

Digger

NOVEMBER 2022

Transportation and logistics

Freight market 2023

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Protecting your plants

PAGE 23

Using refrigerated transportation

PAGE 31

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The Transportation Issue

Freight is as essential to the nursery industry as water, sunshine and air. We look at current developments in our annual Transportation Issue:

19 A season of nightmares

With low availability and higher driver and truck costs, shipping costs skyrocketed in 2022.

23 Safe travels

Nurseries take steps to protect plants and reduce shipment risks.

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Refrigerated trucks are key to spreading the Oregon nursery industry far and wide.

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Hacking and cybersecurity issues have been steadily increasing in the green industry.

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Soilborne fungus can afflict hebes and a wide range of other host plants.

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On the cover: Moving plants to market is a central concern for growers. PHOTO ILLUSTRATION BY TREVIN SWICK **On this page: Left:** Growers dealt with higher costs and lower availability in 2022. PHOTO BY XXX XXXX **On this page: Right:** Protecting plants during shipment ensures a successful sale. PHOTO COURTESY OF BAILEY NURSERIES

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The values of farm life

**For more than four generations,
farming has been an integral part
of our family. It's in our blood.**

My father, Jay Nelson, decided to leave his father's turkey farming operation in Utah as a young man, determined to leave its challenging work behind. But after successfully running his orthodontic practice for years, he recognized that no other lifestyle instilled values, discipline and a strong work ethic in his five children like farming. So, he purchased a farm in Woodburn, Oregon, and we began growing hazelnuts. We later transitioned to nursery stock.

Alongside my father, my brother, Brent, was an integral part of this change. It was an exciting new world for our family. It was also a whole lot of work.

My mother led by example. She could easily outwork any of us kids. I can't count how many times she would tell us that "the early bird gets the worm" and "many hands make light work." Eventually, my mother's words sunk in. Now, I find myself teaching my six children the same things my mother and father tried taught me years before.

I'd like to introduce myself and express my gratitude for the opportunity to serve as your Oregon Association of Nurseries president for 2023. My name is Todd Nelson. I am the owner of Bountiful Farms Nursery Inc. in Woodburn. My wife Lisa and I have been married for 28 wonderful years. We have six children whom we adore, and who keep us busier than we thought possible. They are our joy, and I'm so appreciative of their support and love.

Over the years, my business partner Blake Nelson and I have had the opportunity to work with amazing people who have become family. They are the heartbeat to our purpose to beautify the world's landscape with beautiful and unique nursery products.

I look forward to working alongside the OAN Executive Committee for 2022-23, including President-Elect Amanda Staehely, Vice President Wes Bailey, Treasurer Ben Verhoeven, Secretary Patrick Newton and Member at Large Darcy Ruef. I'm particularly looking forward to celebrating the 50th anniversary of the Farwest Show next August!

Much of what we do in the OAN could not be accomplished without the passion and dedication of the OAN staff. Thank you for all that you have done and will continue to do.

I'd also like to express my sincere appreciation to Mike Hiller, who encouraged me to become involved in the OAN several years ago. This has afforded me the opportunity to come to know some of the giants in our industry, such as Jim Simnitt, Kyle Fessler and, of course, our outgoing president, Josh Robinson. These individuals have led with confidence through unprecedented times, such as navigating through a global pandemic, with its accompanying supply chain issues, demand for product and rising costs. They have been faithful stewards and vocal advocates for the OAN, its members and the nursery industry. I am grateful for their generous mentorship and their devotion to our industry.

When I joined the OAN board five years ago, I was blown away by how much really happened behind the scenes. Witnessing firsthand the selfless service and dedication to helping members of our nursery industry has inspired me to want to do my part.

We live in a state of ever-changing rules and regulations. The OAN is a powerful voice for good in safeguarding our industry. One of my objectives is to bring transparency to how and what the OAN can do for you. Together, we can protect our industry now and for future generations of growers by fostering family-like support as growers and OAN members and create strong financial backing. Together, our voices will be heard as we champion ideals that are best for our people and our nurseries.

I look forward to meeting many more friends while carrying out this unique opportunity for service. ☺



Todd Nelson



Calendar

Get the word out about your event! Email details to calendar@oan.org by the 10th day of the month to be included in the next issue of *Digger*.

NOVEMBER 9-10

OREGON WATER LAW CONFERENCE

The 29th annual Oregon Water Law Conference will take place in the Oregon Room at the DoubleTree by Hilton, 1000 N.E. Multnomah Ave., Portland, Oregon. The program will provide an update on recent water-related legislative and administrative developments, along with discussions of the key issues driving water policy. Practitioners from a wide array of viewpoints will address complex water supply and management challenges in several of Oregon's watersheds, along with other recent decisions involving water distribution, water access, storage permits, and hydropower licensing. Richard M. Click, attorney at law, will give a special update on the recent Waters of the U.S. ruling and EPA response. To register, log on to www.theseminargroup.net/seminars/7216.

DECEMBER 5-9

2022 IRRIGATION SHOW AND EDUCATION WEEK

The Irrigation Association will present its 2022 Irrigation Show and Education Week from December 5-9 at the Las Vegas Convention Center, 3150 S. Paradise Road, Las Vegas, Nevada. The trade show portion of the event will be December 7-8, with other events happening all week. The gathering will offer unique education opportunities, access to the latest in irrigation technology and networking within a community of peers, all in one place. Registration is now open. Exhibitors are being accepted and lodging is available. The early bird registration deadline is October 31. For full details, log on to www.irrigation.org/2022Show.

JANUARY 11-13, 2023

MANTS

MANTS, the Mid-Atlantic Nursery Trade Show, will return to the Baltimore Convention Center, One West Pratt Street, Baltimore, Maryland. Branded as "The Masterpiece of Trade Shows," it is sponsored by the State Nursery and Landscape Associations of Maryland, Virginia, and West Virginia. The show averages more than 900 exhibitors and 11,000 paid registrants (including exhibitors) per year. Registration is now live at www.mants.com. An early bird rate of \$20 per person is available through December 2, increasing to \$30 per person after that. A full schedule of events will be available in mid-October.

JANUARY 18-20, 2023

NORTHWEST AG SHOW

The 53rd edition of the Northwest Ag Show will take place at the Oregon State Fair and Expo Center, 2330 17th St. N.E., Salem, Oregon. The annual event focuses on



NOVEMBER — VARIOUS DATES

FIRST AID AND CPR CLASSES

The Oregon Association of Nurseries offers First Aid and Adult CPR classes so that employees have the needed certification and can render assistance if needed in the workplace. Successful completion results in certification that is good for two years. Participants are urged to register early to guarantee a spot. Registrations are only accepted up to two days before each scheduled class. For November, classes will be offered in English on November 16 and in Spanish on November 17 at CPR Lifeline Training Center, 9320 S.W. Barbur Blvd., Suite 175, Portland. Classes run 9 a.m.-1:30 p.m. The cost is \$60. Additional classes will be offered monthly through September 2023, taking place either at Lifeline in Portland, or at the OAN offices in Wilsonville, Oregon. For dates, details and registration, visit www.oan.org/cpr.

emerging trends in agriculture, including small farming, technology, and education. The show is looking for exhibitors as well as sponsors. For more information, log on to www.northwestagshow.com. A sister show, the Central Oregon Agricultural Show, will take place March 24-25, 2023 at the Deschutes County Fair and Expo Center in Redmond, Oregon. The show debuted in 2022 and will return for a second showing in 2023. Details are available at www.northwestagshow.com/central-oregon-ag-show.

JANUARY 31-FEBRUARY 1, 2023

PROGREEN EXPO


ProGreen EXPO is the only green industry conference in the Rocky Mountain Region of its kind. More than 4,000 green industry professionals gather every year to gain vital knowledge and skills to improve business, educate employees and discover the latest

information for the upcoming season. The event takes place at the Colorado Convention Center, 700 14th Street, downtown Denver, Colorado. For details and to register or exhibit, log on to www.progreenexpo.com.

FEBRUARY 9, 2023

NOR CAL LANDSCAPE & NURSERY SHOW

The 2023 Nor Cal Landscape & Nursery Show will take place in the San Mateo Event Center Expo Hall, 1346 Saratoga Drive, San Mateo, California. The show is a one-day collaboration between California's horticulture and landscape industries featuring more than 250 exhibits and five educational seminars. To register, log on to www.norcaltradeshow.org. For more information, contact Margo Cheuvront, margoc@frontiernet.net or 530-458-3190. ©

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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, honors received and past or upcoming events. Email news@oan.org.



