

GRIFFIN GAZETTE

Vol. 42 | Issue 1 | 2025

From Ordinary to
EXTRAORDINARY

How Griffin Can Help Develop the right
FERTILIZER PROGRAM

SYNGENTA FLOWERS

Your Partner for Garden Mums

Strategy for Integrating
BCAs with Chemistry



A FAMILY OWNED SINGLE SOURCE SUPPLIER FOR ALL YOUR HORTICULTURAL NEEDS



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VOL. 42 • ISSUE 1 | 2025

Welcome to the Griffin Gazette, delivering industry tips and insights from notable partners and experts.

In each issue, we bring you valuable knowledge, innovative strategies, and expert advice to help you stay ahead in your business. As a third generation family-owned nationwide leader and distributor, Griffin Greenhouse Supplies offers you products, resources, workshops, and training to help you build a thriving growing business with knowledge-sharing and caring.

As your single source supplier for all horticultural needs, we invite you to join us as we explore and serve industry expertise and empower your journey of growth and success.

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1.800.888.0054

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Stafford Springs, CT	Schenectady, NY
Ball Ground, GA	Perrysburg, OH
Woodridge, IL	Salem, OR
Tewksbury, MA	Morgantown, PA
Gray, ME	Richmond, VA
Bridgeton, NJ	

PLANT & SEED LOCATIONS

General Inquiries

1.800.888.0054

Woodridge, IL
Morgantown, PA

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COVER PHOTO:

Pamela Orange from Syngenta Flowers



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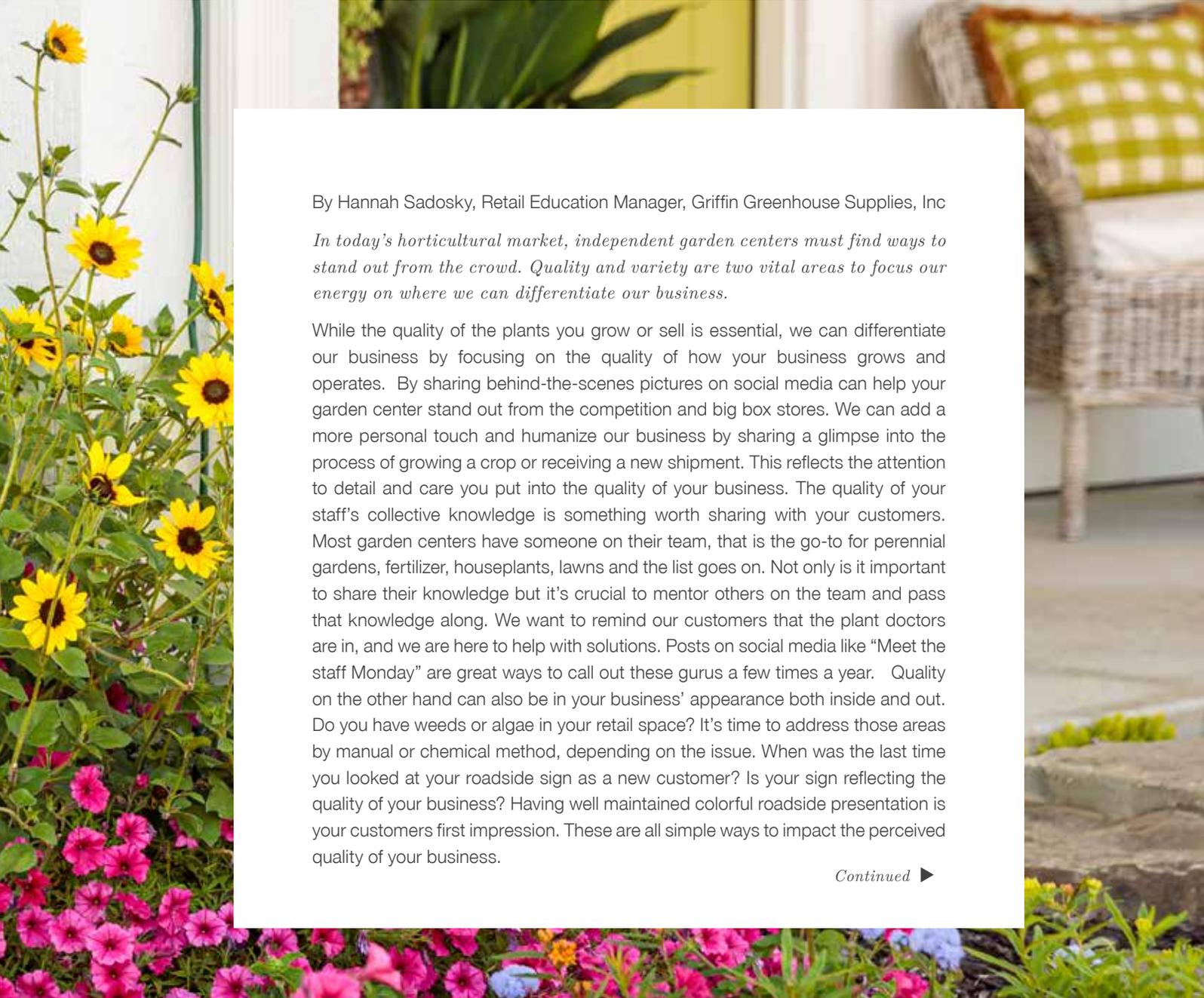
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FROM ORDINARY TO

Extraordinary

Rise above the Rest





By Hannah Sadosky, Retail Education Manager, Griffin Greenhouse Supplies, Inc

In today's horticultural market, independent garden centers must find ways to stand out from the crowd. Quality and variety are two vital areas to focus our energy on where we can differentiate our business.

