

Shrubs from grower to garden

21 Meeting inventory challenges

JUNE 2023

25 Best low-water shrub selections

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41 Developing climate-ready landscape plants

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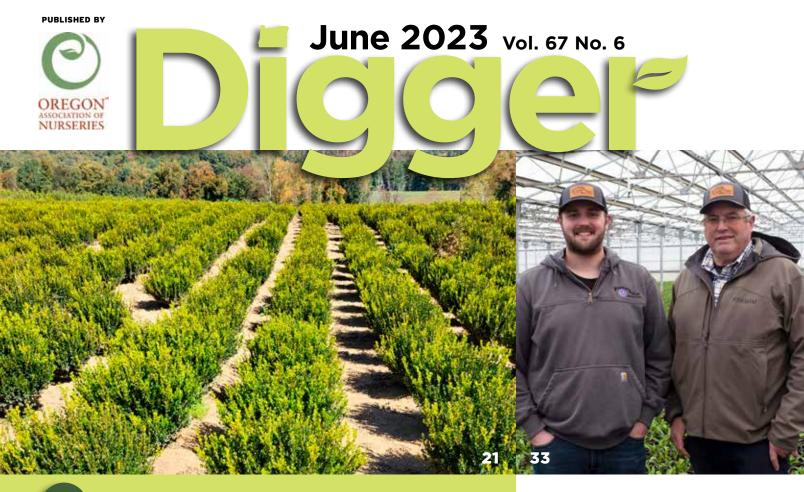
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FARWEST

19

Specimen shrubs that steal the spotlight

An important component of any garden is one or more well-placed shrubs as permanent focal plants. By Mike Darcy



21 Where are the shrubs?

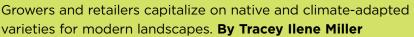
Growers face recession and inflation concerns amidst stock shortages. **By Erica Browne Grivas**



SPECIAL Farwest Show **Planning Guide**

Check out this year's seminars, speakers and special events.

25 High demand for low-water shrubs



33 Cutting back to get ahead

Advances in automated shrub trimming save an astounding amount of time and labor. By Emily Lindblom

ON THE COVER: Mahonia shrubs sprout golden-yellow floral clusters in early spring that are attractive to pollinators. BY PETER SZYMCZAK

THIS PAGE, LEFT: Field of Buxus 'Wintergreen' shrubs. COURTESY EASON HORTICULTURAL SERVICES THIS PAGE, RIGHT: Noah Fessler, left, and his father, Tom Fessler, in a greenhouse at Woodburn Nursery & Azaleas in Woodburn, Oregon. BY EMILY LINDBLOM

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PRESIDENT'S MESSAGE

Keeping our world 'Wonderful'

SpaceX recently conducted an orbital test flight of their Starship spacecraft. The tallest, most powerful spacecraft ever constructed, "designed to both carry crew and cargo to Earth orbit, the Moon, Mars and beyond," according to SpaceX.

The test lasted four minutes and the starship self-destructed before it was able to make it into orbit.

Was the test a failure? According to SpaceX officials, no. Data will be collected and analyzed to make corrections for future tests. These perceived failures inch them closer to achieving their ultimate goal, which is to establish colonies and communities beyond our planet.

Traveling to Mars and beyond is only part of the equation. Once people get there, the environment must be habitable. The standard definition for a habitable planet is one that can sustain life for a significant period. Based on historical data from our solar system, we know life requires liquid water, energy and nutrients (according to NASA).

Our Earth is the perfect mix: just the right distance from the sun, kept warm by its insulating atmosphere, protected from harmful solar radiation through its magnetic fields, and composed of the right chemical ingredients needed to sustain life, including carbon and water. As a result of this perfect alignment, here we are: existing!

Like Louis Armstrong, when I stop and observe life happening all around me, I too think to myself, "What a Wonderful World." It is our obligation and awesome responsibility to take care of this beautiful and perfectly placed planet.

The OAN and its membership acknowledge that climate change is happening both around the globe and here in Oregon. Pests and diseases that were mainly challenges faced in California are making their way north. Mountain snowpack over the years has been dwindling, putting pressure on our much-needed water supply, which in turn significantly impacts farms, fish and families. Roughly 45% of all carbon dioxide emitted by humans remains in the atmosphere.

On a global level, Oregon is responsible for just .14% of the world's total carbon emissions. Oregon is abundant in natural

Todd Nelson

resources and the nursery industry can be a huge player in the solution to many of our climate problems.

The nursery and greenhouse industry is the state's largest agricultural sector, with over \$1.37 billion in sales annually to customers in Oregon and the rest of the United States. In fact, nearly 80% of the nursery stock grown in our state leaves our borders — with over half reaching markets east of the Mississippi River. These goods are ecologically friendly, carbon sequestering and green in every way.

Trees and plants naturally reduce the amount of carbon in the atmosphere by sequestering carbon into their new growth. As a tree grows, the amount of carbon that is sequestered likewise increases.

In one year, an acre of mature trees absorbs the amount of carbon dioxide produced by a car driven 26,000 miles, according to the Arbor Day Foundation. A mature leafy green tree generates as much oxygen in a single season as 10 people inhale in a year.

Those in the nursery and greenhouse industry are the original environmentalists. What we grow has an even greater impact than merely adding aesthetics to landscapes.

Are we the cure for climate change? Not by ourselves. Currently there are studies and policies being developed at the state and federal levels by individuals who don't consider ag's benefits on the environment and economy.

The OAN is leveraging its resources and people to educate and inform these individuals on what it is we do. We fight destructive policy and advocate for commonsense strategies that allow us to operate in a way that truly makes an impact.

We live in a wonderful world. Working together as stewards, we can keep it that way. \bigcirc

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DIGGERMAGAZINE.COM JUNE 2023 7



CALENDAR

Spread the word about your event! Email details to Calendar@OAN.org.

JUNE 22 PORTLAND MEMORY GARDEN ANNIVERSARY CELEBRATION



Since opening in 2002, the Legacy Health Portland Memory Garden at Ed Benedict Park (10401 S.E. Bush Street, Portland, Oregon 97266) has provided a therapeutic space for persons living with dementia and their loved ones. To honor the healing garden's 21st anniversary (due to COVID-19 precautions, a 20th celebration was not held), a community gathering will take place from 11:30 a.m.-1 p.m. on Wednesday, June 22. Attendees are encouraged to bring a lunch, take a break in nature, and share pictures, stories and other memorabilia inspired by the garden. For more information, visit www.PortlandMemoryGarden.org and www.LegacyHealth.org/Gardens.



JULY 15-18 CULTIVATE'23

Join OAN in Columbus, Ohio for this year's Cultivate, presented by AmericanHort. The annual must-attend horticultural event offers educational and networking opportunities to grow your business, build your network and discover the latest green industry trends. For more information, visit www.CultivateEvent.org.



JULY 24-28 PERENNIAL PLANT SYMPOSIUM

The largest educational and trade show program devoted solely to herbaceous perennials in North America, this annual symposium is presented by the Perennial Plant Association. This year's unveiling of the Perennial Plant of the Year® will take place in Niagara Falls, Ontario, Canada. Visit **PerennialPlant.org** for more information.



JUNE 8 • DUFFERS CLASSIC GOLF TOURNAMENT

Convene on the greens for the annual golf tourney benefitting the Oregon Nurseries' Political Action Committee (ONPAC). Players will tee off at 8 a.m., Thursday, June 8 at **Stone Creek Golf Club** (14603 S. Stoneridge Drive, Oregon City, Oregon 97045). • Connect with fellow OAN members who are helping drive the voice of the nursery and greenhouse industry in Salem and Washington, D.C. For more information, visit **www.OAN.org/Duffers** or call **503-682-5089**.

JULY 27

MT. HOOD CHAPTER PITCH AND PUTT GOLF TOURNAMENT

Putter, rake, shovel or hoe — prepare to have a fun time at McMenamins' Edgefield Golf Course in Troutdale, Oregon. Take part in the "Tin Cup" long drive (marshmallow provided) and vie for the \$100 prize. Player packages are \$25 and include one ball and one beverage ticket. Sponsorships available! Contact Scott Ekstrom at 503-926-4321 or sign up at www.OAN.org/Events.



AUGUST 9–11 NURSERY/LANDSCAPE EXPO San Antonio, Texas, is the site for this annual expo presented by the Texas Nursery & Landscape Association. For more information, visit **www.NurseryLandscapeExpo.com**.