NWFCS market snapshot points to continued profits

The nursery and greenhouse industry should continue to expect profitable economic conditions over the next 12 months, according to the most recent Nursery/Greenhouse Market Snapshot issued by Northwest Farm Credit Services at the end of September.

The report identified several drivers for the industry, including strong prices, an increase in deliveries, labor shortages, input material shortages, and a decline in housing construction and sales.

"Prices and demand are strong and have offset rising input costs," the analysis stated. "The industry faces headwinds, including input material and labor shortages as well as declining consumer wealth and home affordability. Fortunately, the customer base grew during pandemic lockdowns and this should support demand."

Northwest Farm Credit Services, also known as Northwest FCS, is a financial cooperative providing financing and related services to farmers, ranchers, agribusinesses, commercial fishermen, timber producers, rural homeowners and crop insurance customers in Montana, Idaho, Oregon, Washington and Alaska. For more info, log on to www.northwestfcs.com.



The Honey Bee Health Coalition has released a new guide to protect the pollinators against parasitic Varroa mites, which are one of the chief causes of colony collapse. PHOTO COURTESY OF PEXELS

HONEYBEE ADVOCATES RELEASE VARROA MITE MANAGEMENT GUIDE

Although public attention has often been focused on pesticide misuse, Varroa mites are believed to be one of the chief causes of honeybee die-offs and colony collapse. In response, the Honey Bee Health Coalition (www.honeybeehealthcoalition.org), which is focused on agriculture and working lands, has released a new guide to help beekeepers and farmers manage the parasitic mites, the Pacific Northwest Ag Network news website reported.

Users can download "Tools for Varroa Management" directly from the website, along with various other resources, including videos.

According to Dr. Dewey Caron, a retired professor affiliated with the Oregon State University

Horticulture Department and a coalition member, growers can assume the mite is probably present in any honeybee colony.

"[Farmers and beekeepers] don't need to know that they've got mites because now they're spread, virtually, in all colonies," he said. "What they need to know is how many mites does a colony have? And that's a measure of risk. So, if there are very high numbers, it's a high risk that the colony will not be healthy, will not do a good job in pollination or produce honey, and probably not survive the winter."

Caron said the mites themselves aren't the threat; the danger is actually from a chemical reaction caused by their increased presence. "The issue is that mites are enhancing and changing the pattern of viruses in the honeybee population to the point that viruses that are more detrimental to the bees and likely to produce an epidemic, are favored, leading to entire loss of the colony."



DACA MUST STOP ACCEPTING NEW APPLICATIONS, COURT RULES

A federal appeals court ruled on October 5 that the federal Deferred Action for Childhood Arrivals (DACA) policy, implemented by the Obama administration in 2012, violates U.S. immigration law, CBS News reported.

The court ruled that the Biden administration must stop approving first-time DACA applications, while also allowing the administration to continue processing renewals.

President Joe Biden issued a statement expressing disappointment in the ruling. "The court's stay provides a temporary reprieve for DACA recipients but one thing remains clear: the lives of Dreamers remain in limbo," he said. "It is long past time for Congress to pass permanent protections for

Dreamers, including a pathway to citizenship."

The U.S. Department of Justice will appeal the ruling as the case makes its way through the federal courts. It's expected it may wind up in the U.S. Supreme Court by next year.



According to U.S. Citizenship and Immigration Services, some 594,120 immigrants brought to the U.S. as children were enrolled in the DACA program (www.uscis.gov/DACA), which allows them to live and work in the United States without being deported. The "Dreamers," as they are often called, had to prove they arrived in the United States by the age of 16 and before June 2007; that they studied in a U.S. school or served in the military; and that they lacked any serious criminal record.

ROBINSON NAMED TO GLOBAL WARMING ADVISORY COMMITTEE

Outgoing OAN president Josh Robinson, co-owner of **Robinson Nursery Inc.** in Amity, Oregon, has been named to the Oregon Global Warming Commission's Natural and Working Lands Advisory Committee. The 27-member committee will examine climate-related issues, and look at ways working lands, including agricultural lands, can mitigate climate change.

The Oregon Global Warming Commission previously adopted a Natural and Working Lands Proposal that sets goals for carbon capture and storage on Oregon's natural and working lands. Topline goals are to sequester at least an additional




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5 million metric tons of CO₂ per year in Oregon's natural and working lands and waters by 2030 above 2010–19 levels, and at least 9.5 million metric tons per year above the 2010–19 levels by 2050.

The nursery and greenhouse industry has long argued that its products are necessary for sequestering carbon, and that state policy should encourage such use.

"I can't think of a better tool than plants to offset the effects of climate change," Robinson said. "I look at our industry as a large part of the solution when it comes to sequestering carbon. What we do is world changing. Not only are we invested in being stewards of our land for future generations, but we are quite possibly the only businesses that operate at a carbon surplus. It will be my mission to educate everyone I can that we are part of the solution to one of the worst issues facing our planet."

HIGHER CHRISTMAS TREE PRICES UNLIKELY TO HURT DEMAND

Christmas trees are expected to cost more this season, but most observers don't think it will reduce demand much, the *Capital Press* (Salem, Oregon) agricultural newspaper reported.

Real Christmas Tree Board, an industry-funded checkoff program dedicated to research and promotions, surveyed wholesale growers and found that 98% expect to charge more this season. Some 70% of them expect an increase between 5–15%, but some expect hikes of 20% or more.

"Nobody wants the price to increase but they accept it," said Marsha Gray, executive director of the organization.

Bob Schaefer, general manager of Noble Mountain Tree Farm in Salem, told

the newspaper that growers must increase the prices due to rising input costs, such as chemicals and fertilizers. "We've definitely not kept up with the total costs we're incurring," he said. He mentioned that fireworks stands were selling out this past summer despite higher prices, which he regards as a positive indicator for Christmas trees. Both are seasonal goods with a short sales window.

GROUPS ARGUE STATE'S EMISSIONS RULES EXCEED AUTHORITY

An assortment of industry groups are arguing before the Oregon Court of Appeals that state regulators exceeded their authority in establishing Oregon's Climate Protection Program, the *Portland Business Journal* reported.

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The various program rules were adopted in December 2021 and are designed to reduce carbon emissions. Gov. Kate Brown directed various state agencies to draw up these rules with an executive order that she signed in March 2020. This came after Republicans walked out of the Oregon Legislature to prevent legislative passage of climate protection rules.

Brown directed the agencies to regulate using their existing authority, but various trade groups argue that the agencies then exceeded that authority.

The program sets an annual limit on emissions from fossil fuels — such as gasoline, diesel, propane and natural gas — that gradually lowers over time. Fuel suppliers must curb emissions from the products they sell 50% by 2035, and 90% by 2050. Nurseries and greenhouse producers use

these fuels to move product and heat production spaces.

Groups each separately opposing the program include natural gas distributors, the Western States Petroleum Association, and a coalition of business groups that includes Oregon Farm Bureau, Oregon Business & Industry, and the Oregon Association of Nurseries. The natural gas distributors, WSPA and business coalition each submitted their own briefs and arguments.

The OAN has argued that while climate change is real, the rules as constituted will punish nursery producers without recognizing that nursery products remove and store carbon from the atmosphere. “It won’t be helpful to the climate if we as growers can’t afford to produce our products,” OAN Executive Director Jeff Stone said.

CALIFORNIA GOVERNOR APPROVES FARMWORKER UNIONIZATION LAW

California Gov. Gavin Newsom signed legislation making it easier for farmworkers in that state to unionize their workplaces, the *Capital Press* agricultural newspaper (Salem, Oregon) reported.

The law gives workers new ways to vote in union elections besides physical polling places on farm property, including a “card check” process whereby workers sign an authorization card. If more than half sign the card, the union is formed. Unions including the United Farm Workers and the California Labor Federation wanted expanded voting options due to concerns about union busting and employer intimidation.


Gov. Newsom originally opposed ➤



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the legislation but President Joe Biden supported it, putting pressure on Newsom to support it as well. In the end, the governor approved the bill, but only after parties agreed to consider modifying it in the next legislative session with clarifying language. This language would do away with mail-in voting for unions attempting to organize a workplace.