While the quality of the plants you grow or sell is essential, we can differentiate our business by focusing on the quality of how your business grows and operates. By sharing behind-the-scenes pictures on social media can help your garden center stand out from the competition and big box stores. We can add a more personal touch and humanize our business by sharing a glimpse into the process of growing a crop or receiving a new shipment. This reflects the attention to detail and care you put into the quality of your business. The quality of your staff's collective knowledge is something worth sharing with your customers. Most garden centers have someone on their team, that is the go-to for perennial gardens, fertilizer, houseplants, lawns and the list goes on. Not only is it important to share their knowledge but it's crucial to mentor others on the team and pass that knowledge along. We want to remind our customers that the plant doctors are in, and we are here to help with solutions. Posts on social media like "Meet the staff Monday" are great ways to call out these gurus a few times a year. Quality on the other hand can also be in your business' appearance both inside and out. Do you have weeds or algae in your retail space? It's time to address those areas by manual or chemical method, depending on the issue. When was the last time you looked at your roadside sign as a new customer? Is your sign reflecting the quality of your business? Having well maintained colorful roadside presentation is your customers first impression. These are all simple ways to impact the perceived quality of your business.

Continued ►



The variety of plants and products you offer also sets your business apart from the competition. It's no secret gardeners are looking for plants that perform. Just as many consumers are drawn to the latest products like a new iPhone, garden centers also feature the latest plant genetics for those seeking something fresh or improved. New plant genetics offer just that, more bloom for your buck. If you have specialty plants like hard to find, rare or even native plants; reinforce that your garden center has a variety of plants in stock gardeners are looking for. Variety can also extend to your retail goods like ceramic pottery, bird baths, soils and fertilizers. It is also key to share all of this variety you have in stock with your customers on social media with pictures.

Continued ►



IMAGES: SUNCREDIBLE® SATURN™, SUNFLOWER
HELIANTHUS HYBRID FROM PROVEN WINNERS

DOUBLE DELIGHT® APPLEBLOSSOM
BEGONIA TUBERHYBRIDA FROM PROVEN WINNERS

It's key to be consistent with your customer base, both in person and digitally, that your garden center is a unique and a specialized establishment. By prioritizing both quality and variety, we can distinguish our garden centers from the competition.



Was this article helpful to you?

Visit www.Griffins.com and click on the Retail Tab to find loads more resources and thought-provoking ideas to help your garden center thrive!



SYNGENTA FLOWERS

*Your Partner for Successful
Garden Mum Programs*

By Lauren Kilpatrick, Syngenta Flowers Technical Trial Manager

Garden chrysanthemums have earned their status as the cornerstone of fall displays and decor, distinguished by their prolific blooms, diverse color palette, and minimal maintenance requirements. At Syngenta Flowers, we are dedicated to advancing the industry through trusted genetics and comprehensive technical support. Our commitment extends beyond product development to ensure grower success, optimize retail performance, and maximize consumer satisfaction.

VERSATILE MUM FAMILIES

Syngenta Flowers offers a diverse range of garden mum families, expertly bred for adaptability and exceptional performance. Whether you're utilizing natural season production or black cloth programs, our mum varieties deliver consistent results. Each family is carefully developed to ensure matched flowering responses, similar habits, and uniform vigor across various growing conditions.

The Pamela™ Family stands out as a versatile 4-color option ideal for mid-late natural flowering programs or black cloth production. Pamela™ has excellent vigor, making it perfect for filling medium to larger containers and the larger flowers hold up exceptionally well in warmer temperatures. The Pamela™ Family also pairs well with Cynthia™ Scarlet to round out the color palette.

Our 2025 introductions bring exciting new options to the market! One of my new favorites is Melanie™ Bronze Bicolor which is a standout novelty fall bicolor, timed to flower for peak of fall sales. Its tidy habit makes Melanie™ an excellent choice for 3.0 qt. pots and smaller containers, and even hanging baskets. This variety offers growers a unique option to diversify their offerings.

Recognizing the enduring popularity of yellow in the mum market, we're thrilled to introduce Maria™ Yellow. This mid-season, natural flowering variety is characterized by its large blooms. What sets Maria™ Yellow apart is its extraordinary flower longevity, ensuring extended enjoyment for consumers.