AUGUST 14-16 ISA CONFERENCE

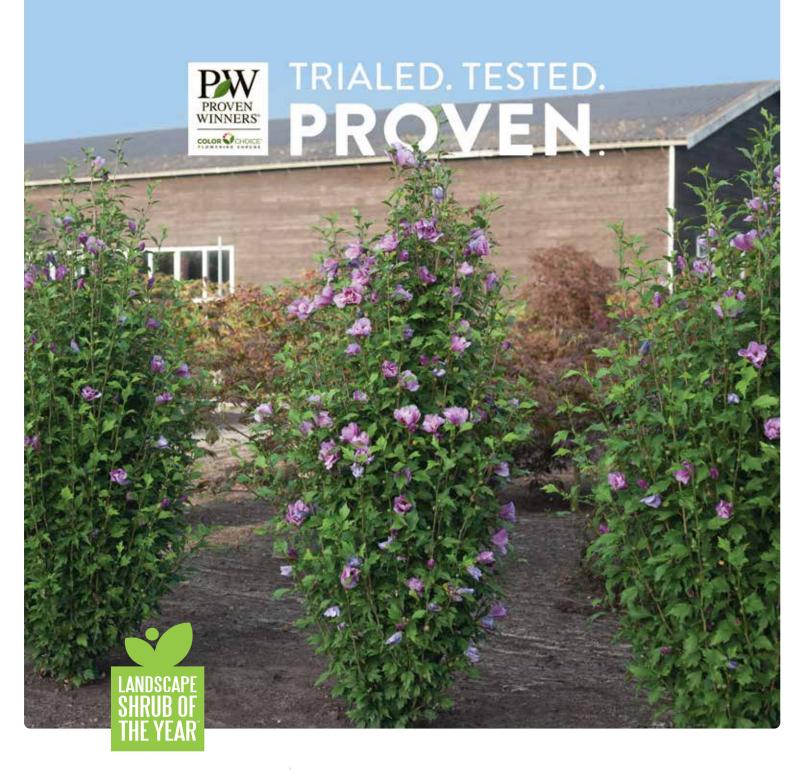
The International Society of Arboriculture will host its annual conference and trade show in Albuquerque, New Mexico. Join industry leaders from around the world and learn about the latest developments in equipment, technology and research. For more information, log on to **www.JSA-Arbor.com.**

AUGUST 23-25 FARWEST SHOW

The biggest green industry trade show in the West will take place at the Oregon



Convention Center in Portland, Oregon. The show, produced by the OAN and celebrating its 50th anniversary this year, attracts over 300 exhibitors and 4,000 attendees from across the world. For more information, visit to www.FarwestShow.com. (?)



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NORTHWEST NEWS

OAN members and chapters are encouraged to send in relevant news items, such as new hires, new products, acquisitions and honors. Email **News@OAN.org**.

KATIE TAMONY TO DELIVER FARWEST KEYNOTE ADDRESS

Katie Tamony, chief marketing officer for **Monrovia Growers**, will deliver the keynote address at the 2023 Farwest Show, the biggest green industry trade show in the West, taking place from August 23–25, 2023 at the Oregon Convention Center in Portland, Oregon.

Tamony's address, "How to See Differently," will take place 11 a.m.– noon on Wednesday, August 23 in Room C123 at the Oregon Convention Center. All Farwest attendees are invited to attend.

Tamony has more than 25 years of expertise in the lifestyle, leisure and horticulture industries. She has lead Monrovia's marketing team since 2020, and did so previously from 2014–2017 as well. Previously she was editor-in-chief of *Sunset* magazine and Sunset Books.

Throughout her career, Tamony has tracked trends to help companies prepare for the future. She has an intuitive sense of what drives consumer lifestyle interests and their relationships to brands.

"Many of us have spent years in our industry, and it's easy to forget what it's like not to know what we know," Tamony said. "It's also natural to fall into habits of seeing problems and patterns a certain way. But holding a 'beginner's mindset' can help us solve problems more effectively, adapt to change more easily, and actually create more original ideas. So how do we change our perspective and see things with fresh eyes? Looking at the familiar in an unfamiliar way can help us be better leaders and refresh our teams and our approach to our business. I'll use examples from throughout a career where I have been forced to be a 'beginner' operating at a high level."

Tamony started her publishing career as a copy editor, rising quickly to editorial director and then editor-in-chief of Time Warner/Sunset Publishing. She has also



held marketing and communications roles at Alluma (now One Degree), a national non-profit social enterprise that combines technology and policy to create better access to health and social services; and at the San Francisco Museum of Modern Art.

"We're thrilled to have Katie at Farwest," said Allan Niemi, director of events at the Oregon Association of Nurseries. "Her insights on market trends have positively impacted the growth of all sectors of our industry. Everyone will want to hear what she has to say about the future of the retail green industry."

To get a booth space, sponsorship opportunities or other questions, email **ANiemi@OAN.org** or call 503-682-5089. For more details on Farwest events, daily schedules, speakers and education seminars, visit **FarwestShow.com**.

NURSERIES REPEAT AS OREGON'S TOP AG COMMODITY

The greenhouse and nursery industry retained the top spot on the Oregon Department of Agriculture's updated list of the top 20 most valuable agricultural commodities statewide.

Greenhouse and nursery plants earned approximately \$1.32 billion in sales in 2021 — an increase of 10% over their value in 2020 and representing 22% of the total value of all Oregon agriculture.

An estimated 74% of Oregon's nursery products are sold outside the state, making it a critical traded sector for the state, ODA stated in its press release.

Cattle and calves came in second at \$676.2 million, up from \$587.8 million the previous year. Most animals are raised in eastern and southern Oregon, with Malheur, Klamath, Harney, Baker and Lake counties leading the way.

Grass seed increased two positions from the previous year to third in state rankings. Grass seed value in 2021 was \$639.2 million, up 28% from 2020. Most of the grass seed acreage is in the Willamette Valley, the "grass seed capital of the world."

In addition to this 2021 sales ranking just released, Oregon previously released its estimate of the state's nursery sales for 2022, showing that sales went up again to \$1.37 billion. The state's nursery industry is on a continued run of uninterrupted growth over the past decade, from \$745 million in 2013 to more than \$1.37 billion in 2022, an 83.7% increase.



DARCY ADDED TO OSU AGRICULTURAL DIAMOND PIONEER REGISTRY

Oregon-based gardening writer and broadcaster Mike Darcy, who writes a bimonthly column in *Digger* (turn to page 19 in this issue to read his latest column), has been inducted into the Oregon State University College of Agricultural Sciences Diamond Pioneer Registry.

The registry honors living people over the age of 74 who have made significant lifetime contributions to agriculture, natural resources, and either the people of Oregon, or Oregon State University. It is intended for "individuals who have pioneered in some area of Oregon's agriculture and natural resources, or have made innovative changes or performed public service that has helped make Oregon a better place to live," according to OSU.



In addition to his Digger column, Darcy broadcast his radio show, "In the Garden with Mike Darcy," for 35 years on KXL FM radio in Portland, from 1981-2016. In 1999, he started a TV show,

"In the Garden," on KATU-2 Portland. It ran until 2006. Mike also has organized the annual Plant Nerd Night consumer gardening event, which kicks off the season and recently celebrated its 20th year.

Darcy was nominated by Kym Pokorny, the longtime garden writer for The Oregonian newspaper (Portland, Oregon) and longtime Digger contributor, who now works at Oregon State University in Extension communications. "Mike has exposed Oregonians to an unending train of horticulture information going back more than 40 years, often calling on the help of OSU faculty," Pokorny stated in her letter of nomination. "Over the years he's been responsible for much innovation, including his pioneering TV and radio shows, Plant Nerd Night and his work on the Farwest show. Mike is an Oregon treasure and deserves to be recognized." >





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NORTHWEST NEWS

Prior to his writing and broadcasting career, Mike worked for Ortho for 25 years. He earned a degree in horticulture from the University of Arizona.

Other nursery industry figures who have been inducted into the Diamond Pioneer Registry include Verl Holden (2021), Jack E. Long (2018), Sandra Powell (2013), Wilbur Bluhm (2012), Donald Powell (2010), and prior to 2010, Bill Curtis and J. Frank Schmidt.

OREGON AG FEST SETS ATTENDANCE RECORD

Thanks to summer-like temperatures, this year's 36th annual Oregon Ag Fest had record-setting attendance, with more than 23,000 people attending the two-day event April 29–30 at the Oregon State Fairgrounds in Salem, Oregon.

The Oregon Association of Nurseries exhibited its Plant Something Oregon



booth, handing out copies of the Retail Nurseries and Garden Centers Road Map, which lists all retail and landscaper members. The



OAN also hosted a potting station featuring donated plant material from member nurseries. The Future Farmers of America lent their muscles and smiles, potting the plants and delivering them to the vehicles of festival attendees to take home and plant in their home gardens.

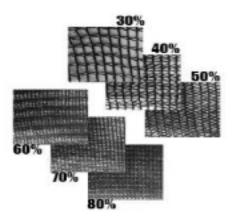
"We potted every last plant donated. It was awesome!" said Allan Niemi, director of events at the Oregon Association of Nurseries. "The FFA kids did an amazing job as usual, taking care of the plants and people. This is simply one of the best events there is."

The OAN participates every year at Oregon Ag Fest, which has celebrated

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YOUNGER GARDENERS, MEN PLAN TO GARDEN MORE IN '23

Retail garden centers might want to focus on younger gardeners and men, judging by the results of Axiom's 2023 Gardening Insights Survey. More than 80% of new gardeners pland to spend the same amount of money or more in 2023. The survey also found that more men (44%) than women (33%) plan to increase spending on gardening and time spent in the garden in 2023.

"Traditionally, we've all thought that our target demographic is the female homeowner," said Kathleen Hennessy, chief marketing officer at Axiom. "And more and more, we're seeing males getting into gardening and landscaping, and plants in general, which I think is pretty exciting for the industry."

And while the traditional age demographic of gardeners has skewed older, more than 75% of first-time gardeners and 85% of gardeners with two to four years of experience are planning to spend the same or more this year.

"One part of the survey we're really excited about is it seems like those people that have started gardening during the pandemic seem like they're hooked."

For more information, visit https:// axiomcom.com/2023-gardening-survey/.

SMALL BUSINESS LOANS AVAILABLE FOR DROUGHT-STRICKEN COUNTIES

The U.S. Small Business Administration announced a low-interest federal disaster loan program for small nonfarm businesses that experienced drought-related economic losses in the following nine Oregon counties: Crook, Jefferson, Deschutes, Grant, Harney, Linn, Marion, Wasco and Wheeler. By law, SBA makes Economic Injury Disaster Loans available when an agricultural disaster is declared. The application deadline is December 14, 2023.