The California Farm Bureau particularly opposed vote-by-mail, expressing security and fraud concerns. They still expressed disappointment that the bill was signed into law.

Oregon's agricultural community will no doubt watch this California bill and its repercussions, given that California legislation is often a prelude to bills later introduced in Oregon and Washington. "Defeating card check proposals, whether state or federal, has long been on our list

of legislative priorities," OAN Executive Director Jeff Stone told Member Update.

"These proposals come up from time to time and will in the future. It's concerning to see it get traction in California, but we'll do our best to make sure it doesn't in Oregon."

IMMIGRATION ARRESTS ALONG MEXICO BORDER SET RECORD

U.S. authorities are on pace to make more than 2.3 million immigration arrests along the southern border during the government's 2022 fiscal year ending Sept. 30, the Washington Post newspaper (Washington, D.C.) reported. That number far exceeds the previous record of 1.73 million arrests tallied during President Biden's first year in office.

Traditionally, most of those crossing the southern border have come from Mexico or Central America, but this year, migrants

from other places have surged. Customs and Border Protection officials said that migrants from Venezuela, Nicaragua and Cuba accounted for more than one-third of those taken into custody in August. These countries all have strained relations with the U.S., which limits officials' ability to deport people to the nations they arrived from. Many of these arrivals are applying for asylum in the U.S.

"Failing communist regimes in Venezuela, Nicaragua, and Cuba are driving a new wave of migration across the Western Hemisphere, including the recent increase in encounters at the southwest U.S. border," Customs and Border Protection Commissioner Chris Magnus, said in a statement. "Those fleeing repressive regimes pose significant challenges for processing and removal," he said, using the official term for deportations.



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Pacific Fibre Products. Employees at Pacific Fibre Soils in Canby, Oregon include (front row, l-r) Jose, Juan, Brad, Jolene, and Rogelio; (back row, l-r) Brayan, Paul, Dave, John, Dan and Filiberto. Not pictured: Ward. OAN FILE PHOTO.



Announcements

PACIFIC FIBRE PRODUCTS PURCHASES PHILLIPS SOIL PRODUCTS

Pacific Fibre Products has purchased Phillips Soil Products in Canby, Oregon from former owner Bill Phillips and is now operating it as Pac Fibre Soils, a division of **Pacific Fibre Products Inc.** The newly purchased location at 26050 S. Highway 170 in Canby offers custom soil mixes for the nursery industry.

"We are proud of the reliable quality we offer in our soil products, which is backed up with excellent customer service," bark sales and logistics manager Nate Marsh said. "We look forward to carrying on the reputation of quality that Phillips delivered, with the added resources of Pacific Fibre to serve customers even better than before."

Pacific Fibre Products offers barkdust and bark products in addition to soil products from the Canby location. The company is headquartered in Longview, Washington, with other locations in Molalla, Oregon; North Plains, Oregon; Central Point, Oregon; and Weiser, Idaho.

Daily hours are 7 a.m.–3 p.m. Monday–Friday. For more information, log on to www.pacfibrefibre.com, email customsoil@pacfibrefibre.com, or call Jolene Neuberger at the Canby location at 503-266-4700.

PONCELET JOINS HORT SUPPLIER BFG SUPPLY CO.

Janet Poncelet has joined new OAN members **BFG Supply Co.** as a technical sales representative for the Pacific Northwest, with hopes of expanding the company's customer base in the region.

"Janet brings over 20 years of technical expertise to her customers in Oregon and Washington, and we are excited to have her on the team," said Greg Stone, the company's vice president of sales.

BFG, based in Burton, Ohio, is a horticultural supplier offering crop protection products, fertilizers, containers, soils, coverings, lighting, equipment, greenhouses, benches, poly film, shade fabric and more. The company has been in business for more than 50 years and has 21 warehouse locations around the country with more than 1.2 million square feet of inventory.

"Our recent purchase of Green-tek gives us three distribution facilities nationwide focusing on quick turnaround of coverings like poly, polycarbonate, shade fabrics and insect netting," Stone said. "We feel we are in a great position to be a reliable and full-service provider to growers in the Pacific Northwest. Please don't hesitate to reach out to Janet or me if you have any questions or want to learn more about the products >>>



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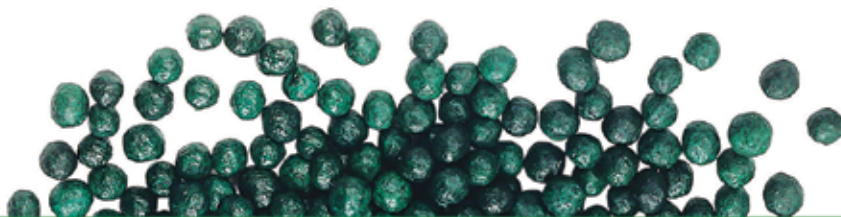
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and services we look forward to bringing to the market.”

Poncelet can be reached at janet.poncelet@bfgsupply.com or 503-708-3190. Stone can be reached at greg.stone@bfgsupply.com. For more information about the company, log on to www.bfgsupply.com.

BAILEY HYDRANGEA GETS FIVE-STAR EVALUATION

Bailey Nurseries reported that its First Editions® White Diamonds® Panicle Hydrangea earned a five-star rating from the Chicago Botanic Garden's Plant Evaluation Program.

Garden staff evaluated the plant for its ornamental traits as well as landscape performance from 2011 through 2019, the grower stated in a release. The plant was planted in a trial garden that was exposed to wind in all directions and received up to 10 hours of full sun during the growing season, while receiving minimal maintenance. It was also not deadheaded, fertilized, winter mulched, or chemically treated for insects or diseases.

In Issue #47 of Plant Evaluation Notes, Director of Ornamental Plant Research Richard Hawke shared their findings and stated, “The sterile florets of White Diamonds opened green and turned sparkling white before aging to rosy-pink in mid-August. By late August, flowers turned green again with some pink highlights and pink spotting. The 2-inch sterile florets were large compared to most cultivars.”

“White Diamonds has been in these Chicago gardens for over a decade and the five-star rating shows it to be a true landscape performer,” said Layci Gragnani, brand and business development manager with Bailey. “That rating, paired with its exceptional upright white blooms in the summer and spectacular shades of pink in the fall, solidifies White Diamonds as a stunning focal point in the landscape.”

For more information on the plant, head to www.firsteditionsplants.com/product/white-diamonds-panicle-hydrangea/. ©

Protecting your office against cyberattacks

HACKING AND CYBERSECURITY issues have been steadily increasing in the green industry. But for horticultural businesses facing a variety of challenges, addressing these issues is rarely the top priority. Nonetheless, this is an increasing issue that owners and managers should pay attention to. Cybercriminals target everyone.

Cybercrime for hire is big business and is a widely available service. Now, anyone with a computer and minimal skills can target anyone remotely from anywhere. This growing accessibility is steadily increasing these threats. Here are some things to know, as well as some steps businesses can take to protect themselves.

Methods of attack

Ransomware attacks — During a ransomware attack, a virus or bug gets into a computer and encrypts all the files, holding them hostage for a ransom. Your company is locked out until the ransom is paid. Failure to pay by the given deadline can result in the hijacked files being deleted.

Cybercriminals find holes in commonly used software and use them to gain entry to a network through one machine, and then can penetrate the network. The goal isn't to get money from a small business. It is to severely disrupt or put the unfortunate business out of business.

These attacks are becoming much more common. Fortunately, ransomware insurance is now readily available from any business insurer.

Phishing scams — Phishing scams are frequently used in all forms of online communication. In a phishing scam, a scammer uses some type of fraudulent communication — email, text, social media, or phone — to get information. The phisher wants the target to reveal sensitive personal or company data, such as credit cards, account numbers, Social Security numbers, usernames, and passwords.

Common tactics include sending upsetting or disturbing notices that purport to be from government agencies, collection agencies or someone else. Such notices may include threats of lawsuits, or conversely,



Ron McCabe

Ron McCabe, president at Everbearing Services in Portland, Oregon, has been a technologist for over 35 years and an expert digital marketer for 13 years. Visit his website and subscribe to his newsletter at www.everbearingservices.com, or reach him at rmccabe@everbearingservices.com

offers of free trips, vacations, or prizes. The goal is to trigger a strong emotional response to bypass logic and get a click on a link.

These links often lead to online forms that look official, but are not. Fake collection or tax notices purporting to be from the Internal Revenue Service are common, and often effective at getting people to enter valuable and sensitive information.