CALENDAR WEEK



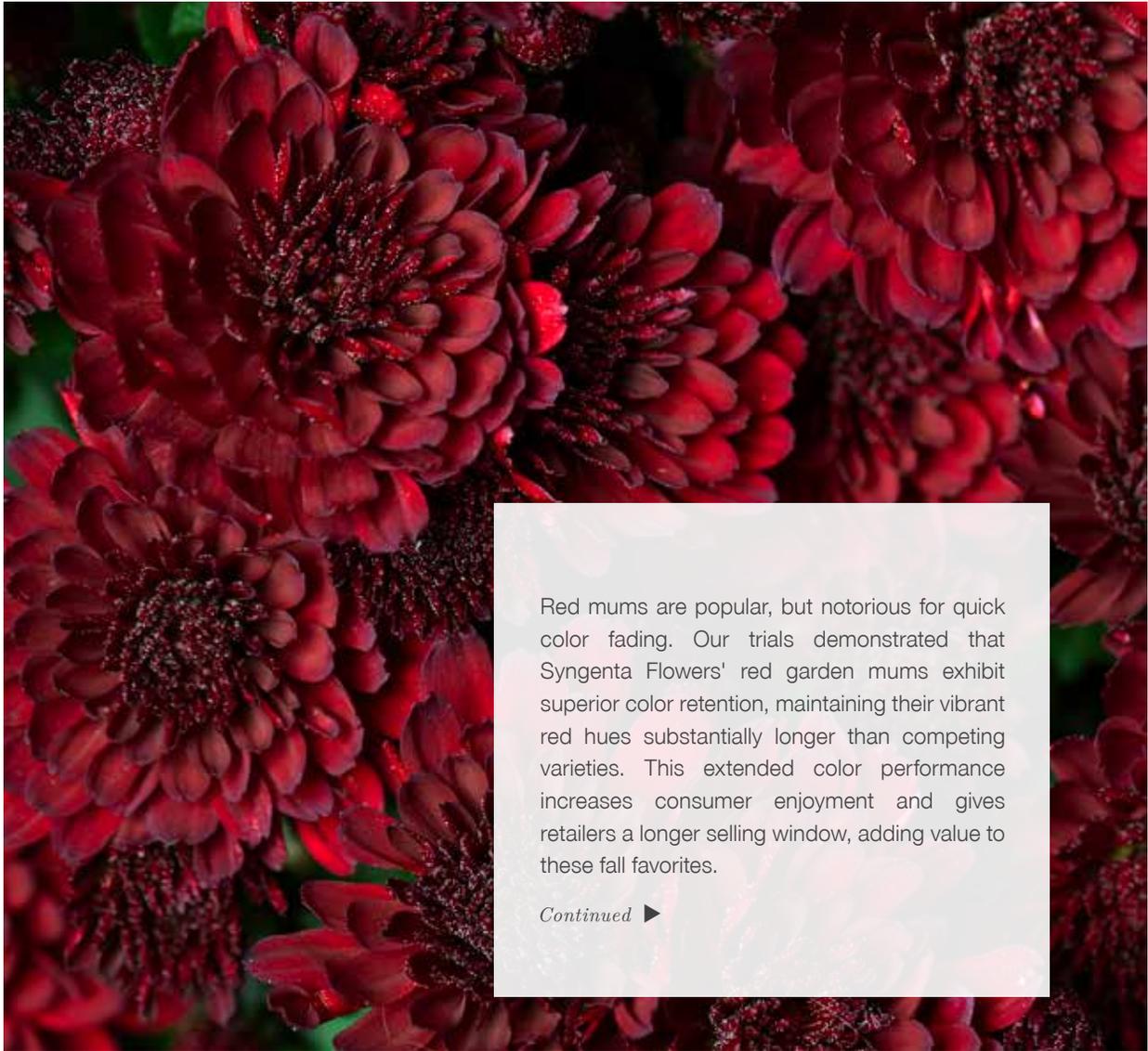
Trial Details: Lucas Greenhouses, NJ September 2024 – October 2024.

Connect with your Syngenta Flowers Area Manager so they can assist in setting up trials, allowing you to see our mums in action and determine the best fit for your program!

POSTHARVEST FLOWER LONGEVITY

Speaking of color longevity, when selecting varieties, consider both field performance and consumer satisfaction. Our trials this year featured weekly photographic tracking, and revealed that Syngenta Flowers Garden mums maintain their rich, vivid colors longer than competitor varieties.

Continued ►



Red mums are popular, but notorious for quick color fading. Our trials demonstrated that Syngenta Flowers' red garden mums exhibit superior color retention, maintaining their vibrant red hues substantially longer than competing varieties. This extended color performance increases consumer enjoyment and gives retailers a longer selling window, adding value to these fall favorites.