Nurseries are eligible for SBA disas-

ter assistance in drought disasters. Small nonfarm businesses, small agricultural cooperatives, small businesses engaged in aquaculture and most private nonprofit organizations of any size may also qualify for an Economic Injury Disaster Loan of up to \$2 million to help meet financial obligations and operating expenses which could have been met had drought not occurred. However, businesses primarily engaged in farming or ranching are not eligible for SBA disaster assistance.

Eligibility for these loans is based on the financial impact of the drought \gg



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only and not on any actual property damage. These loans have an interest rate of 4% for businesses and 2.375% for private nonprofit organizations, a maximum term of 30 years, and are available to small businesses and most private nonprofits without the financial ability to offset the adverse impact without hardship.

To apply online, receive additional disaster assistance information and download applications, please visit **DisasterLoanAssistance.SBA.gov.** You can also call SBA's Customer

Service Center at 800-659-2955 or email **DisasterCustomerService@SBA.gov**. Those who are deaf, hard of hearing, or have a speech disability may dial 711 to access telecommunications relay services.

OREGON CONSIDERS FARMER MENTAL HEALTH PROGRAM

Farming is hard work. The chores never end, and something as simple as bad weather can mean financial disaster.

Studies by the U.S. Centers for Disease Control and Prevention find farmers are two to three times more likely to die by suicide than the general public.

That's why Oregon legislators are considering Senate Bill 955, which would provide state money to support a suicide helpline for people who work the land. The legislation would provide \$300,000 to link callers to an established helpline called AgriStress, which already operates in six states: Connecticut, Missouri, Pennsylvania, Texas, Virginia and Wyoming. Operators at AgriStress are trained to understand the importance of keeping farms in a family and the added stress of droughts and heat waves.

Jeff Stone, executive director of the Oregon Association of Nurseries, is tracking SB955. He said the \$300,000 cost is comparatively small. "This has the legs to pass," he said.

Passage is largely a question of whether there will be money available when the budget wrangling begins in earnest at the end of the 2023 Oregon Legislative Session. Oregon lawmakers must finish their work by the end of June. Georgia Clay (left), new plants manager at Monrovia in Dayton, Oregon, and Zen Landis, sales manager at wholesaler Little Prince of Oregon Nursery in Aurora, Oregon, were named to the 2023 40 Under 40 list of horticultural professionals by Greenhouse Product News magazine.



Announcements TWO OREGON GROWERS NAMED TO '40 UNDER 40' LIST

Zen Landis, sales manager at wholesaler Little Prince of Oregon Nursery in Aurora, Oregon, and Georgia Clay, new plants manager at **Monrovia** in Dayton, Oregon, were named to the 2023 40 Under 40 list of horticultural professionals by *Greenhouse Product News* magazine.

Those selected to the special section were nominated by their peers for achievements in their personal and professional lives. "Each person demonstrates superior leadership, creativity, compassion and innovative thinking," the magazine stated.

Clay represents Monrovia in videos and presentations both internally and externally for garden center customers and the gardeners who shop at them. She has worked with breeder partners and industry experts to implement successful grower trials, and sees new products and programs from beginning to end, starting with the trial phase, then buildup, and then finally launch, marketing and sales.

Landis joined Little Prince of Oregon in 2021 following a stint at the Oregon Association of Nurseries. She served as events and education manager for OAN, overseeing seminars at the Farwest Show and also curating the New Varieties Showcase and directing the Women in Horticulture networking event. She began her nursery career at the age of 15 as a cashier, and worked her way through the company as it expanded from one location to five.

CAROLYN BEGG JOINS EASON SALES TEAM

Eason Horticultural Resources announced the addition of Carolyn Begg to their national



sales team. An avid horticulturist, Begg has spent the last two decades servicing landscapers, wholesalers and garden centers in Canada and the U.S.

Eason Horticultural Resources is a national horticulture broker based in Ft. Wright, Kentucky, with sales representatives located throughout the continental U.S. Founded in 1993, EHR serves as a consultant and distributor to retail garden center growers, wholesale greenhouse growers and landscapers. For more information, please visit **EGRnet.com**.

MONROVIA CREATES NEW TAGS TO REDUCE PLASTIC USE



For decades, **Monrovia** has used an information-packed plant label in a booklet format. But this spring, the company is redesigning its labels to reduce the use of plastic material in tags by about 60%. The new design features simplified plant information and a QR code gardeners can use for more guidance online. The QR code leads directly to each variety's unique page on Monrovia.com, offering planting and care tips as well as usage inspiration and company history.

There will be two variations of the design for spring 2023: 2-gallon and largersized plants will feature a new flat, two-sided tag, and 1-gallon plants will now have a reduced-size, two-sided tag that does not hang down below the pot.

Now available in two-ounce packaging, Actinovate[®] Lawn & Garden is ideal for retail settings.



products will be distributed with a two-year shelf life, doubling the previous shelf life. Actinovate will now have one of the longest shelf lives of any product of this type, and requires no refrigeration, special handling or complicated storage guidelines.

"Part of helping consumers 'grow beautifully' is to also 'grow responsibly," says Jonathan Pedersen, president and chief executive officer of Monrovia. "Growing responsibly is not just a slogan. We are committed to reducing our carbon footprint over time. This change to our tags is an important step."

Sustainability has long been a priority for Monrovia. In the 1970's the company became the first major nursery to recycle irrigation runoff, drastically reducing water and fertilizer use. Monrovia is also a proud recipient of the Environmental Protection Agency's prestigious EPA Evergreen award, recognizing outstanding pollution prevention efforts.

This year, Monrovia is also undertaking a companywide assessment of its greenhouse gas emissions and establishing goals for reductions by 2030. The company is focusing on many areas of its operations, including research on reducing plastic in pots and testing biodegradable plastic materials, installation of energyefficient greenhouses and boilers to reduce fuel use, and increasing efficiencies in loading practices.

"Our goal is not only to improve our own practices but to add to our industry's positive influences on the environment," Pedersen said. "We're continuing to build a culture of sustainable practices at all of our nurseries."

ACTINOVATE EXTENDS SHELF LIFE TO TWO YEARS

Mycorrhizal Applications LLC, a distributor of biological fungicides for the horticulture industry based in Grants Pass, Oregon, announced that the Actinovate[®] brand of



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In addition, Mycorrhizal Applications announced the return of two-ounce packaging for Actinovate[®] Lawn & Garden. The 2 oz. SKU was extremely popular for home lawn and garden uses and ideal for retail settings.

"With the change to a two-year shelf life and the relaunch of the two-ounce Actinovate Lawn and Garden packaging, Actinovate now undoubtedly offers the most practical biological fungicide product line available to growers and retailers," said Blair Busenbark, sales and commercial marketing manager. "Actinovate[®] becomes much more practical as a retail product for garden centers to carry on their shelves, as well as an even more valuable tool for a professional grower's integrated pest management toolbox."

Actinovate is a unique biological fungicide based on the beneficial soil bacterium Streptomyces lydicus WYEC 108 and is used to combat fungal plant pathogens such as damping off, root rot, turf brown patch, gray mold, downy mildew and powdery mildew. Actinovate[®] SP is available in 18 oz. packages from most major horticulture distributors in the U.S., and is labeled for professional use in greenhouse, nursery, landscaping and other applications.

Actinovate[®] Lawn & Garden is labeled for home garden and turf use and is available in retail stores and garden centers across the U.S. in the new 2 oz. packaging as well as 18 oz. package sizes. Actinovate[®] AG has a broad and flexible label for use in multiple industries and is available in 5 lb. bags.

In Memoriam

JACKIE HANNON

The Oregon Association of Nurseries is saddened to report the passing of Jackie Hannon, the wife of former OAN



executive director Clayton Hannon. She passed away April 10, 2023 in Phoenix, Arizona after an illness. No services are planned. Whitney and Murphy Funeral Home in Phoenix was in care of arrangements.

Mrs. Hannon was born Jacqueline Hayden on June 28, 1935 to Harvey and Mary Hayden of Klamath Falls, Oregon. She graduated from Klamath Union High School and later married her high school sweetheart, Clayton Hannon.

Jackie was a full-time mom supporting her children by being an active school volunteer, Campfire leader and sports parent, sitting on many a bleacher watching countless track meets, baseball and basketball games. When she wasn't performing her mom duties, she was an avid supporter of her husband's career in association management with the Portland Rose Festival and the Oregon Association of Nurserymen, traveling with him and always being the gracious woman in the wings.

Her biggest joys included spending time with her grandchildren and watching them grow up, living in Gleneden Beach for 17 years, combing the beach for agates, and perfecting her many talents including jewelry making.

After a lifetime as an Oregonian, she and Clayton made the decision to move to Phoenix, Arizona, in 2019. Jackie and Clayton celebrated their 68th wedding anniversary just a week before her passing.

Jackie is survived by her husband, Clayton, at home; daughter, Lynda Tatum and her husband, Bill of Phoenix; son, Rob Hannon and his wife, Annette of West Linn, Oregon; three grandchildren; and five great-grandchildren.

DR. BERNADINE STRIK

The OAN is saddened to report the passing of Dr. Bernadine Strik, a berry specialist for Oregon State University Extension Service for 34 years, who died April 14, 2023 at age 60.

Born in Holland, Strik grew up in Australia and Vancouver, British Columbia, where her parents owned and operated a large retail nursery. She worked at her parents' nursery, became



enamored of horticulture and attended the University of Victoria, where she earned an honors bachelor's degree in botany and did her undergraduate thesis on rhododendron propagation.

Strik went on to earn a doctorate with distinction in horticulture from the University of Guelph in Ontario, Canada, at the age of 25. After graduation, she went to work for the OSU Extension and the College of Agricultural Sciences as a berry specialist and professor and spent her entire career supporting the industry.