Other avenues include online surveys on social media. These are often designed to collect information to crack passwords and break into accounts. Unfortunately, the success of phishing scams has made them an attractive tool to target individuals and businesses.

Exploits — Hackers often use exploits or holes in software or security to get in. They pound on the operating system and system software to find ways to get into systems or networks. As hackers increase their creativity, more holes are found.

Social engineering — Social engineering is the old-school way of getting sensitive information over the phone or face-to-face. Scammers often use their existing knowledge of a company to pass themselves off as legitimate. They often pretend to be from trusted government agencies, utility companies, or vendors. They get people to reveal sensitive passwords, company information, trade secrets, intellectual property, and personal data.

Scammers will often ask for what they want, and surprisingly, people will



Protecting your office against cyberattacks

often give it to be “helpful.” This practice is on the rise and is often combined with phishing and exploits to get the background information to seem legitimate.

Protect yourself and your business

What can be done to protect your business against becoming a victim of cybercrime? The good news is that by following these practical, actionable steps, you can improve your company’s cybersecurity and reduce the risk of cyber threats.

Keep your software and operating system up to date. Most software and operating system updates involve security patches to address new security vulnerabilities as they are discovered. You may have noticed that these are now more numerous. Get in the habit of routinely installing updates as soon as they are available.

Manage your passwords appropriately and change them frequently. Do not use the same password more than once. Try to select passwords that wouldn’t be obvious references to anything in your life. Avoid using birthdays, Social Security numbers, children’s or pets’ names, or other data that could be easily found or guessed by Googling you or doing background research. Consider using a secure password automatically provided by your operating system or software.

Use secure shared passwords. If sharing passwords is common practice in your office, use a secure password program like LastPass, Keeper or Nordpass. This type of software allows your team to share passwords securely and safely.

Protect your company from “social engineering.” Train your team to be careful and really validate people’s identity when they ask for sensitive information. Advise

your people to look for this and not be so “helpful” if these situations come up.

Use antivirus and/or anti-spyware software to protect your business. Antivirus software gives you the tools to face cybersecurity threats, such as malware attacks, head-on. They allow you to scan, identify and neutralize malicious software. They can be scheduled to scan automatically.

Back up your data regularly. Ideally, backing up critical data daily is the best defense against losing everything in the event your business is compromised. It is a really good idea to do this to an off-site location. There are hardware options and many services available to do this easily and securely.

Critically evaluate what you receive. It is good general practice to not open emails, direct messages, or text messages from unknown sources. Do not click on any links provided within these messages. If unsure, call to verify if communication is real before clicking any links or sending any money.

Turn off your computer when you aren’t using it. Leaving a computer on and unattended provides additional opportunity for it to be compromised. Cut off an attacker’s access by turning off your computer.

Educate your employees about cybersecurity. Consider requiring this as part of training of new employees and reviewing this with existing employees to assure they are up to date on current cybersecurity protocols.

Have a company technology policy. The policy should clearly state the rules regarding downloads, social media or other non-work related uses of any devices connected to the company’s network.

Work with a network security professional to make sure your network is secure. Securing your network against the constantly changing tactics of cyberattacks is crucial to protecting your business. Working with a professional with this specialized training is well worth the money.

Prioritizing investment in strong cybersecurity for your company now will pay off for your business, your employees, and your customers in the long run. The stakes are too high not to do so. ©

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A season of nightmares

With low availability and higher driver and truck costs, shipping costs skyrocketed in 2022

BY MITCH LIES

FOR AS LONG AS ERICA HILL can remember, Union Pacific railroad has provided the nursery industry with a special commodity rate to move stock during the spring shipping season.

Until this year, that is.

“With container availability issues and with the rails already over maximum network capacity, for the first time, they did not issue a nursery stock pricing matrix for the season,” said the director of intermodal services at Independent Dispatch in Portland, Oregon. “It was a huge blow.”

Added to that, truck drivers had little incentive to pick up nursery stock given that they were making significantly more money moving containers off the ports, she said.

“The ports were so clogged,” she said, “and importers were paying such high prices to get the containers out of the piers that we had a very difficult time securing drivers to pick up nursery stock loads.

“At one point, I reached out to every single UIIA carrier (those contracted to work rail) and was offering a thousand dollars on top of regular rates to just pick up some nursery stock loads, and I got literally one response,” Hill said. “And that was a maybe, and then they reneged on me.

“I felt so bad for our nursery stock customers,” Hill said. “We have moved product for them for a long time, and the fact that we weren’t able to help them out as much as we usually can, particularly when it was a really big season for them, was terrible. It was terrible.”

On top of those issues, a driver shortage added to difficulties, Hill said.

“Drivers are in short supply right now everywhere, but particularly in Portland,” she said.

Also, she said, because of increased costs to move product by rail, Independent Dispatch was forced to dramatically raise rates it charged nurseries.

“It is different on each of the lanes,” she said, “but some were up 27–30%.”

Still, she said, intermodal was cheaper than moving product by truck. But, with rails at capacity, intermodal often wasn’t an option. And nurseries that for years have worked with Independent Dispatch turned to the spot market to try and find trucks to move product to market, Hill said.

“They were just trying to find any truck they could get and they were paying exorbitant prices,” Hill said. “They were struggling.”



A season of nightmares

'A whole new game'

Transportation company executives interviewed for this story said a combination of forces pushed transportation prices skyward and had companies struggling to meet demand.

"It is a whole new game now," said Dale Parra of Truck Transportation Services in Wilsonville, Oregon. "It doesn't matter if you go to a nursery, a warehouse, or really, anywhere. There are less people to load stuff and unload and transport products. "It is a whole new world and who knows if the old world is going to come back."

Parra said he advertises for drivers and uses word of mouth to try and lure people into the business, but that hasn't helped ease his driver shortage.

"You just try to find more and more people that are interested, or try to talk more people into the business," Parra said. "And it is tough. You get guys who will try it, and they might do a trip or two and say, 'It isn't for me.' And the lifestyle is not for everybody. That is for sure."

Fred de Boer of Mainland Floral Distributors in Aldergrove, British Columbia, Canada, said his struggle to get drivers is compounded by border crossing issues, specifically by a mandate issued by the Canadian government in January that all who enter Canada must be vaccinated against COVID. (This mandate expired October 1.)

"In our case, there (were) a number of drivers that no longer could go in and out of the United States after the vaccine mandate came in effect," de Boer said.

Matthew Arendt, who deals mostly with cross-border goods movement at Mainland Floral, added: "We ask the nurseries where we load to send us the customs clearance documents and phytosanitary certificates in advance, before our truck even shows up to load. That way the broker can apply for release by the CFIA (Agriculture Canada) and get the shipment cleared in time. If a shipment is not set up, then the truck sits at the



border, and with that comes the aggravation for the driver. I tell them we will pay you for the hours you are waiting, but the drivers don't like sitting at the border."

"It's hard to get a driver in the first place," de Boer said. "In our case it is even harder as we face multiple deterrents to be overcome. If we lose one driver today, we are screwed."

"It is a whole new game now. It doesn't matter if you go to a nursery, a warehouse, or really, anywhere. There are less people to load stuff and unload and transport products."

— Dale Parra, Truck Transportation Services

Increased pay

De Boer said he upped the rates he pays drivers by about 20 percent to try and ensure they stay on. "I just said, 'Look, we have to make sure we don't lose a single driver, so we have to up the pay,'"

he said. "And none of our guys have left."

Another issue that is new to the industry, he said, is getting chassis.

"If you want to buy a new tractor-trailer today, you can't," he said. "You can't even get a quote."

"I asked a dealer, 'Hey, can you give me a price for a new 50-foot trailer,' and he said, 'I can put you on the list for summer 2023, but I can't give you a price,'" de Boer said.

"So, I placed an order for three new truck chassis for delivery sometime next year," he said. "I don't know when I'm going to get them, and I also don't know what I am going to pay. But at least I am on the list. If you don't do that, you aren't going to get anything."

All of this directly affects nurseries that are trying to get product to market, transportation executives said, with the most immediate effect being increased costs.

De Boer said he raised his rates about 20 percent, both to absorb increased costs and to up what he pays drivers.

“When it became clear that the vaccine mandate was going to stay, we implemented a 20 percent increase,” de Boer said.

Parra said he raised his rates 20 to 25 percent in the spring before scaling back the increase back to 10 to 12 percent today.