Continued ▶

SELENA RED

CALENDAR WEEK

	38	39	40	41	42	43	44
Selena™ Red 70077161 Syngenta Flowers							
Camina Red GediFlora							
Homerun Scarlet Dümmen Orange							



SYNGENTA FLOWERS
Combo Recipe

1. Josephine Red Garden Mum (1ppp)
2. Barbican Yellow Red Ring Gaillardia (1ppp)
3. Endurance Sunset Gold Marigold (1ppp)

MORE FUN WITH MUM COMBOS

This past season we also experimented with creating unique custom Garden Mum combos to add value and curbside appeal at retail. Taking some of our favorite season-extenders both seed, vegetative, annuals and perennials, we were able to come up some pretty amazing combos! Pictured here is the teams #1 Favorite combo that includes Josephine™ Red, Barbican™ Yellow Red Ring and Endurance™ Sunset Gold (Photo taken week 38, 2024). *Continued* ►

GROWER RESOURCES FOR BUILDING AND GROWING GARDEN MUM PROGRAMS

Our commitment to delivering high-quality, long-lasting genetics, is also supported by a range of comprehensive grower resources. Located in the Garden Mums and Asters Landing Page, you can find our Grower Success Guide, At-A-Glance tables, and our Fresh-All-Fall variety guide.

- Grower Success Guides: Provides spring program recommendations as well as important technical notes for Black cloth and California & West Coast programs.
- At-A-Glance Tables: Quick reference tools for variety characteristics.
- Fresh-All-Fall Variety Guide: A comprehensive overview of our garden mum portfolio, providing region specific variety recommendations timing helping growers select the perfect varieties for their programs.

OTHER RESOURCES LOCATED ON OUR WEBSITE TO INCLUDE:

- Garden Mum Culture + Technical Growing Tip Supplemental Guide
- Natural Season Fast Crop Tech Sheet
- Protecting Garden Mums Against Soilborne Diseases Tech Sheet

These resources are designed to equip growers with the knowledge and techniques needed to deliver successful garden mum programs that impress at retail and post-consumer purchase.

As we continue to innovate and refine our garden mum offerings, Syngenta Flowers remains committed to the principle that outstanding performance is the foundation of success for everyone in the horticultural chain – from growers to retailers to end consumers.

For complete culture information, tools and resources, please visit <https://www.syngentaflowers-us.com/>. Be sure to sign up for our emails so you can stay up to date on the latest news, events and culture recommendations!

Lauren Kilpatrick is a Technical Trial Manager for Syngenta Flowers North America. All photos are either the property of Syngenta or are used with permission.

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MELANIE BRONZE



SETTING THE STANDARD FOR SUSTAINABILITY:

By incorporating an average of 50% recycled content with a **minimum of 3rd party certified 10% PCR** (Post-Consumer Recycled) content into our horticultural containers, HCxCHG continues to set the industry standard.

Scan to
learn more:





PLASTIC REGULATIONS

By Tom Marting, Director of Sustainability, The HC Companies

Are You Prepared?

Due to growing concerns about their environmental and human health impacts, many plastic products are becoming regulated materials, similar to products that contain mercury or lead. These kinds of regulations have been in place in Europe and Canada for several years and are now coming into effect in several US states. These laws and rules place new obligations on the producers or brand owners of plastic products. And it is the responsibility of every company to know their legal obligations and ensure their compliance.

DIFFERENT LAWS, DIFFERENT REQUIREMENTS

There are a few different types of regulations that affect producers in different ways. One kind of regulation requires minimum amounts of Post-Consumer Recycled (PCR) plastics in certain plastic products. An example of this is New Jersey's Recycled Content Law (or P.L. 2021, c. 391), which went into effect in 2024 and requires all rigid plastic containers sold in the state to have at least 10% PCR content. Producers must register with the state and provide documentation showing that the products they sold comply with this requirement, which increases every few years so that eventually all regulated products will have 50% PCR content.

Extended Producer Responsibility (EPR) is another type of law that requires producers to pay fees based on the weight and specific type of plastics they sell within the state. Under these laws the costs for the collection and recycling of single use plastics or other types of packaging is shifted from the taxpayers of the state to the producers and marketers of the products, with the funds going to expand recovery and recycling infrastructure in the state. Examples of EPR laws are Oregon's Plastic Pollution and Recycling Modernization Act (or SB-582 signed in 2021 and coming into effect in 2025) and California's Plastic Pollution Prevention and Packaging Producer Responsibility Act (or SB-54 signed in 2021 and coming into effect in 2027). The responsibility generally falls upon the brand owners who are offering products for sale to comply with the regulations. The states designate a non-governmental