Strik's innovative research, teaching and Extension outreach had a significant influence on the state's berry industry. The state's growers worked closely with Strik and benefited from her expertise.

In Strik's 34 years at OSU, blueberry acreage in Oregon jumped from 1,200 to 15,000 acres with large changes in production systems based on her research. Her landmark 14-year project on organic blueberry production — planting methods, fertilization, mulching, cultivar adaptation, weed control — helped drive an increase in Oregon organic acreage from

2% in 2006 to 20% in 2020.

In 2007, Strik received the American Society for Horticultural Science Fellow. In 2021, as she retired, Strik received the highest honor bestowed by the International Society for Horticultural Science for her industry-changing program on berries. The prestigious ISHS fellowship is presented to scientists who have made a significant impact on horticulture worldwide.

Strik met her husband, Neil Bell, in Canada in 1990. They married in 1994. Bell retired in 2022 from OSU Extension as a community horticulturist,

Outside of work, Strik and Bell were avid travelers, visiting other countries for pleasure and often professionally for collecting plants or sharing information. Sometimes their two daughters, Nicole and Shannon, traveled with them, and all four enjoyed hiking, especially challenging routes.

TERRY THORNTON

The Oregon Association of Nurseries is saddened to report the passing of Honorary Life member and past president Terry Thornton. A Celebration of Life will be held from 11 a.m.–2 p.m. (or later) on Sunday, June 25 at Hammerle Park, 1505 S.W. Lewis St., West Linn, Oregon.

Mr. Thorton passed away May 5, 2023 from complications of frontotemporal degeneration, or FTD, a type of dementia similar, but not identical, to Alzheimer's.

He was born in 1949 to Betty and Wilber Thornton in Phoenix, Arizona. Because of Terry's health, the family moved to Cathlamet, Washington when he was in grade school. He graduated from



Wahkiakum High School in Cathlamet in 1968, then attended Lower Columbia College in Longview, Washington. There he met his future wife, Martha Root. He transferred to Portland State University and graduated with a bachelor of science degree in business in 1973.

He and Martha got married in 1974. She said he had to have a "real" job before they got married, so he



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reluctantly took a job as a shelf stocker in the supply department of Alfred Teufel Nursery. Up to then, he'd had no intention of working in an ag-related field.

In his time at Teufel Nursery, Terry rose to outside salesperson and department manager. He later took jobs at Nursery Supply, Gage Industries, Western Farm, and finished his career at Nursery Connection, which was sold to Simplot. His specialty was nursery containers and other hard goods.

Terry was a devoted contributor to the Oregon Association of Nurseries, serving in a variety of chapter offices. He became the first member of the allied trades to serve as president of the association and was presented with an Honorary Life Membership for his contributions.

Terry loved restoring cars and owned two MGs. The development of his FTD robbed him of the physical and mental capacity to finish restoration of the 1951 MG he'd planned as his retirement project. He enjoyed visiting the Oregon Coast but as he declined further, his regular trips to the coast ceased due to his challenges.

Terry was preceded in death by both of his parents and by his brother, Charlie. He is survived by his wife, Martha, at home; his son Eric, his daughter, T.J., and his granddaughter, Eleanor, who was the delight of his life. Even when he became non-verbal, Terry relished her jokes, her beginning reading skills, and her delight in showing him her budding gymnastic skills.

Terry decided, along with his family, that his brain should be donated to Oregon Health and Science University Brain Institute, in the hope that others one day will be spared the agony of FTD. Cremation was facilitated by Cornwell Colonial Chapel in Wilsonville.

The family has requested no flowers due to allergies in the household. Because both T.J. and Martha worked with lowincome students, the family suggests paying off a school lunch debt or paying for a field trip for a student who couldn't otherwise afford it. School supplies for T.J.'s classroom may be brought to the Celebration of Life. C

Specimen shrubs that steal the spotlight

OST GARDENS have a diversity of plants, usually with a representation of at least one or two categories. This would include annuals, perennials, shrubs, vines and trees. In the urban gardens of many homeowners today, there may be fewer trees and more shrubs due to limited space.

Sometimes the distinction between a shrub and a tree is very subjective, but usually a shrub will be shorter than a tree with multiple branches. Of course, this is not a hard and fast distinction because some trees can also be quite short and have multiple branches.

Using the above definition of a shrub, here are five shrubs that have commanded attention in my garden. None of them have needed any control measures for insects or diseases. They all survived the heat of last summer and the cold of this past winter and are looking good in our cool, very wet spring. Hopefully, one or more of these plants will be new to some gardeners and demand attention in the retail garden center setting, too.

Tasmanian pepperberry

Sometimes referred to by the common name of Tasmanian pepperberry or mountain pepper, *Drimys lanceolata* is an evergreen shrub with red stems. There are clusters of white flowers in late spring, but the real attraction is the red stems. The stems are red throughout the year and provide a nice contrast to the dark green leaves. The specimen in my garden is probably 25 years old and is planted in a sunny location. It is about 6 feet tall and wide. I have done minimal pruning on this shrub.

The leaves have a hot pepper taste and can be chopped up and used in salads. While this shrub is attractive all year, the red stems are particularly showy during the winter months when green is the dominate color in the garden.

Edgeworthia

For late winter fragrance, *Edgeworthia chrysantha* is hard to beat. This is a relative of *Daphne* and has a similar fragrance. If you were just walking by it in bloom, it would be difficult to distinguish its fragrance from the common daphne.

This deciduous plant has large leaves like a rhododendron and is sometimes called the Chinese paper bush because paper can be made from its bark. The silver-colored buds open to yellow flowers that appear in clusters at the tips of the



Left: Close-up of the stunning, scented flower of *Edgeworthia*. PHOTO BY MIKE DARCY Right: Paper bush makes a grand statement in the garden. COURTESY WOODIES GARDEN GOODS



MIKE DARCY

Head "plant nerd," longtime speaker, host of gardening shows on radio and TV, and author of the In the Garden email newsletter. You can reach Mike or subscribe to his newsletter at **ITGMikeDarcy@Comcast.net.**

branches. *Edgeworthia* has a unique way of branching because the branches emerge in a group of three and form a triangle.

About 20 years old, the specimen in my garden does receive some hot summer sun and the leaves quickly wilt but bounce back in the shade or with irrigation. While I have seen plants growing in full sun, some afternoon shade would be beneficial.





Left: Close-up of the spectacular red stems and edible leaves of Tasmanian pepperberry. PHOTO BY MIKE DARCY

Right: Tasmanian pepperberry is deciduous and deer-resistant, maturing to 6 feet tall and wide. COURTESY WHITE FLOWER FARM



Camellia

Despite our cool rainy spring, this has been a stellar year for camellias. While most of us are familiar with the large flowering types, there is another type that has dangling, pure white, small fragrant flowers. Winter-blooming *Camellia transarisanensis* is new to me and a superb looking shrub. It has an airy growth habit and looks as though it would make a good plant for an espalier.

My neighbor's plant is situated among some other shrubs and under a dog-

WHAT I'M HEARING BY MIKE DARCY

Fabulous flowering shrubs. From left to right, the stunning color of early leaf growth followed by profuse flowers of *Camellia transarisanensis*; the ruby red flowers of *Illicium* 'Woodland Ruby' (center) and *Calycanthus × raulstonii* 'Hartlage Wine'. PHOTOS BY MIKE DARCY



wood tree, so it is protected from the hot sun and wind. It is about 8 feet tall and the new growth has stunning bright red leaves. I was so impressed that last year I bought my own plant. It is in a protected location, and it came through the cold winter with no damage. This would be an outstanding plant in a woodland garden setting or an espalier in a shady location.



Anise tree

Illicium 'Woodland Ruby' (anise tree) has been in my garden for one year. The flowers were what attracted me to this shrub and the blooming season was much longer than I had expected. From late May through the summer, there were flowers.

While the name 'Woodland Ruby' would indicate that the flowers are red, I



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would consider them more of a dark pink. One reference said that the flowers were shaped like starfish, but I would have never thought of that resemblance.

In just one year of growth, the specimen in my garden has doubled in size and is now about 4 feet in height. It seems to do better with some shade from the hot afternoon sun and a soil rich in organic matter.

Calycanthus

Calycanthus \times raulstonii 'Hartlage Wine' has maroon, wine-colored flowers, and it is one of the most talked about plants in my garden when it is in bloom. It is rare that we see flowers of this color and when the plant is in full bloom, late spring to early summer, the flowering is profuse.

It is a very vigorous growing plant and often will need some pruning for space considerations. This *Calycanthus* does well in full sun and it has never had any winter damage. Give it room to spread: my plant is probably 8 feet tall and equally as wide, and I prune it every year.

Shrubs give focus

An important component of any garden is one or more well-placed shrubs as permanent focal plants. Garden centers should provide customers with creative ideas regarding shrub placement, companion plants including other shrubs, ground covers or summer-flowering annuals.

Shrubs that are a little bit out of the ordinary, like the ones mentioned here, give gardeners a reason to keep patronizing their local garden centers. Gardeners are always open to planting beautiful, different plants in the garden. O

Field of 24-30-inch and 30-36-inch Buxus microphylla 'Wintergreen'. COURTESY EASON HORTICULTURAL RESOURCES





Scan QR code to connect with 8 nurseries that carry this plant

Growers face recession and inflation concerns after

pandemic depletes stock and strains availability

BY ERICA BROWNE GRIVAS

HE PANDEMIC BROUGHT

unexpected havoc to the nursery trade, just as it did to the rest of the economy. Strong sales volumes caused shortages and supply chain issues in all nursery sectors including shrubs.

That in turn drove wide-ranging ripple effects that customers and growers are still feeling.