The rate increase, he said, has had little effect on demand.

“I saw a couple of people maybe back away a little bit this spring, but overall, most freight customers accepted the increase in cost, because they were getting increases on other things, too,” Parra said. “It was just part of the norm back then.”

Truck friendly

Transportation executives said nurseries can help themselves by being more

“The ports were so clogged, and importers were paying such high prices to get the containers out of the piers that we had a very difficult time securing drivers to pick up nursery stock loads.”

— Erica Hill, Independent Dispatch Inc.

attractive to drivers, something that comes with a lack of hassle, according to Hill.

“The more complicated they make it, the more difficult it is covering it, because the drivers are very picky right now, and they can be,” she said. “They can just go to the port and make a lot more money. So, the shippers have to be very, very truck friendly.”

Also, Russ Damyan, an agent for Freight Tec in Boise, Idaho, advised nurseries to shy away from taking the cheapest bid. “Don’t look for the cheapest person,” Damyan said. “If you go with the cheapest person, there are always significant problems.”

Looking forward, transportation executives said they believe the transportation outlook is improving.

“I am pretty optimistic about things right now,” Parra said. “I think with the oil price coming down and the fuel coming down and with other things settling down, I think we are going to be at this new normal for a while.”

“Basically, where we are at now, I think is the new normal in terms of rates,” he said.

Hill, too, said there are encouraging signs in the transportation industry. >>

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A season of nightmares

For example, she noted that even though Union Pacific instituted a peak-season surcharge right out of the gate this year, the first time in her memory that happened before August, the railroad company also eliminated the surcharge during what would be the normal busy season.

As for the reduced rate provided UP during the spring, Hill said she has been asking UP executives if that will be reinstated next year, but has yet to get a response. "They are in a wait-and-see mode right now to see what this year is going to be like as far as capacity," she said. "But things are changing for the better.

"Hopefully we are done with the worst of it," Hill said. "I think we are," she added. "But it was a nightmare. The 2022 nursery stock shipping season was the most challenging time for intermodal rail in recent history, in terms of availability of equipment and drivers." ☹





Safe travels

Nurseries take steps to protect plants and reduce shipment risks

BY TRACY ILENE MILLER

GETTING PLANTS TO MARKET SAFELY without any mishaps requires a variety of techniques to meet the needs of customers and plants. One must also consider the limitations of packing live products into motorized inert steel boxes, which bounce, for long trips.

Here we explore approaches to prepping plants, from growing to loading and delivery, to ensure they arrive at their destination at their best. Experts provide insights and recommendations on the various ways that standard materials and custom-made tools are used to reduce damage and ensure the protection of the plants to arrive in pristine form.

Racking and palletizing

Compared with even just six years ago, the use of racks and pallets to ship plants has steadily increased among growers.

Kraemer's Nursery (Mount Angel, Oregon), an 850-acre nursery that grows woody and ornamental flowering shrubs, broadleaf evergreens, grasses, perennials, conifers, roses and other products, ships only container plants and, in addition to using a floor stack method, employs three types of racks as well as pallets.

Bailey Nurseries, a grower of shrubs, trees, liners, seedlings and rootstocks based in St. Paul, Minnesota, with additional

nurseries in Illinois, Washington state and Oregon — uses pallets and racks almost exclusively, with hardly any floor stacking.

Kraemer's sells 80% of its material to big box stores, and juggles the needs of its customers when choosing which racks to use. All shipments to Kroger-owned Fred Meyer stores, for instance, use racks from Container Centralen, Inc. (Winter Garden, Florida), otherwise known as a "CC rack." Kraemer's is a depot for the rolling CC racks.

"We work with them to pick up all their racks, and then store their inventory at the nursery," said Tristan Wampole, continuous improvement manager at Kraemer's Nursery.

The nursery also rents racks from E-Z Shipper Racks LLC (El Segundo, California), which offers a retrieval service. Any location in the Pacific Northwest region, Kraemer's drivers will pick up the third type of rack the nursery uses: custom-made racks it builds in-house from wood. Farther out, the racks are left with the customer. Alaska-bound material, for instance, all requires racks, which Kraemer's leaves with customers, who are charged for the wood and labor for that service.

Bailey has a local supplier of wood racks that custom-makes them to specs that fit the nursery's shelf spacing and its forklifts. The nursery also rents from E-Z Shipper Racks and provides its own racks, which Bailey paints a different color, yellow, to



Safe travels

On this page: Racked plants from Bailey Nurseries Inc. in Yamhill, Oregon await shipment to their destination. Photo courtesy of Bailey Nurseries. Previous page: Kraemer's Nursery Inc. in Mt. Angel, Oregon carefully stacks an order of containerized conifers for shipment to a customer in Colorado Springs, Colorado. The wooden stakes at the edge of the row help prevent the containers from moving around during transit. PHOTO COURTESY OF KRAEMER'S NURSERY INC.

easily identify them during pickups.

Basically, anything that can be racked among trees and shrubs is, said Alex Pond, Yamhill container shipping foreman for Bailey. "Material too tall to rack is palletized, which reduces strain on the crew. Palletizing is easier."

All the 5-gallon trees are palletized, with very few hand-stacked, Pond said. The 7-gallon trees vary; depending on how tall the trees, the software decides. "If it 'sees' something short enough to sit on a pallet, and not have it too tight, then it is palletized," Pond said.

Even with hand-stacked trees, however, Bailey assigns the pallet space, or "footprint," that it would take up. This helps figure the necessary footage beforehand, allowing the nursery to identify a mix of items for any load.

"When we went to palletizing, we weren't going to be doing trees and shrubs, but then customers could only order one or the other, and that didn't work," Pond said.

By having the software think of everything as fitting on a pallet, it can figure how much space is needed. A tall tree might need more space, for instance, even if it is in a five-gallon container. For the crew organizing a load, they can run the program, figure the number of spots in a truck, pack up a smaller quantity on a pallet if necessary, and know overall more accurately how much (more) can fit; "more," without damage, always being the goal.

"It's amazing how close it comes. It's not perfect, but the worst thing in the world is shipping air," Pond said. "Sometimes we outsmart the computer; there are cases you just got to make more fit. Our crew is good at that (without jeopardizing the plants)."

Racking has been the biggest boost to quality, he said. "(It's different from) five to six years ago, when we hand-stacked everything, and the plants needed days to freshen up," Pond said. "With shelves, you can pack tight, and the plants come

off, and they are ready to go in minutes after they come off the truck, with no broken branches."

Pruning

For better shipping conditions, Bailey is pruning plants shorter than in the past to keep them slightly more compact on a rack. Whereas a plant might have been grown to 26 inches in the past, trimming today to even two inches shorter, at 24 inches, produces a good-looking plant that fits the current racking system far better.

"So instead of a plant only fitting on a two-level rack, we can get it on a three- to four-shelf rack, fitting more plants to a rack," Pond said.

Rachel Ralstin, sales manager & owner at **R&M Plant Procurement LLC** (Silverton, Oregon), a wholesale plant broker servicing the Pacific Northwest, is also a proponent of selective trimming and pruning to prevent breakage. She has encountered 5-gallon hydrangeas that flop with too much top growth, but then break during shipping. ➤



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With select pruning, the plants can be trimmed to standards that do not sacrifice good retail presentation but limit breakage, Ralstin said.

There are added benefits. "If you trim, you develop a stronger base, a lateral base, which creates a strong plant," Ralstin said. "If you are shipping material that is not well-rooted, you are taking a risk" of loose soil dislodging and spilling out.

Trunk and plant wraps

Trunk wraps, or guards, are common tools for protection of trees as well as for marketing purposes when they can be printed for specific store needs.

Roses get special treatment at Kraemer's, with a sleeve, basically a brown bag, that is put over the pot to prevent them from becoming tangled and to protect any roses already blooming, which is what the

customers want to see when they get to the store, Wampole said.

The nursery made the decision to do this for almost all rose bushes for quality control. Only the smallest of bushes do not get a sleeve.

"When we are shoving 30 plants on one rack, the branches get tangled, and when they get to the store they were breaking," Wampole said. "The sleeves mean fewer credits to write and more units we are able to push to those stores."

Ball and burlap

Ralstin uses star wires to keep the ball intact. The wires are spread out like a concentric circle and pulled up around and secured with rope to tie the burlap around the tree.