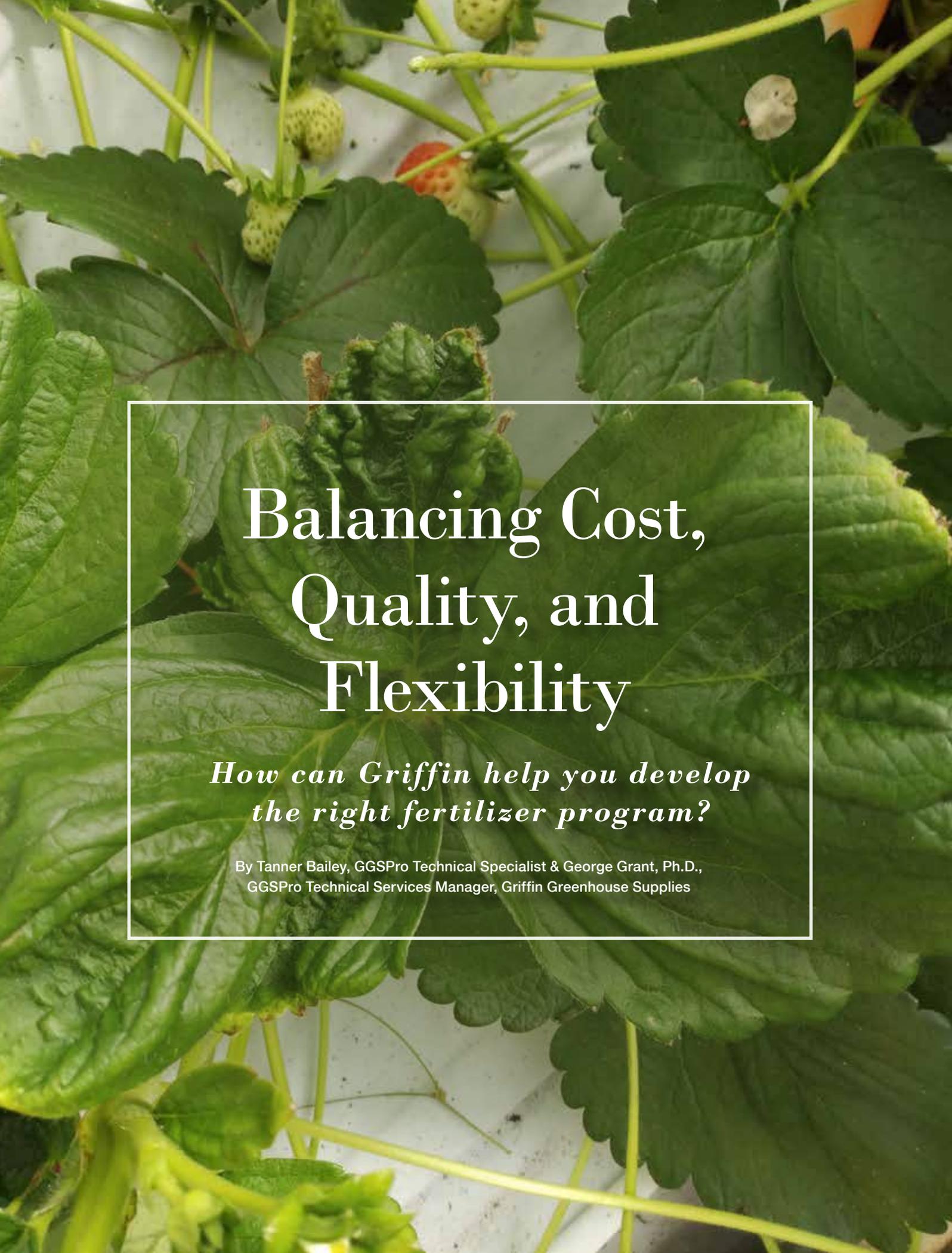
organization called a Producer Responsibility Organization (PRO) to represent regulated industries to the state, set targets, collect fees, and ensure compliance. Circular Action Alliance has become the PRO for most US states implementing EPR laws.

Yet another kind of law restricts how plastic products are marketed and what unqualified claims producers can make about their products with the intent to prevent misleading or false environmental claims about products like plastics, sometimes called Greenwashing. An example of this is California's Truth in Recycling Law (or SB-343 signed in 2021 and coming into effect in 2026). Among other provisions, these laws prevent unqualified claims that products are recyclable unless the producer can demonstrate that their products actually are being recycled at high rates of recovery with at least 60% of the state's population having access to recyclers that will take it. These laws also prohibit the use of the "chasing arrows" symbol around the plastic resin ID codes on plastic products unless they meet the criteria for being recyclable.

NEXT STEPS

These laws are new, and they are complicated. Therefore, it can be difficult and confusing to be sure if you're in compliance. So what should a company do next? The first step is to find legal counsel or compliance consulting services to help determine what legal obligations you might have, if any, under these new laws. Then, check with your supplier or distribution partners so that the products you are purchasing meet these obligations. A good plastics supplier will have resources to help customers understand these laws and can provide documentation and certifications to demonstrate that their products meet these regulatory requirements.

Disclaimer: The information in this article may be incomplete, incorrect, or out-of-date. This article is presented for informational purposes only and does not constitute legal advice.



Balancing Cost, Quality, and Flexibility

*How can Griffin help you develop
the right fertilizer program?*

By Tanner Bailey, GGSPRO Technical Specialist & George Grant, Ph.D.,
GGSPRO Technical Services Manager, Griffin Greenhouse Supplies

INTRODUCTION

Griffin Greenhouse Supplies provides technical support and cultivation inputs for cannabis and edible producers of all sizes across the country. Water soluble fertilizers (WSF) are a major input for most production strategies within these industries due to their flexibility in nutrient delivery, numerous options available, and cost in use. Growers should not be afraid to continuously search for ways to enhance fertilizer programs through identifying high quality sources that are reliable and competitively priced. Moreover, understanding that “things are not set in stone” when creating and adjusting a fertilizer plan can empower growers to make strategic changes that maximize yields, enhance quality, and drive profitability. This article will touch on some of the services Griffin’s GGSPRO team provides as well as important considerations to be aware of when building and manipulating fertilizer strategies.