The good news is, the strong pandemic-era demand looks like it's taken root: 62% of 1,300 respondents said they planned to plant more in 2022 than 2021, according to Axiom's 2023 Gardening Insights Survey.

So, how are growers adapting to evolving conditions, and what lies ahead?

A 2022 national report by Floridabased landscape materials seller GoMaterials predicted, "As the consumer price index reaches unprecedented levels, and the labor shortages get worse, the horticulture and landscaping industry will be heavily impacted."

Shortages, it said, are causing nurseries to scramble for stock and partner with new sources, increasing logistics and prices, shrinking profit margins and potentially creating a cycle of future supply holes.

Among trees, perennials, shrubs and ground covers, shrubs made up 25% of the plant shortages in the South and 10% in the North. *Myrica cerifera, Ilex vomi*-

toria and *Raphiolepis indica* shortages were classified as "severe" in the South, especially in 3- to 7-gallon pot sizes.

What's driving demand?

Multiple factors are feeding into the demand, beyond the often-cited 18 million new gardeners stuck at home in 2020. These include increased multifamily housing construction, as well as pressure from water conservation district mandates for drought-tolerant plants.

On the production side in 2022, labor was harder to come by. Inflation spiked fertilizer costs by 100% and fuel costs by 50%. At the same time, a plastic resin shortage made it harder — and costlier — to pot up plants. That's not including the cost of plant material itself, which was up 20–27% for scarce commodities. The intense demand forced many growers to choose between selling a plant that wasn't up to size, or refusing orders to save stock.

"2020 was a huge spike; the demand was really off the charts," says Barry Gregory of **Kraemer's Nursery**, a large wholesaler based in Mt. Angel, Oregon. "Like everybody else, we scrambled and probably sold plants way before we would normally consider them ready to keep up with demand, at the same time backfilling as much as possible."

"During the pandemic, we certainly saw that our sales went up and over what many had forecasted," said Ken McVicker, sales and marketing manager of one of Oregon's largest growers, **Woodburn Nursery & Azaleas** in Woodburn, Oregon. "We too found ourselves totally sold out of inventory. Inventory remains relatively tight. We've seen a change this year with not being sold out like during those two years, but we are still sold down," McVicker said. "We have a little bit of inventory now going into spring season, which I'm very happy about — it lets us help fill customers' needs in-season."

One constant in the growing industry is that weather rules the season.

"You can take the economy, the pandemic and all of those things, and the weather is still king," Gregory said.

"We are still seeing strong demand overall. The big caveat to that this year is weather. In talking to customers across the country, everybody comes back to if we have good weather, we're going to have a good season," McVicker said.

"Screening and hedging material is still in very high demand, while flowering shrubs remain strong."

Faced with fluctuating markets, each grower faces constant calculations affecting the future of their business and employees.

Working with what you have

McVicker said Woodburn Nursery & Azaleas is working within its current structure to adapt to market pressures.

"Labor costs are going up, government regulations are putting pressure on agriculture, and it's difficult to increase your property, so we are looking to maximize the strength of our current team members. We are asking, 'How can we capitalize on tech automation and not increase our acreage? How can we maximize the footprint we are working on and minimize the impact of regulation and overtime laws that are happening here in Oregon?"

Growers are taking various approaches to managing all this.

Acer palmatum 'Twombly's Red Sentinel' COURTESY R.P. TUTHILL AND ASSOCIATES





Scan QR code to connect with 12 nurseries that carry this plant "It varies from grower to grower," said broker Michael Pezzillo of **Eason Horticultural Resources**, a national brokerage based in Kentucky. "You have some who restrict or manage sales to ensure they have the same product year to year, while others have dipped into future crops. So, you are still seeing some producing material not up to normal standards and selling that because some customers are willing to take material that is not up to size."We are also seeing growers reduce the number of SKUs to focus on their top sellers," Pezzillo added.

Gregory, at Kraemer's, noted that he'd rather gamble by growing too little than too much. "If you sell what you grow, you'll probably make money at it, but if you throw it away, it's pretty painful," he said.

Thanks to a soggy spring in 2022, Kraemer's had to toss roses that didn't bloom until after the lucrative spring rush was past. "It was so cold and wet, the crop was late. By the time they looked great the season was over, and the market and demand had passed."

Pezzillo said last winter's protracted freeze hit some areas hard, too. "In December there was a freeze that covered a large swath of country, dipping to 19 degrees in Florida," he said. "We are seeing some holes in supply because of it."

Sourcing larger size material "continues to be a challenge, because those are the sizes the landscape trade is looking for," Pezzillo noted. He said skip laurel (*Prunus laurocerasus* 'Schipkaensis') has gotten especially scarce, as people scoop up quantities for privacy hedging and border edges.

As far as categories, his customers continue to ask for columnar and compact varieties that fit into smaller properties, patios and side yards.

Shades of recessions past

Phin Tuthill is a sales representative for R.P. Tuthill & Associates, a Pennsylvania-based brokerage representing multiple Oregon growers. He noted many growers didn't make it through the recession of 2008–12, and those who did are hunkering down versus expanding. That of course affects supply, even now.

"So many people cut back so far," he said. "Probably the hardest hit were the liner growers, because a lot of people weren't buying because they weren't selling the stock they had. ... A lot of those guys never made it through the downturn, and now the growers have fewer liner buyers to choose from and they may be only half to two-thirds as big as they were. Today, fears of another recession are combined with a high inflationary period. "A lot of these growers that got hurt by the recession can't stick their necks



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WHERE ARE THE SHRUBS?

Prunus laurocerasus 'Mariblon' COURTESY R.P. TUTHILL AND ASSOCIATES



out too far," Tuthill said. "If the economy goes out again, they can't afford to make it through. They are using equipment longer, things that should have been retired. Now if they are replacing them prices are higher because of demand."

Tuthill echoed the strong desire for large-scale evergreen hedging plants like arborvitae, *Cupressus leylandii* 'Gold Rider' (Leyland cypress) and *Cryptomeria*.

"The shortages are mostly the things that are slower growers. The quicker growers, they make up faster. They tend to not be in short supply. For the big screening plants — especially larger sizes, probably 6–8 feet and up – the demand has gone through the roof. So many people were doing staycations they wanted privacy in the yard," he said.

The question is, when customers want those sizes, should they expand them? Reserve stock for next year? Growers have a lot of considerations, and they risk their future and those of their employees.

"By holding onto it longer you're taking chances and part of your product may not make it through winter. As the plant gets bigger you need bigger equipment to carry heavier plants. You have to wonder, is there going to be an ice storm? Are the locusts going to come?"

New house, new garden

Jim Simnitt of **Simnitt Nursery** in Canby, Oregon, said demand remains vibrant after peaking during the pandemic. He noted the nursery's fortunes often align with the housing market, as people set up their foundation plants and gardens for new houses.

"We ship all over the country to 35 states, and it's been pretty solid," Simnitt said. In fact, demand was stronger later in the season than usual, possibly because of landscaper backlogs, he guessed.

"We definitely have put more effort into container production," he said. "We are both field and container production, so this way we could ship longer into the season. We've added more container yards and more hoop houses, and we like the switch."

He said people are looking for multiple-interest shrubs with color and impact in more than one season, like daphne and gardenia for fragrance and evergreen foliage.

Looking ahead

Among the U.S. markets, the Southeast wakes up first, giving a glimpse into the moving target that is the future forecast. So far, growers are optimistic.

"We are certainly seeing that in the Southeast, where they tend to have good gardening weather earlier. And if that's any indication, we will have a strong spring," McVicker said.

Pezzillo has also seen positive signs. "Reading early reports, the season has started off strong in the Southeast. I was just talking to a wholesale nursery in North Carolina, and they said the demand has been very strong, that customers have been popping out of the woodwork."

Erica Browne Grivas is an award-winning journalist and gardener pushing zone boundaries in Seattle, Washington. She can be reached at EBGrivas@Gmail.com. Acer circinatum (vine maple) fits in sun, shade and in the understory, COURTESY EGARDENGO.COM





Scan QR code to connect with 36 nurseries that carry this plant

High demand for low-water shrubs

Growers and retailers capitalize on native and climate-adapted varieties for modern landscapes

BY TRACY ILENE MILLER

Mahonia shrubs sprout goldenyellow floral clusters in early spring that are attractive to pollinators.

BY PETER SZYMCZAK





Scan QR code to connect with 31 nurseries that carry this plant

N THE 1980S, the utility Denver Water coined the term "xeriscape" by combining the word "landscape" with the Greek prefix "xero" for "dry." A niche movement was born.

But the use of low-water shrubs and plants was at the time predominantly limited to regions with naturally arid climates, like Colorado. With droughts intensifying in severity, duration and extent across the country, a shift is occurring in the plant world today. The demand for droughttolerant landscaping has surged not only in arid regions, but also in areas previously considered less susceptible to drought, like the Pacific Northwest.

Low-water plants constitute a large subset of the horticulture world. Previously, we focused on popular lowwater perennials, grasses and sedges (see "High times for low-water plants" in the March 2023 issue of *Digger*). This time we'll highlight low-water shrub varieties that are popular because of their beauty, utility and viability as sustainable options.

Low-water shrubs are leaving a lasting impression on the market due

to their adaptability and diverse range of sizes, forms and shapes. According to the U.S. Environmental Protection Agency, outdoor water use accounts for around 30% of total household water consumption in the United States, and over 50% in arid regions.

As the demand for water-efficient landscaping continues to grow, it is expected that low-water shrubs will further solidify their position in the market, offering selections that meet the market demand for plants that prioritize water conservation.

Sustainable natives

Because Acer circinatum (vine maple, USDA Zones 4-8, to 20 feet tall) is often listed as a large shrub/small tree, it earns a place in the drought-tolerant landscape. A deciduous Oregon native, it fits in sun or shade, and in the understory.