B&B material is inspected beforehand, and old burlap replaced before it is set to

ship, to avoid compromising the root ball. Wire, rope, blocks, shade cloth, these are the tools Ralstin uses most to keep the plants protected. It's imperative to harden leafed-out materials in one part of the season while employing shade cloth in others to prevent the material from scorching.

Watering

At Kraemer's, before the plants ever get to the truck, racks are set directly into watering tunnels, starting with the most sensitive crops. A spray from all sides means no matter the shelf, the plants should get their moisture. From there, they go right into the truck.

Bailey pulls everything through a shower before putting on the dock. It installed sprinklers on all sides of the rectangular dock, and then one in center to be sure racked material watered through. Plants are

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Nursery employee Billy secures his mixed load for delivery that morning by placing cinder blocks to stabilize container trees, and setting a rope line between layers to keep the trees from lifting and shifting.

PHOTO COURTESY OF R&M PLANT PROCUREMENT.

soaked as they are pulled up to the dock, where they are processed, tagged and racked the day before loading. Watering is done late afternoon and again in the early morning if the weather is really hot, making them “nice and fresh” for loading in refrigerated trucks, which the majority of the trucks are, Pond said, unless the shipment is local.

Ralstin approaches watering a few ways. Wood wedges are used to prop B&B material upright on a pallet the morning prior to shipping so that all sides of the tree and root ball are irrigated.

“All areas are watered twice daily with four-foot riser sprinklers from above to allow for all materials to receive adequate water as they await shipment,” she said. “Plants are watered before sunrise and after sunset to prevent sun burn. Plants are also inspected seven days a week in the staging area to ensure that all materials are



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being saturated and that all pots are upright and can access proper irrigation.”

Getting the configuration

Kraemer’s employs a full-time configuration team to evaluate the racking. Their primary focus is to make sure the current size of the plant matches the database; review the trucks and racks; and then override the system if a change is necessary; for instance, if a four-shelf rack is better than a five-shelf rack.

“At any one time, we have 600 acres of production ground, and it’s hard for the team to get to every work order situation to update the plants as they are growing,” Wampole said. The configuration team reviews what the system thinks the racking should be, and then the actual plants to make sure that the rack load actually will work.



These plants from R&M Plant Procurement LLC arrived safely at their destination and are arranged the way they will be installed in the landscape. PHOTO COURTESY OF R&M PLANT PROCUREMENT LLC.

Kraemer’s developed this new system by hiring a developer to enhance the functioning of the Sage X3 software, over a year ago, and is now able to get within one to two racks accuracy for the packing of trucks and to also dramatically reduce the time it takes to do so.

Moving on to staging

In addition to building a new system for configuring racks, Kraemer’s has been focused on timing of preparation to build overall quality. The crew used to take material from the field, and it would sit for 48 hours before making it to the rack. But by

pulling smaller quantities and taking them directly to the rack, Wampole said the plants stay closer to the field up until the time they are racked, which has cut down on the lead time between field and truck.

With a similar intention, Ralstin heals in all trees in the staging area to prevent them from being blown over and to keep the B&B material moist and block absorption of heat by the container material. If in the staging area for longer than a day, tree canopies are untied to avoid leaf damage in summer and retied the morning of shipment prior to loading.

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Overall, though, racking and palletizing has allowed some prep to be done ahead of time, although on hot days, nurseries hold off as long as possible before shrink-wrapping pallets.

“The number one goal is the protection of the plant, that it arrives the way the customer expects it,” Pond said.

At Bailey, in most cases, the crew can plan in advance, and if warm weather is a concern, a fine mesh netting that breathes is used instead. “We use the mesh netting more than anything now,” Pond said. “It is another step to get it done ahead of time.” The plants can even sit wrapped in the mesh a day or two.

Loading and floor stacking

Kraemer’s has transitioned to using more racks than floor stacks, but stacking is still in use. A shift in the way the plants

are stacked has helped with less breaking of branches, Wampole said.

The nursery uses pieces of wood to set the plants on an angle to the nose of the trailer, making the containers less likely to move or fall back. The plants are stacked row by row, and then strapped to make them extra secure. The floor stack straps are attached to the racks in front of them, “so they have nowhere to go,” Wampole said. That means, as a bonus, the floor stacks work as a natural dividing line, alerting the driver that one drop is done, and they can close up and move onto their next stop.

For larger 25-gallon trees, Bailey uses a process that requires less handling and more protection for the tree. Branches are tied with twine and foam, or even only twine, to make the tree skinnier to get in the trucks. An attachment with two large pincers goes on a customized forklift to clamp on the

tree, allowing the operator to drive in and set the tree down in the truck with two crew members on the ground guiding the branches and setting the tree in the right spot.

“It’s not way faster, and it’s not slower, but it’s way safer and easier wear and tear on the people,” Pond said. “There’s less handling of the tree,” which protects the plant more, is better for the tree.

For a hands-off approach as well, Ralstin has employees use a hay hook to position trees for loading and unload. “In shipping, it is very common to see untrained employees grabbing a tree by the trunk or a limb or even the tip, and dragging the actual plant,” she said. “This can cause damage by way of breakage, and it can loosen the root ball or break the root ball.”

Forklift training is also important to root ball integrity. “The forks must be positioned in a manner that they can grab



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the root ball midway without letting the root ball slip through the forks and break, and without the forks being too tight and puncturing the root ball.”

For deliveries, Ralstin uses a customized 24-foot flat bed with removable side panels and permanent attached retractable shade cloth awning (which is also used to cover the staging area in summer). “The removable side panels allow for varied access to safely load and offload large trees,” she said.

Like Kraemer’s, R&M lays the trees at an angle with tops pointed toward the nose of the truck. Cinder blocks stabilize larger container trees, and a rope line weaving in between the layers prevents the trees from lifting and shifting.

“Every season has its challenges,” Ralstin said. The different approaches for prepping and packaging plants for shipment evolve for better efficiency while maintaining the health and beauty of the plants on their arrival. ☺

What growers and customers want is plants that arrive safe and undamaged, as these did.

PHOTO COURTESY OF R&M PLANT PROCUREMENT LLC.



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Cool ridin'

Refrigerated trucks are key to spreading the Oregon nursery industry far and wide

BY JON BELL

WHEN YOU THINK ABOUT IT, it's pretty amazing that, say, a young Autumn Blaze® red maple tree (*Acer × freemanii* 'Jeffersred') that starts its days here in Oregon can end up all the way across the country in a backyard in Boston.

Or that Christmas trees that grow up for seven years in the Beaver State make their way, all lush and green, to festively decorated homes in places like California, Texas and even Florida for the holidays.

Such geographical leaps have been made possible over the past few decades in large part due to the evolution of one particular mode of transportation – the refer truck.

As anyone in the nursery industry knows, refrigerated trucks are key to transporting plants, trees and other nursery materials around the county. They're especially important here in Oregon considering that, according to the Oregon Department of Agriculture, greenhouse and nursery ranks No. 1 on the list of Oregon's top agricultural commodities. In 2020, the value of production for greenhouse and nursery was nearly \$1.2 billion –

more than twice the No. 2 commodity, cattle and calves.

Refer trucks are also key because the Oregon nursery industry is one of the largest exporters of nursery materials in the entire nation.

"Our primary mode of transporting goods is by refrigerated trucking or temperature-controlled trucks," said Joel Mandel, West Coast operations manager for Northland Express Transport, a nursery-focused shipping company with offices in Oregon and Michigan. "For nursery, it's the best way to help the product maintain a temperature as it's travelling across the country. If it gets too hot outside, it could scorch the trees and shrubs; if it gets too cold, they could freeze. Refers make sure they get there without frying or freezing."

Temperature checks

At K&M Distribution, a transportation broker headquartered in Rogue River, Ore., about 90% of the loads it moves are nursery products. And of those, a majority need to be shipped in refer trucks.



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“You just wouldn’t be able to do it without refer,” said Matt Frederick, logistics coordinator at K&M. “You really need that extra layer of protection for the plants or else it could turn out real messy.”

Frederick said different plants need different temperatures and different levels of refrigeration. As for the latter, refers usually offer two options: a continuous cycle or a stop-start cycle. Which one to choose depends on what species of plant, whether it’s in bloom or not, what the weather’s going to be like, and other factors. Frederick said brokers work closely with both shippers and receivers to determine what’s best for each load.