STEP 1: KNOW YOUR WATER & KNOW YOUR SYSTEM

Although the use of reverse osmosis (RO) filtration is common within CEA, many growers will forgo this technology in hopes of working with their existing irrigation water source. With that said, “what’s in your water?” is a very important question GGSPRO will be asking before creating a fertilizer program. Be sure to use a reliable horticultural water testing lab such as JR Peters, the producers of Jack’s Fertilizers (Lab Testing Services - JRP Lab Services | Allentown, PA | JR Peters Inc) to ensure the proper analytes are being measured. Regardless of whether your water source comes from a well, pond, or municipality, water quality can vary significantly by location and change over time, making annual water testing the minimum recommendation.

The easiest way to think about it is that the salts in your water can be considered “free fertilizer” that contribute to our overall nutrient targets such as calcium (Ca^+), magnesium (Mg^+), and iron (Fe^{+2}). Some water components such as alkalinity (HCO_3^-), sodium (Na^+), and chloride (Cl^-) can provide challenges to production when they are provided in excess amounts. Ensuring the optimal pH of your growing media also falls into understanding your starting water quality. High alkalinity water sources may require acid injection (e.g., sulfuric, phosphoric, nitric, or citric acid) to prevent continual rise in media pH over time which leads to micronutrient deficiencies. In hydroponic situations or when inert hydroponic media is used, managing both the solution pH and alkalinity are equally important. Besides water quality, your current or future infrastructure will directly impact how we plan to deliver nutrition to plants. The use of bulk reservoirs versus stock tanks with injectors as well as knowing how they are oriented, connected, or isolated within your facility will come into play as a fertilizer plan is being developed and adjusted. Infrastructure can provide benefits or limitations to optimizing nutrition and reducing labor. Reach out to Griffin’s Construction Department on ways you can increase flexibility within your current or future production space.

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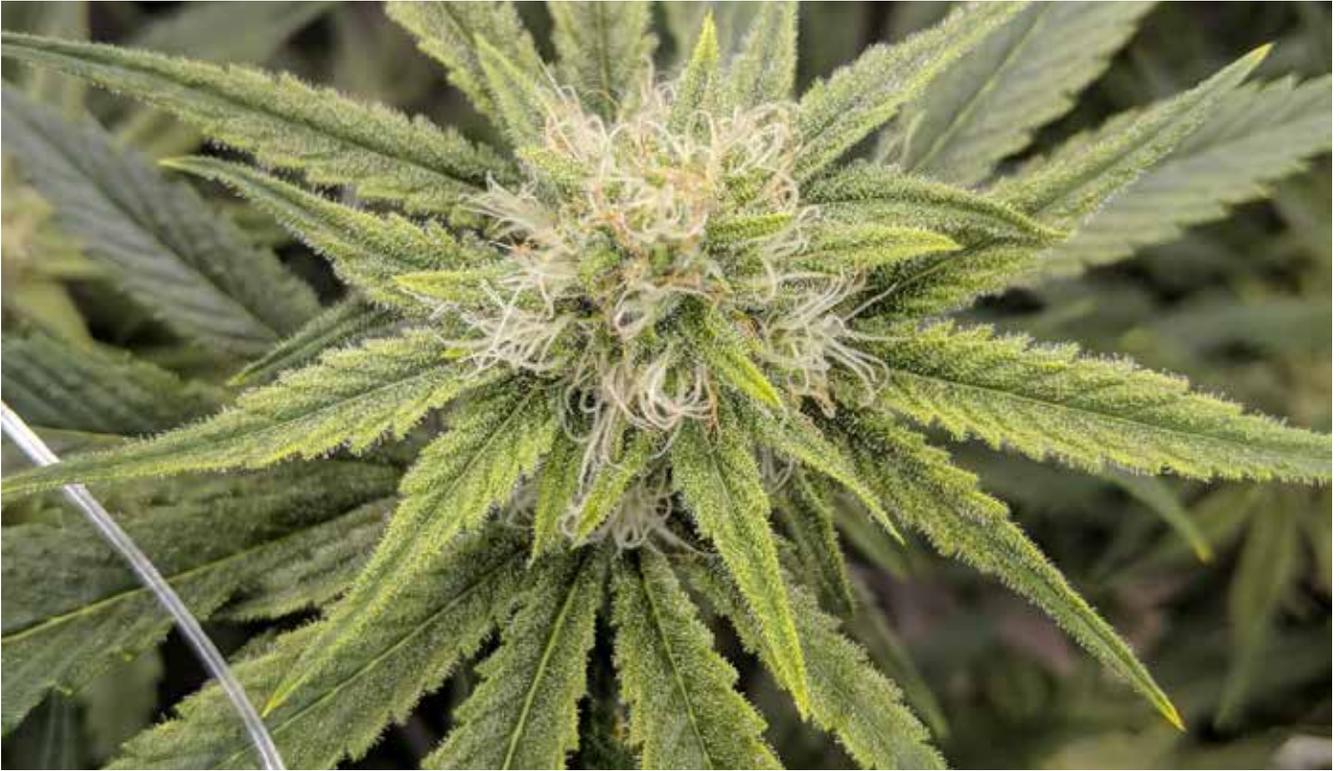


FIGURE 1: Onset of iron (Fe) deficiency in cannabis due to high soil pH. Management needed through neutralization of water alkalinity using acid.