It's one of the few multi-stemmed plants for dry or shady areas, and it has brilliant red leaves in the fall, said Judy Alleruzzo, houseplant and perennial buyer at Al's Garden & Home.

"A certain percentage of customers want to have more natives in their gardens, and I think it is good to have both (native and cultivated) trees and shrubs," Alleruzzo said. "Late winter and spring is when they shine, and the other plants that are cultivated, they shine in other parts of the season. Natives understand winter wet and summer drought."

Arctostaphylos (manzanita) is valued for its heat and drought resilience and good looks throughout the season, said Greg Shepherd of Xera Plants, a Portland, Oregon-based nursery that specializes in climate-adapted plants.

"They are iconically western and thrive no matter how hot. With over 25 varieties, there is something for everyone in the mix," he said.

Arctostaphylos × 'Austin Griffiths' (USDA Zone 7, 9 feet high by 7 feet wide) is "one of the very best garden manzanitas," Shepherd said. It reaches a small tree form and is appreciated by hummingbirds finding its copious pink

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Ceanothus (California lilac) is a large genus of native shrubs. It is a hardy evergreen encompassing excellent varieties such as the fast grower *C*. *thrysiflorus* 'Victoria' (USDA Zone 8, 10 feet tall by 10 feet wide) and the denser, compacter 'Skylark' (USDA Zone 7, 1–2 feet tall by 2–3 feet wide) with yellow variegated leaves, said Darren Morgan at retailer **Shonnard's Nursery, Florist and Landscape**, located in Corvallis, Oregon.

"All of these California lilacs are evergreen, and they bloom heavily in the spring and often again more lightly in the fall," Morgan said. "The blue flowers are lightly scented and very attractive to bees of all sorts." Shonnard's also sells a lot of *Ceanothus impressus*, Morgan said, which is not as hardy in Oregon.

Mahonia is successful for dry shade once established, and offers year-round interest, with budding and blooming in winter, and evergreen upright, spiky (deerresistant) foliage. For a lighter texture and compact behavior, Alleruzzo points to *Mahonia eurybracteata* 'Soft Caress' PP20183 (USDA Zones 7–11, 3 feet high and wide), winner of the 2015 Plant of the Year at the Chelsea Flower Show in London, with its upright bright yellow flowers over slender long leaves.

For a dramatic and large focal point, $Mahonia \times media$ 'Charity' (USDA Zones 7–10) can get to a statuesque 10 feet tall and wide, offering structure at the back of the garden or for a "pokey" hedge, Alleruzzo said. It bears multiple spikes of fragrant golden blooms in December through February, followed by deep purple–blue berries in late summer and fall that attract birds.

The native *Ribes sanguineum* (red flowering currant, USDA Zones 5–8, 8–10 feet tall and wide) is multi-stemmed and an early bloomer, from late winter to early spring, with cascades of flowers and distinct lobed, toothed leaves. The bloom time can be staggered by placing in both sun and shade. *R. sanguineum* 'King Edward VII' is an old and popular variety, Alleruzzo said, with darker red blooms







Eternal Fragrance daphne (Daphne × transatlantica 'Blafra' PP18361) COURTESY SIMNITT NURSERY

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that are pollinator magnets, followed by blue-black berries.

Fragrant and flowering

Daphne × transatlantica 'Blafra' PP18361 ('Eternal Fragrance', USDA Zones 5–8, 3 feet tall and wide) is Shonnard's No. 1 selling shrub.

"When you hear *Daphne*, most people think of the broader-leaved partial shade lover that isn't so drought tolerant, but the genus contains numerous plants from arid parts of Europe and Asia Minor, and many hybrids among them have been made. 'Eternal Fragrance' wins hands down over other types for being consistently evergreen in western Oregon, and for its flowering — essentially supporting continuous production of pleasantly fragrant, mostly white flowers starting as early as late April and



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kelsey.dean@trlcompany.com P 503.951.3929 often continuing into October. It's one of the longest bloom periods of any shrub," Morgan said.

Grevillea (spider flowers), a native to Australia, is a good example of finding native plants in other parts of the world with similar growing conditions to ours that fit well in the United States. They "are always in demand due to a long season of showy exotic flowers and extreme drought and heat resistance," Shepherd said.

Grevillea × 'Neil Bell' (USDA Zones 7–9, 8–10 feet tall and wide), named for the seedling found by the Oregon State University researcher, blooms May through August with striking reddish flowers, and is evergreen, deer resistant and loved by hummingbirds. Some of the lower-growing cultivars like 'Leanne' or 'Pink Lady' are good options for those with less space, Shepherd added.

Grevillea is one of many in the lowwater category where customers need guidance. "Especially with the new gardeners, the COVID gardeners, it is up to us to educate them that the plants are drought tolerant, but not in the first season," Alleruzzo said. And that goes especially for customers new to the area, she said, who need to shift to a rainless summer mindset. This education is important for success with low-water plants.

Oemleria cerasiformis (Indian plum, USDA Zones 6–10, 8–20 feet tall by 8–15 feet wide) is one of the first plants you'll see pushing bright green leaves in spring, Alleruzzo said. It has a shrubby shape, blooms late winter and early spring, which feeds pollinators, grows purple berries, which feed wildlife, and finishes with bright fall color.

Olea europaea 'Frantoio' (European olive, USDA Zones 7–10, 20 feet tall by 10 feet wide) is one of the hardiest, and therefore most successful, olive trees in the Pacific Northwest. With silvery and fine-textured evergreen foliage that needs no supplemental watering after the first year, it fits well into small urban gardens, Shepherd said.

It is a good example of a small tree that requires low water and fit



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Here is a list of the plants mentioned in this article:

- Acer circinatum
- O Arctostaphylos
- O Ceanothus thrysiflorus 'Victoria'
- **O** Ceanothus thrysiflorus 'Skylark'
- Oceanothus impressus 'Victoria'
- *Opaphne × transatlantica* 'Blafra' PP18361
- Omega Series Content and Co
- 🔾 *Mahonia × media* 'Charity'
- 🔾 Oemleria cerasiformis
- 🔾 Potentilla fruticosa

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QRibes sanguineum 'King Edward VII'

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HIGH DEMAND FOR LOW-WATER SHRUBS

Ribes sanguineum 'King Edward VII' COURTESY AL'S GARDEN & HOME



into urban settings, not getting too tall for power lines and useful as a screen. And because they take pruning well, they can be controlled, maintaining the size of a large shrub.

Potentilla fruticosa (bush cinquefoil, USDA Zones 3–7, 2–4 feet tall and wide) is a popular plant that Morgan sees playing even a greater part in landscapes as customers become aware of its tough characteristics, native status and bloom explosion, even without being evergreen.

As customers continue to expand their palette of low-water plants, "I think that we'll see more willingness to step outside of the traditional top sellers and explore the fuller range," Shepherd said. "Natural plant adaptations such as bulbs and similar summer-dormant plants will get some fresh attention, as will deciduous plants that provide excellent performance in all regards except winter interest." ©

Tracy Ilene Miller is a freelance writer and editor who covers several topics, including gardening. She can be reached at TMillerWriter@Gmail.com.



cutting back to get a head

Advances in automated shrub trimming save time and labor

BY EMILY LINDBLOM

ITH ITS WHEELS stretched 60 feet apart, a mowing machine makes its way over multiple rows of rhododendrons, leaving them uniformly trimmed on top. Powered by only one person riding on top of it, this machine gets the work done quickly, saving large wholesale grower **Woodburn Nursery & Azaleas Inc.** (Woodburn, Oregon) time and money on labor.

The machine, built by Woodburn's Nursery Manager Craig Hopkins, is used to trim more than 100 acres of plants at the nursery. A second machine at the nursery runs autonomously with one person monitoring it. It uses GPS receivers to know exactly where the center of each plant is, so it can prune the sides evenly.

"As far as we're aware, it's the first machine of its kind in the world," said Noah Fessler, representing the third generation at Woodburn Nursery & Azaleas. "We talked about this for five years before the technology and the builder in Holland (Lommers) was ready to put it together."

Woodburn Nursery & Azaleas uses a pot-in-pot system, meaning potted

plants are placed inside stationary pots in the ground, allowing them to be easily removed and harvested at any time of year.

The company tracked the GPS coordinates of each grounded pot by flying drones over the nursery and using an algorithm to find the center of each pot.

"We can lay that out into a software program and basically just give this machine the raw coordinates of it," Noah Fessler said. The GPS receivers allow the machine to run on its own, knowing the location of the plants and where to use its bladed arms to prune them.

According to Noah Fessler, it would take 20 people per day to keep up with this machine manually. It's primarily used to trim the sides of taller plants like *Thuja plicata* 'Green Giant', *Thuja occidentalis* 'Smaragd' (emerald green arborvitae) and *Prunus laurocerasus* 'Schipkaensis' (skip laurel). Eventually, Fessler plans to switch out the machine's blades for others that can trim different angles for a variety of cuts.

"We have a vast area here that all needs pruning," he said. "We take a lot of our workforce to dedicate those resources to it."

Labor savings

While the industry faces current challenges of labor shortages, the rising cost of existing labor and competition in the market, automation is not new to Woodburn Nursery & Azaleas.

"My parents were very aggressive in that arena 40 years ago," said Tom Fessler, company president and Noah's father. "That's been part of our thought process the whole time." He added that his parents bought one of the first potting machines by Gleason Industries in Oregon. "They were always looking for ways to improve efficiency."

Now, wholesale growers like Woodburn Nursery & Azaleas continue to look for ways to meet rising costs of production. Noah Fessler mentioned Oregon House Bill 4002, which went into effect at the start of 2023. It requires that agricultural workers be entitled to overtime pay.

