and Nursery catalog.

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