FIGURE 2: Calcium deficiency in hydroponic strawberry during fruit set. Low calcium in starting water quality requires a calcium fertilizer straight such as calcium nitrate.



FIGURE 3: Late-season potassium deficiency in high-wire greenhouse tomatoes. Growers can increase potassium levels using sources like potassium sulfate.

STEP 2: KNOW YOUR NEEDS & KNOW YOUR OPTIONS

Once we know what's in your water and what system we have to work with in delivering nutrition, we then want to know the desired nutrient targets (i.e., ppm per nutrient) based on your needs, crop genetics, and production environment. When in doubt, we're happy to offer baseline fertilizer targets informed by years of experience, research, and grower feedback. Producing a fertilizer program involves an understanding of chemistry. Essentially, the vast majority of our nutrient inputs or "salts" come from fertilizer "straights". You can generally find this information in the "Derived From" statement below the fertilizer label's Guaranteed Analysis. Calcium nitrate, potassium nitrate, monopotassium phosphate (MKP), and magnesium sulfate (Epsom salts) are common straights heavily relied upon as sources of primary and secondary nutrients. Understanding the fertilizer straights on the market allows us to mix and match these tools with other bagged nutrients to reach desired nutrient targets. Over the past several years, both cannabis and edible hydroponic production has transitioned to more simplified programs that rely on two primary components for majority of their macros and micronutrients (e.g., Jack's Part A 5-12-26 and Jack's Part B 15-0-0) coupled with one or two straights to boost particular nutrients. We leverage all available fertilizer tools, our knowledge of solubility rules, and theoretical calculations to develop simple, repeatable, and cost-effective fertilizer programs tailored to your specific system.

STEP 3: KEEP STRIVING FOR IMPROVEMENT

Success in plant nutrition isn't a one-time achievement—it's an ongoing process of refinement. Growers should consistently measure success by tracking key data points such as electrical conductivity (EC), pH, and tissue test results to ensure their fertilizer program is delivering optimal results. Allocating time, space, and labor for trialing new fertilizer recipes or plant stimulants can help uncover opportunities for better growth, quality, and cost savings. Proactively addressing nutritional issues before they arise is critical for maintaining plant health and preventing yield loss. Regular monitoring of nutrient levels, paired with timely adjustments, helps growers stay ahead of potential deficiencies or imbalances. Whether you need guidance on adjusting fertilizer rates, troubleshooting an issue, or exploring innovative solutions emerging in the market, GGSPro is ready to assist. Connect with your local sales representative or our team directly via phone, email, and virtual meetings to discuss how we can support your operation in achieving consistent, high-quality results.

SUPPORT IS HERE AT GRIFFIN

Beyond the myriad of technical services Griffin's GGSPro team provides, there are also several valuable tools available online for calculating different fertilizer scenarios as well as double checking fertilizer calculations such as Back Pocket Grower (<https://www.backpocketgrower.org/>) and FertCalc (<https://e-gro.org/fert-calc/fert-calc/dist/>). AlkCalc (<https://e-gro.org/alkcalc/dist/index.html>) is also a helpful calculator for determining acid injection rates when wanting to manipulate alkalinity levels and solution pH. Connect with Griffin's CEA Department and GGSPro today to develop a plant nutrition strategy tailored to your needs. A single conversation can open the door to new opportunities, helping you optimize growth, quality, and profitability. With a dedicated support team ready to assist, Griffin is just a phone call or email away. Email GGSPro at ggsprotech@griffinmail.com.



Ready To Improve Plant Quality And Health?

Readily available, completely water soluble, for the correction of iron deficiencies.
Enhance Plant Health and overall Quality.

IRON 6% EDDHA

A stable, water soluble iron source with EDDHA chelate. Iron stays readily available to plants for longer, improving plant quality and health. Compatible with a wide range of fertilizers and pesticides.

FEATURES:

- Stable in a pH range of 3.5-10
- For correction of iron deficiencies in alkaline conditions
- The reliable red iron

GUARANTEED ANALYSIS:

Iron (Fe) (chelated)

6.0%

ppm Fe	oz. / 100 gallons
10	2.2
20	4.4
30	6.6
40	8.8
50	11.1

50LB
67-12904

IRON 11% DTPA

A completely soluble iron source with DTPA chelate. This low sodium option can be applied either foliarly or to the roots. Compatible with a wide range of fertilizers and pesticides.