Bare-root trees have to go on refers and usually need to be held at between 34 and 38 degrees. Some plant species do fine

On this page: Matthew Sacnit of Empire Transportation in Gresham, Oregon loads containerized bushes at Woodburn Nursery and Azaleas Inc. in Woodburn, Oregon.

Previous page: Alexander Leyva del Santos helps with the load. PHOTOS BY CURT KIPP



at about 45 degrees in the spring during the height of the shipping season, but as summer takes over, temperatures need to be adjusted. Frederick also said that sometimes, if a plant is headed to a warmer climate, temperatures will be set a little warmer in the refer to help the plant acclimate more quickly upon its arrival.

There is also a refrigerator option for rail transport, but Mandel said that's a little more scarce and not as common as refer trucks.

And while there are some windows for "dry boxes" or "dry vans" – the name used for non-temperature-controlled semi-trailers – they are fairly short. Again depending on the species, weather and climate, there may be an opportunity for some nurseries to ship their products without refrigeration.

"We have a good dry van time to ship, usually around the end of September and into October, and then there's a short window in the spring," Frederick said. Heartier plants, such as conifers and ball and burlap species, can endure being transported in dry boxes, but many other species cannot.

Shipping dry is, naturally, more cost effective than in refers. When it comes to cost, Mandel said dry rail is the most affordable, followed by dry van, refer rail and refer truck.

"The majority leaves in refer trucks," he said.

Hot market

Like the demand for nursery goods, demand for refers ebbs and flows. As a result, the past couple years have



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seen demand – and rates – rocket up as the COVID-19 pandemic kept people at home and focused on their gardens and landscapes.

“COVID made planting cool again,” Frederick said. “Everybody got back in their gardens.”

That meant that inventories got drained, wholesalers sold out and some nurseries even started selling next year’s plants early. Shipping all those goods put a strain on the transportation piece of the industry: drivers were scarce, prices went up and timelines went out the window during the pandemic.

Supply chain constraints and other issues also lengthened the time it took for broken-down trucks to get back on the road. And though there are hundreds of thousands of refrigerated trailers on the road in the U.S., the pandemic made it



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tough – and more expensive – to find and use them.

“Coming into 2022, we saw significantly higher rates than previous years, just because of the supply and demand issue,” Mandel said.

That’s eased somewhat, especially now that the busiest part of the 2022 season is over. But there’s always something else that could impact the equation, whether that’s the apple and pear harvest in Hood River, pumpkins in Mexico or citrus in Florida – all of which need to ride in refers.

“We always try to look ahead at those harvests and see what they are looking like because they’re going to impact us,” Mandel said.

More cooling ahead

With refers already a cornerstone of the nursery industry, there’s likely no chance that their role will diminish at all, especially as the climate continues to warm.

“I believe climate warming is creating new demand,” Mandel said, “and spending on refer transportation is going to continue to grow. There’ll be bigger demand until at least 2030.”

As that demand grows, so too will the technology that powers refer trucks improve. Mandel said the main area of focus at present revolves around improving the efficiency of refer trucks and their associated cooling units. »



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Digital readouts and real-time temperature monitoring are making refers even more reliable for shipping plants and trees cross-country. Newer trucks also use electric standby technology, which means the cooling units can maintain temperatures without having to run the diesel engine while parked.

On top of all that, Mandel said nurseries and farms have been making new accommodations to help ease the burden of the long-haul refer drivers who help power the nursery industry.

“They’re reaching out in really heartfelt ways and figuring out ways to make drivers’ rides easier,” he said. “They’re adding overnight parking, vending machines, showers, they’re allowing drivers to drop their trailers if they need to – all these things that the drivers are appreciating and that make a more efficient model overall.” ☺



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EMPLOYMENT

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EMPLOYMENT

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EMPLOYMENT

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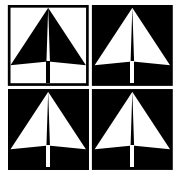
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GROWING KNOWLEDGE

Series content is coordinated by Dr. Jay Pscheidt, professor of botany and plant pathology at Oregon State University in Corvallis, Oregon.



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Fig. 1. The symmetrical, opposite arrangement of leaves on a boxleaf hebe. PHOTO COURTESY OF JERRY E. WEILAND.

Don't get burned by charcoal rot

Soilborne fungus can afflict hebes and a wide range of other host plants

BY JERRY E. WEILAND

HEBES (PRONOUNCED HEEBEEES) are an interesting group of evergreen shrubs, mainly from New Zealand, although there are also a few from South America and French Polynesia. Botanically, they are now placed in the genus *Veronica*, but many will know them by their older genus name, *Hebe*.

Hebes are well loved by plant aficionados for their symmetrically arranged leaves, interesting growth forms, and flowers. The leaves come in various shades of green, blue, bronze, or purple, or they can also be variegated with white.

Species and cultivars with smaller leaves are generally more hardy and do well in western Oregon and Washington. Those with larger leaves, however, are more sensitive to cold and can

only be successfully grown as perennials along the coast or other locations where the winter temperatures are milder.

Over the past five years, I have seen an increasing number of landscape hebes die during the summer months. Symptoms first become noticeable when the leaves on one or two stems per plant begin to turn yellow and wilt. As the symptoms progress, the tips of the branches droop and eventually the entire branch dies, turning brown and brittle.

On larger plants, the disease may progress slowly, sporadically taking out a branch or two over several years. At least one Sutherland hebe (pictured) appears to have recovered and has had no new symptoms for five years. On smaller, younger plants (less than 3 years old), however, the disease is quite rapid ➤

and the entire plant appears to dry up and die within a few weeks.

Symptoms are occasionally noticeable as early as February, but are more commonly observed once the weather warms up later in spring and summer. Affected species have included the cypress hebe (*V. cupressoides*), thick-leaved hebe (*V. pinguifolia*), and whipcord hebe (*V. ochracea*).

Finding the real culprit

Suspecting *Phytophthora* root rot, I dug up plants from several locations and examined the root system. The roots were mostly intact, with more fine roots than I would expect had *Phytophthora* been the culprit.

Phytophthora species tend to rot away the fine roots, leaving thicker, coarse

structural roots behind. Roots infected by *Phytophthora* also tend to be water soaked or mushy. Instead, the hebe roots were dry and hard, with some of them turning grey or black.

Curious, I took samples back to the lab, where I was able to isolate the pathogen that causes charcoal rot, *Macrophomina phaseolina*.

Charcoal rot is considered a warm weather disease. The pathogen is soilborne and becomes active once soil temperatures are above 60°F. However, it is most active at warmer temperatures between 82-90°F.

Unlike *Phytophthora* species, which are water molds and require free moisture for infection, the *M. phaseolina* fungus is able to infect and cause damage under relatively dry conditions. Disease may actually be worse in

sandy, well-drained soils. As a result, charcoal rot symptoms often intensify during hot summer weather and are exacerbated by drought.

The fungus can survive for years in the soil as tiny, black microsclerotia. When roots of a host plant grow nearby, the microsclerotia germinate, and then infect and kill the roots. Infected roots quickly lose their ability to transport water and nutrients. This leads to aboveground symptoms of nutrient deficiency (yellowing or stunting) and water stress (wilting).

Root and stem tissues near the root collar may become discolored internally, turning orange or brown with prominent gray or black streaking. The root exterior may also turn black as new microsclerotia are produced both internally and on the roots



Fig. 2. A healthy whipcord hebe (left) and one that has succumbed to charcoal rot (right). PHOTO COURTESY OF JERRY E. WEILAND.

surface. It's this black color on the infected tissues that gives rise to the common name for the disease, charcoal rot.

The fungus has an extremely wide host range and can infect well over 500 plant species, including vegetables (beets, cucumber, peas, peppers), flowering annuals and perennials (dahlia, lavender, sunflower), conifers (cedar, Douglas-fir, pine, spruce), monocots (lily, palms), small fruits (blueberry, grape, and strawberry) and deciduous trees and shrubs (cherry, dogwood, maple, oak).

Probably one of most well-known hosts of this pathogen is strawberry, where infection results in discrete patches of wilted or dying plants in the field. Charcoal rot is also a significant problem in conifer seedling beds, where it can cause damping-off.

In most of these hosts, the symptoms

of charcoal rot can be easily confused with those caused by other root pathogens, such as *Fusarium*, *Phytophthora*, and *Verticillium*. Therefore, a professional diagnosis should always be made before any disease control treatments are applied.