The overtime requirement is being phased in over time. The threshhold is 55 hours in 2023 and 2024, 48 hours in 2025 and 2026, and 40 hours in 2027 and beyond.

CUTTING BACK TO GET AHEAD

"We have to tighten up where we can, and pruning was a big thing to go after," Noah Fessler said.

The smaller plants at the nursery that aren't yet ready for the grounded pots are pruned by moving through a conveyor belt trimmer built by Wiesner Metal Fab in Brooks, Oregon.

Kraemer's Nursery, a large wholesale grower based in Mount Angel, Oregon, uses the Wiesner trimmer to run its potted plants through the machine out in the field. While one person steers the machine, another employee picks up the pots and feeds them into the machine.

A conveyor spins the pots as they go through, and internal blades cut the tops and sides. The finished product comes out the other side, and another employee takes them out.

"We get uniformity and speed,"

said Raul Moran, production manager at Kraemer's. "We need automation because of the labor shortage and hours. We're always looking for efficiency and uniformity." He added that the Wiesner machine is 23 years old.

"It's been difficult to attract and retain laborers and I think that started about 20 years ago," said Chris Ames, operations manager at Kraemer's. "A lot of the pruning has to happen all at once, so machines like this allow us to get it all done timely."

Kraemer's and Woodburn also use a smaller mechanical version of the 60-footlong mowing machine Craig Hopkins developed. These simpler trimmers, made by nursery supplier **Wurdinger Manufacturing** in Silverton, Oregon, can be easily moved around to indoor greenhouses and outdoor beds.

The Wurdinger trimmer straddles the

plants in a bed. A lawnmower is hung on a frame and two people can maneuver the mower across the frame using a hand crank while the trimmings get collected into a bag.

Some of the straddling mower machines can be extended to cover a wider area, and some are longer to cover two beds at a time.

Another tool Kraemer's uses is from AgroNomix in Oberlin, Ohio. Moran said the AgroNomix EZ Cut Trimmer is much faster than the mowing machine and makes a cleaner, sharper cut because it uses a sickle bar instead of a blade. The trimmer requires two people to operate it.

"It also has a blower, so as the sickle bar is cutting it, the blower shoots the cuttings into a bag," Moran said.

"A bed that might take five minutes with the AgroNomix might take an hour

A simple mechanical trimming machine inside a greenhouse at Woodburn Nursery & Azaleas. PHOTO BY EMILY LINDBLOM



of pruning with a group of six people," Ames said. "It captures the debris, which is really important to get that debris up and out of the plants for disease prevention and to keep the beds and gravel areas as clean as possible."

Ames said the AgroNomix is used on plants that require a cleaner cut than the other pruning methods can provide.

Kraemer's Nursery also uses another AgroNomix trimmer to prune the plant starts while they're still in plug trays.

"If they come from propagation, they're already pruned, but if they're purchased, they'll come in and we'll want to do a little fine pruning on them," Ames said. "It's a really efficient way to get plants pruned prior to potting."

Trimming the plants before potting can help them branch low and it makes for a more consistent crop. This machine uses a vacuum to suck up the cuttings out of the plants to keep them clean and healthy.

Supplying need

Hort Tech Systems LLC in Hillsboro is one of the Oregon companies that supplies wholesale growers with the automation equipment. Clay Starke, president, has been involved in the nursery industry since 1983 and has seen how labor has changed over the years.

"It used to be that you'd get 15 to 20 people looking for work and you'd have a choice of good strong labor, dedicated people who you could count on," Starke said. "But now it's to the point where you have to beg and go out to recruit people to go to work for you."

Hort Tech was inspired by Midas Nursery Solutions, which was founded by the Gold family of **Gold Family Farms**. "They saw the need for automation at their own nursery for trimming shrubs and trees into specific shapes," Starke said. "They saw the need due to the lack of manpower, and they wanted everything to be equal and the same across the board."

Everde Growers, a Texas-based grower formerly known as TreeTown USA with farms in several states including Oregon, acquired Midas Nursery Solutions in 2019. Matt Gold of Midas Nursery Solutions had been trying to sell automation equipment to the large national grower and found more than a new customer.

"They offered me a job to help navigate a few different automation projects," Gold said.

At that time, Starke decided to start Hort Tech to fill the role that Midas had started in automation.

Now the director of continuous



CUTTING BACK TO GET AHEAD

improvement at Everde Growers, Gold said one special automation project is at the company's farm in Forest Grove, Oregon. A machine there simultaneously prunes multiple plants that are planted in the ground into globe shapes.

"That's probably the only site that will get that machine," Gold said.

Starke said automation has made a big difference in uniformity of the products.

"Where there used to be 10 people in the field with 10 different trim styles and speeds, now there's one trim that is all the same and equal. Now there's one or two people with these machines and the productivity has increased," Starke said.

As a supplier, Hort Tech Systems works with six different manufacturers to meet the needs of the growers, about 30% of the time with custom builds. For some customers, he may need to work with three or four different manufacturers on separate components to fit the need.

Starke said the technology has advanced in recent years.

"We can now adjust the shape and size of a single blade," he said. "And I can use an adjustable curved blade to adjust for the top or sides, and with different sizes."

Gold said it's important for Everde Growers to stay competitive with costs.

"Other companies are looking at automation and we've got to look at not pricing ourselves out of the market because the costs are too high," he said.

Some of Everde's sites pump out a large volume of plants while others produce less, depending on their climate and what they can grow.

"Some farms with less production may take us two to three years to have a return on investment, but if productivity stays the same and labor costs go up, the return on investment becomes much smaller," Gold said.

Starke said the upfront expense for automation equipment can be high. He estimated it costs between \$14,000 and \$18,000 to ship from Europe a 40-foot container of material, which could become about four different machines depending on the scope of each one.

But the issues with labor and time still make the machines an economical choice for growers. \bigcirc

Emily Lindblom is an Oregon-based freelance journalist covering business, environmental and agricultural news. She has a background in community reporting and a master's degree in multimedia journalism. Visit her website at EmilyLindblom.com or reach her at Emily@EmilyLindblom.com.



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Measuring low-water stress

Expansive study evaluates climate-ready landscape plants for the western U.S.

BY LOREN OKI AND JARED SISNEROZ

The flexible nature of the multi-state project has supported "bolt-on" projects, including work used by several researchers for their master's or doctorate projects. Here, project staff at South Coast REC in Irvine, California, are collecting leaf impressions for colleagues at University of Washington who will analyze stomatal density. COURTESY LOREN OKI E HAVE ALL experienced extreme weather conditions, from heavy rain and snow to prolonged droughts, which have become more frequent in recent years.

In response to the droughts that have threatened our water supplies, regulatory restrictions have been put in place to conserve water by limiting urban landscape irrigation. However, it is crucial to ensure the sustainability of our urban landscapes due to the environmental, social and economic services they provide.

Therefore, it is wise to use plants that contribute to the function of these landscapes, yet require minimal amounts of water to sustain them. There is increasing awareness and demand from retail customers for low-water plants.

This project aims to respond to that demand by examin-

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ing how plants perform under different levels of irrigation based on weather, including high, moderate and low levels. Based on the results, recommendations will be developed and shared for how to irrigate the plants.

This information can be used to design landscapes that require low amounts of water and comply with regulations such as the Model Water Efficient Landscape Ordinance in California, which requires the estimation of annual landscape water use for new and certain renovated landscapes.

From an industry perspective, this project seeks to establish facts based on anecdotal recommendations and identify high-performing, low-water plants.

Study parameters

The California portion of this study began in 2004 as a graduate student research project examining a suite of mainly California native plants by our colleague, Karrie Reid, a retired University of California (UC) Cooperative Extension Advisor who was pursuing her master's degree. The project was later expanded to include more fields and a shade house, and trials were opened to evaluate plants submitted by plant breeders, developers and nurseries.

In 2016, a California Department of Food and Agriculture (CDFA) grant was obtained to replicate the UC Davis trials at the UC South Coast Research and Extension Center in Irvine, California, allowing for the comparison of plant performance in northern and southern locations in the state. This grant also enabled the testing of cotoneaster genotypes developed at Oregon State University for disease resistance and water use.

To date, the program has evaluated more than 220 plants at UC Davis and more than 70 plants at South Coast Research and Extension Center, and it is known as the University of California Landscape Plant Irrigation Trials[™] (UCLPIT).

In 2020, a CDFA/USDA grant supported the replication of the full sun fields The trial fields at UC Davis in 2020, with the field in the background undergoing deficit irrigation treatments while the field in the foreground shows younger plants being established. In 2021, the field in the foreground will have deficit irrigation treatments imposed while the field in the background will be cleared and replanted. COURTESY LOREN OKI



at the University of Washington (Seattle), Oregon State University (research site at Aurora, Oregon), Utah State University (Logan, Utah) and the University of Arizona (Tucson, Arizona), allowing for the examination of plant performance across the Western Region of the U.S.

As the climate changes, future weather conditions are expected to become warmer and drier, with Sacramento's climate resembling Phoenix's current climate by the end of the century. With trial sites located across the West's climate gradient, the project is uniquely positioned to respond to these changes.

The plant palette for the trials consists of a mixture of taxa grown at all six sites, regional selections grown at multiple sites, and local taxa grown only at a single site.

Researchers worked with cooperators to invite plant submissions from the industry and an advisory committee with representatives from the nursery industry and botanical gardens to select plants for evaluation. For example, at our site at UC Davis, we are growing research selections developed at Oregon State University, rose cultivars available nationwide, and species grown in Arizona that are rarely seen locally.