Established in the Willamette Valley

Up to this point, charcoal rot has mainly been a problem in more southern states, where the soil temperatures are much warmer in the summer and the winters are more mild. But, lately, the pathogen has been discovered with increasing frequency further north. In 2014, *M. phaseolina* was first detected by the Oregon State University Plant Clinic on strawberry in southern Oregon.

Looking back through my lab notes, I

see I have also isolated *M. phaseolina* from nursery crops in the Willamette Valley, including several declining red maples at a tree nursery in 2010 and from a few chlorotic and stunted field-grown rhododendrons at another nursery in 2017.

So how did a pathogen that was primarily restricted to more southerly locations and requiring warmer temperatures start appearing further north in the Willamette Valley? One of the most likely routes is via plant trade. Nine of the younger hebes that developed charcoal rot originated from a single nursery.

Hebes are often produced in greenhouses, which are more sheltered and have warmer growing conditions than outdoors. They also prefer to be grown on the drier side, disliking excessive wet. These same >>



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Fig. 3. A large, 4-foot-wide specimen of Sutherland hebe where a cluster of stems died out five years ago from charcoal rot (left). A smaller, 8-inch-diameter McKean hebe that is starting to die from charcoal rot. PHOTO COURTESY OF JERRY E. WEILAND.



warm and dry conditions would be equally suitable for *M. phaseolina* to thrive if it had been accidentally brought into a greenhouse production system on contaminated media.

In addition, the climate in the Pacific Northwest has become more favorable for this *M. phaseolina* over time. Between last year's heat dome and the record drought, and this year's week-long heatwave in late July, it appears that hot and dry summers are becoming more commonplace. This disease is likely to become more prevalent in our region as long as these trends continue.

Managing the disease

Prevention and sanitation are key for managing charcoal rot. The most likely avenues for getting this disease are by accidentally bringing it in on infected plant material from another nursery or through root contact with contaminated potting media, field soil, or dirty containers.

Be sure to inspect all new, incoming

plants for symptoms. Reject the shipment if you see anything suspicious. In addition, keep all container plants off of the ground, ideally on raised benches with wire mesh bottoms to prevent roots from coming into contact with soil.

If you do see symptoms of charcoal rot on your own nursery stock, send samples to a plant disease diagnostic lab for confirmation. As mentioned, there are several root pathogens that cause similar symptoms, and treatments will vary depending upon which pathogen is causing the disease.

That said, there are no treatments that can cure a plant once infection has occurred. Remove and destroy all infected plants, including the roots and any adhering media or soil to reduce the amount of inoculum that could get left behind.

For container production, always use new potting media and new, or thoroughly cleaned and disinfested, pots. Never re-use potting media from plants that have died.

Composting and solarization are unlike-

ly to be very effective because of how tolerant *M. phaseolina* is to heat, but fumigation or anaerobic soil disinfestation may be effective at reducing microsclerotia populations in infested field soil. ©

Dr. Jerry E. Weiland is a research plant pathologist with the Horticultural Crops Disease and Pest Management Research Unit, USDA – Agricultural Research Service in Corvallis, Oregon. He can be reached at Jerry.Weiland@usda.gov.

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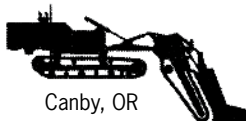
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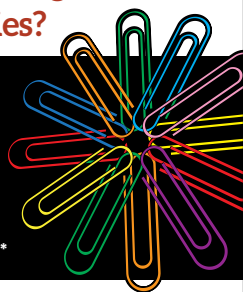
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Your vote is your voice

The 2022 election cycle has more angst, absurd assumptions, and consequences than I have seen in some time.

No doubt, regardless of discussions are at the fence post, supply stores or at family dinner, there is tangible uncertainty about the economy, crime, and our social fabric.

In Oregon, a high number of voters believe the state is on the wrong track. That is a recipe for making a change and our opportunity to get to vote.

Don't let doubt interfere

The 2020 election has been one that has been a subject of a tremendous amount of debate and divisiveness. During that election, America came together and voted in more numbers than ever before — and that should be celebrated.

But in all campaigns, there are winners and losers, and it seems that the electorate these days cannot grasp that their worldview did not hold the day.

I have been there and get it. Losing really sucks, but it does not mean the election was not free and fair. Now, four in 10 Republicans — and one in four Democrats — say they will blame election fraud if their party does not win control of Congress this month.

For the 2022 midterms, 2020's tumult is alive and morphing into a broader distrust of institutions and elections. Surveys found that Americans who had shared a meal in the past month with someone with a different political affiliation would be more skeptical about jumping to conclusions about fraud.

Several public opinion polls from the first half of 2022 show roughly 70% of registered Republicans believe there is widespread voter fraud despite no evidence to support the claim.

Regardless of your political stripes, do not let the past (and distaste for the political toxicity) impede your future vote. This country trusts the people to establish direction through elections. Your voice matters.

Mistrust is not new

"Election integrity" efforts date back to the post-Reconstruction era, when segrega-

tionists aimed to take back racially integrated Southern governments by casting doubt on the legitimacy of Black votes. While the tactics are old, suppressing the vote is still an effective tool to tilt vote results one way or another.

Fear and anger are tried and true, and weather is a factor too — that is what makes the COVID election of 2020 was so remarkable. I recall in the television show "The West Wing," the high-strung character Josh Lyman was freaking out about the rainy weather in Oregon knocking down turnout. I yelled at the television, "We are a vote-by-mail state, you dunderhead!"

Oregon: low barriers to voting

I must say I miss going to the local elementary school and casting a ballot in person. There is something about the community gathering and the red, white and blue bunting at the booth that made it feel like something special.

Guess what: our right to vote is something special and is in our DNA. Oregon was the first state to create the ballot initiative process more than 100 years ago, and was among the first states to let women vote during the suffrage movement.

I recall the debate very well — not the one over women's right to vote, but our pioneering effort to go solely to vote by mail. In November 1998, state voters decided (by a better than 2-to-1 margin) to expand it to include state primary and general elections. Registering in Oregon is easy, and most experts agree that Oregon has few barriers to voting. The only real thing to stop people from voting is apathy.

What makes the toxic comments about election integrity so grating is that Oregon's county clerks are an honest bunch. All 36 county clerks are dedicated public servants.

Unfortunately, election officials who oversee elections in the state worry that misinformation about voter fraud and claims of rigged elections, often coming from outside the state, is eroding trust in voting and, by extension, democracy.

According to the Capital Chronicle news site, the state's motor-voter law has boosted the number of registered voters in Oregon. Before the law passed, Oregon had 2.2 million registered voters. As of October 2022, the state boasted more than 2.9 mil-



Jeff Stone
OAN EXECUTIVE DIRECTOR

lion registered voters — an increase of 32% over the last six years. (Oregon's population grew by about 7% in the same period.) The signature-verification process is one of the system's strongest safeguards against fraud.

A boost in member engagement

I have never seen our members be so involved in campaigns as this year. This is not a Republican or Democrat (or non-affiliated) thing, it is taking personal responsibility and working hard to shape the kind of state we collectively want. It is the democratic process in all its glory.

I have heard it directly: "I have never written a check to a candidate before;" "I never have put a field sign on my property until now;" and "How do I get involved in the association's process to determine endorsements?" Oregon Nurseries' PAC has an endorsement list, which is available if you want it.

One thing is clear — big and small operations have come to the realization that elections have consequences. Oregon's gubernatorial race is unique in the nation, with three women who have held state elective office. Former House Minority Leader Christine Drazan, the Republican; former House Speaker Tina Kotek, the Democrat; and running unaffiliated, State Sen. Betsy Johnson, a former Democrat. They have broken campaign spending records, collectively over \$48 million, to become Oregon's next governor. That is an insane amount of money.

Oregon mirrors much of the nation. The control of the state and congressional majorities are in play. 2022 matters.

Do not let doubt or anger seep in and limit your voice. Get out and vote! ©

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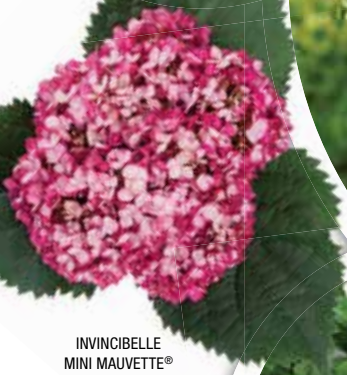
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