Methods

To evaluate how plants respond to water stress, we conduct multi-year trials starting in late fall or early spring. We use 24 individuals of each taxa, representing what a retail consumer would purchase, usually in a #1 sized container.

During the first irrigation season, from April to October at UC Davis, the plants are irrigated regularly to support healthy shoot and root growth, and to establish the plants in the native soil. Although we may need to irrigate during unusually dry winters, the plants rely solely on rainfall through the second fall and winter until the start of the second irrigation season.

During this time, we provide irrigation to the plants at one of three levels based on reference evapotranspiration (ETo), which is the estimated water used by a reference crop (in our case, cool season turf), determined by a local weather station. The three irrigation treatments are 80%, 50% and 20% of ETo for the high, moderate and low treatments, respectively, and the percentages function as a crop coefficient to reduce daily ETo.

In California, we obtain weather

Loren Oki at the South Coast REC trial fields in Irvine, California. COURTESY LOREN OKI



data from the California Irrigation Management Information Systems (CIMIS) program, which has stations across the state providing weather and crop water use data for growers, including a weather station on the UC Davis campus. By locating the trials at universities, the trial fields are often near existing weather stations, such as in Oregon, where the weather station and plant trial field are in the same research site.

We determine the amount of water required to rewet a soil cylinder that is 1 meter in diameter and ½ meter in depth, based on the soil characteristics in our fields, as this is where the plant roots are located. Using weather data, we estimate when 50% of plant available water in this cylinder has been depleted and apply this volume of water at each irrigation event. The volume of water applied is constant across all treatments, and the ETo percentage for each treatment adjusts the frequency of irrigations and consequently, the number of irrigations per treatment over a season.

During the 2021 testing season, our fields at UC Davis, which are located on a silty clay loam, had the 80% treatment receiving irrigation every 10 days on average, while the 50% treatment was irrigated about every 15 days, and the 20% treatment every 36 days between mid-April and the end of September. It is noteworthy that the 20% interval is an extreme treatment. During the establishment season, the irrigation frequency is set at 80% of ETo.

To evaluate plant performance during the irrigation treatments, we collect data on plant width, length and height monthly, and calculate the Plant Growth Index (PGI) using the formula: PGI = [(1+w)/2+h]/2, where l, w and h represent length, width and height of the plant. To account for differences in height at the start of the season, we determine a relative PGI (PGIr) for each plant every month during the treatment season. PGIr is calculated as PGIm/PGIi, where PGIm is the PGI for the month, and PGI is the initial PGI at the start of the season.

The performance of the plants is assessed through various qualitative and quantitative measures. Qualitative performance ratings are made monthly on various categories, such as foliage appearance, flowering abundance, pest toler-

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ance, disease resistance, vigor and overall appearance. The ratings are on a scale of 1 to 5, with 5 being the highest. A second rating for flowering abundance and overall appearance is collected mid-month for each plant in bloom to track their blooming period.

Results

The PGI, PGIr, foliage quality, floral abundance, disease and pest resistance, vigor and overall appearance results are analyzed statistically to determine the irrigation recommendations. The lowest rate at which growth, plant health and aesthetics are not compromised is recommended as the optimal irrigation rate. Plants that score 4 or higher on overall appearance at the low-water treatment receive the Blue Ribbon Award, while those performing at that level on the moderate treatment receive the Happy Medium designation.

Open House Field Days are organized up to three times each year during the treatment season, where growers, retail nursery professionals, landscape architects and designers, agency representatives and master gardeners are invited to visit the fields to view and rate plants. Attendees are shown a plant in each treatment and asked to evaluate them. These visits serve as an opportunity to identify plant preferences, and favorites are recognized with the People's Choice Awards. The events also allow potential users to see how new plants perform on different irrigation treatments and determine if they would work well in a client's landscape. Many landscape designers have noted that these visits provide a better understanding of how the plants would look in a landscape, compared to viewing them at a nursery in a container.

The information that is developed is shared on the UCLPIT project website (https://ucanr.edu/sites/UCLPIT). Industry cooperators who submit plants for evaluation are provided with a copy of our report detailing the performance of the plant and on which irrigation category optimal performance was observed.

We will typically recommend irrigat-

Top: 2022 Open House Field Day at the trial site located at Utah State University in Logan, Utah. COURTESY LOREN OKI Open House Field Day at UC Dayis. BY KARRIE REID



ing the plants at the lowest treatment rate where visual aesthetics were not compromised. Our irrigation treatments align with those listed in the Water Use Classification of Landscape Species (WUCOLS), the resource of reference used for calculating landscape water budgets in California.

We share our results with WUCOLS so they can be added to the list and utilized to develop water budgets for new and renovated landscapes across our region. As a result, our trials offer a means to introduce irrigation recommendation for cultivars and species introduced since WUCOLS was last updated in 2014. 🕑

About the authors

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My chat with ChatGPT

I had a conversation a few months ago with Steve Shropshire, the association's legal counsel from Jordan Ramis PC, about the emergence of ChatGPT and the open-source abilities. I found it fascinating. Type pretty much anything into ChatGPT and it'll spit out a confident, convincing response.

What some have found is that its answers can be full of errors, and during long conversations, it can veer into wild tangents. However, my experience with AI, over 10 minutes of Q and A, resulted in this.

What are the benefits of the nursery and greenhouse industry?

ChatGPT: The nursery and greenhouse industry plays an important role in providing a wide range of benefits to the environment, economy and society. Some of the key benefits of this industry include:

• *Plant production*. Nurseries and greenhouses produce a wide variety of plants, including ornamental plants, vegetables, fruits, and trees. These plants are used in landscaping, agriculture, and forestry, and provide numerous environmental benefits, such as carbon sequestration and habitat creation.

• Food production. The nursery and greenhouse industry is an important source of fresh produce, including fruits and vegetables. This helps to support local and regional food systems and promote sustainable agriculture.

• *Job creation*. The industry provides employment opportunities for a wide range of workers, from growers and technicians to salespeople and marketing professionals.

• *Economic contribution*. The industry contributes significantly to the economy through the sale of plants, products and services, generating billions of dollars in revenue each year.

• *Environmental benefits*. Nurseries and greenhouses provide a controlled environment for plant production, which helps to reduce the use of pesticides and fertilizers. This can help to promote sustainable agriculture and reduce the impact of agriculture on the environment.

• *Education and research*. Nurseries and greenhouses also play an important role in education and research, providing resources and facilities for plant breeding, genetic research and development of new plant varieties.

Overall, the nursery and greenhouse industry provides numerous benefits to the environment, economy and society, and is a critical component of the horticulture and agriculture sectors.

Can AI predict climate patterns to inform nursery and greenhouse operators what to

grow to prevent climate change?

ChatGPT: AI has the potential to be used to predict climate patterns and help inform nursery and greenhouse operators about what to grow to adapt to and mitigate the impacts of climate change. Climate prediction models based on machine learning algorithms can be used to analyze large amounts of historical weather data and make predictions about future weather patterns.

Using these models, nursery and greenhouse operators can make informed decisions about what crops to grow, when to plant and harvest, and how to optimize water and nutrient use based on predicted climate patterns.

For example, if a model predicts that a region will experience a period of drought, growers may choose to plant crops that require less water or that are more resistant to drought conditions.

Additionally, AI can be used to optimize growing conditions to reduce the carbon footprint of the nursery and greenhouse industry. Machine learning algorithms can analyze data from sensors and other sources to optimize energy use, reduce water waste and minimize greenhouse gas emissions.

While AI has the potential to be a powerful tool for predicting climate patterns and optimizing growing conditions, it is important to note that climate models are inherently uncertain and can never provide a completely accurate prediction of future climate patterns. Therefore, it is important for nursery and greenhouse operators to use climate prediction models as a tool to inform their decisions, while also relying on their own expertise and experience in managing crops and responding to changing environmental conditions.

How do we protect the family farm in the United States?

ChatGPT: • Agricultural policy. Agricultural policy at the federal, state and local levels can play a key role in protecting family farms. Policies that provide financial support, such as subsidies, loans and tax incentives, can help to keep family farms financially viable. Policies that promote conservation practices and sustainable agriculture can also help to protect the long-term viability of family farms and the land they operate on.

• *Land use policies*. Land use policies at the state and local levels can help to protect farmland from development and conversion to non-agricultural uses. Programs that offer incentives to landowners to keep their land in agricultural production, such as conservation easements, can also help to protect family farms.

• Access to markets. Family farms need



Jeff Stone OAN EXECUTIVE DIRECTOR

access to markets to sell their products and generate income. Policies that promote local food systems and direct-to-consumer sales can help to provide family farms with access to markets and support the growth of local food economies.

• *Succession planning*. Many family farms struggle with succession planning, or the process of passing on the farm from one generation to the next. Policies that provide support for succession planning, such as estate planning assistance and tax incentives, can help to ensure that family farms remain in operation for generations to come.

• *Education and training*. Education and training programs that help farmers to develop business and financial management skills can be helpful in ensuring the long-term success of family farms. Programs that provide training in sustainable agriculture practices and new technologies can also help to improve the viability of family farms.

Use AI as a tool

We are breathing humans and should not bow to AI's information certainty. Our imperfect human combination of intellect, emotions and intuition cannot be synthesized.

I found this exercise interesting, but posed one last question to ChatGPT.

Are you SkyNet? (A reference to the "Terminator" movie where AI destroys humanity.)

ChatGPT: No, I am not Skynet. I am ChatGPT, a language model developed by OpenAI. I am designed to assist with a variety of tasks such as answering questions, generating text and providing assistance with language-related tasks. I am not sentient and do not have the ability to take over the world or harm humans.

Well, thank goodness for that, but a new era is coming, and we better be ready for it. \bigcirc



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