FEATURES:

- Stable in a pH range from 1.5-7
- For correction of iron deficiencies in slightly acidic to slightly alkaline conditions
- Ideal for use in hydroponic systems

GUARANTEED ANALYSIS:

Iron (Fe) (chelated)

11.0%

ppm Fe	oz. / 100 gallons
10	1.3
20	2.6
30	4.0
40	5.3
50	6.6

5LB
67-12905

50LB
67-12906

5LB
67-12907





SOLUTIONS DEVELOPED FOR YOU AND YOUR NEEDS.

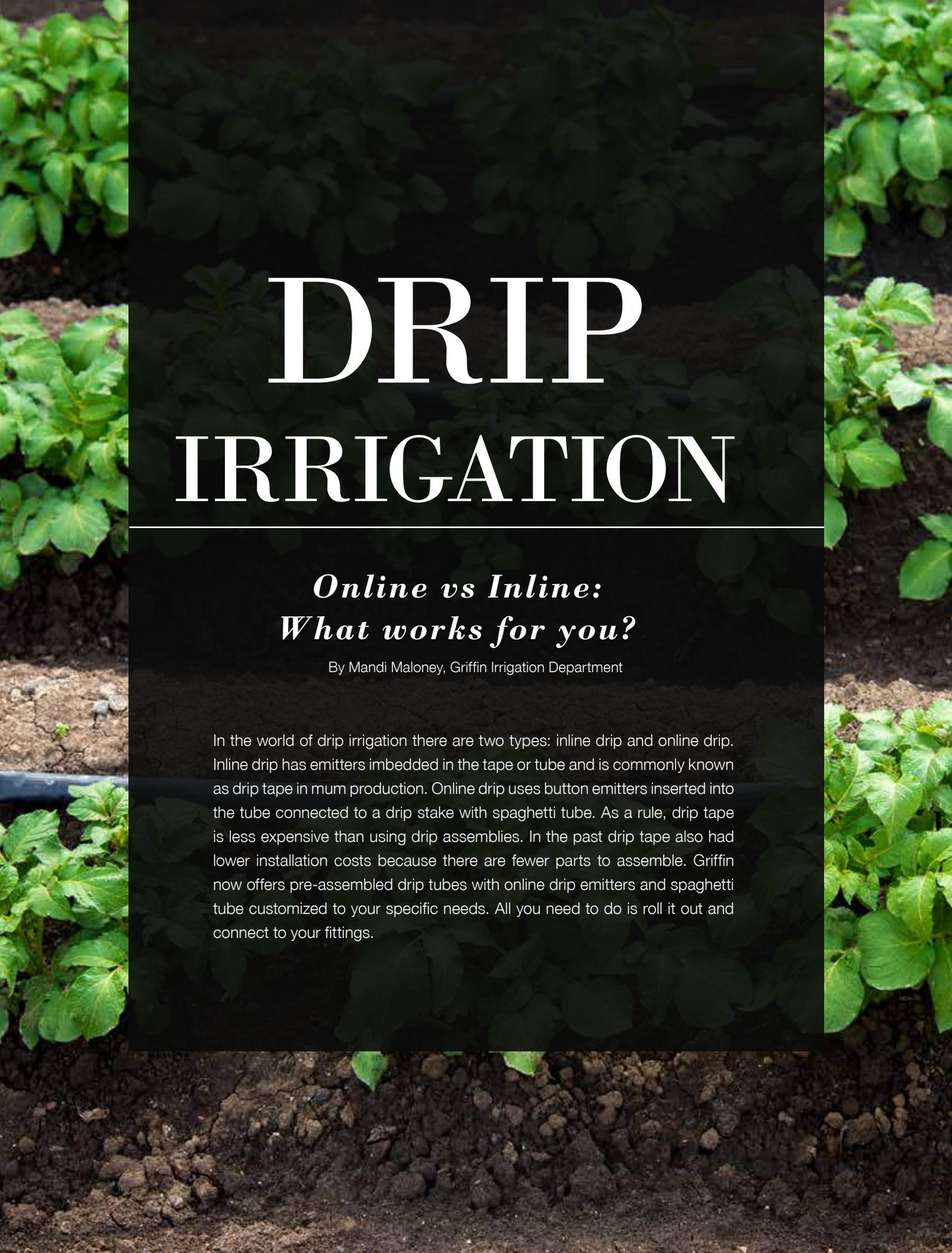
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DRIP IRRIGATION

Online vs Inline: What works for you?

By Mandi Maloney, Griffin Irrigation Department

In the world of drip irrigation there are two types: inline drip and online drip. Inline drip has emitters imbedded in the tape or tube and is commonly known as drip tape in mum production. Online drip uses button emitters inserted into the tube connected to a drip stake with spaghetti tube. As a rule, drip tape is less expensive than using drip assemblies. In the past drip tape also had lower installation costs because there are fewer parts to assemble. Griffin now offers pre-assembled drip tubes with online drip emitters and spaghetti tube customized to your specific needs. All you need to do is roll it out and connect to your fittings.

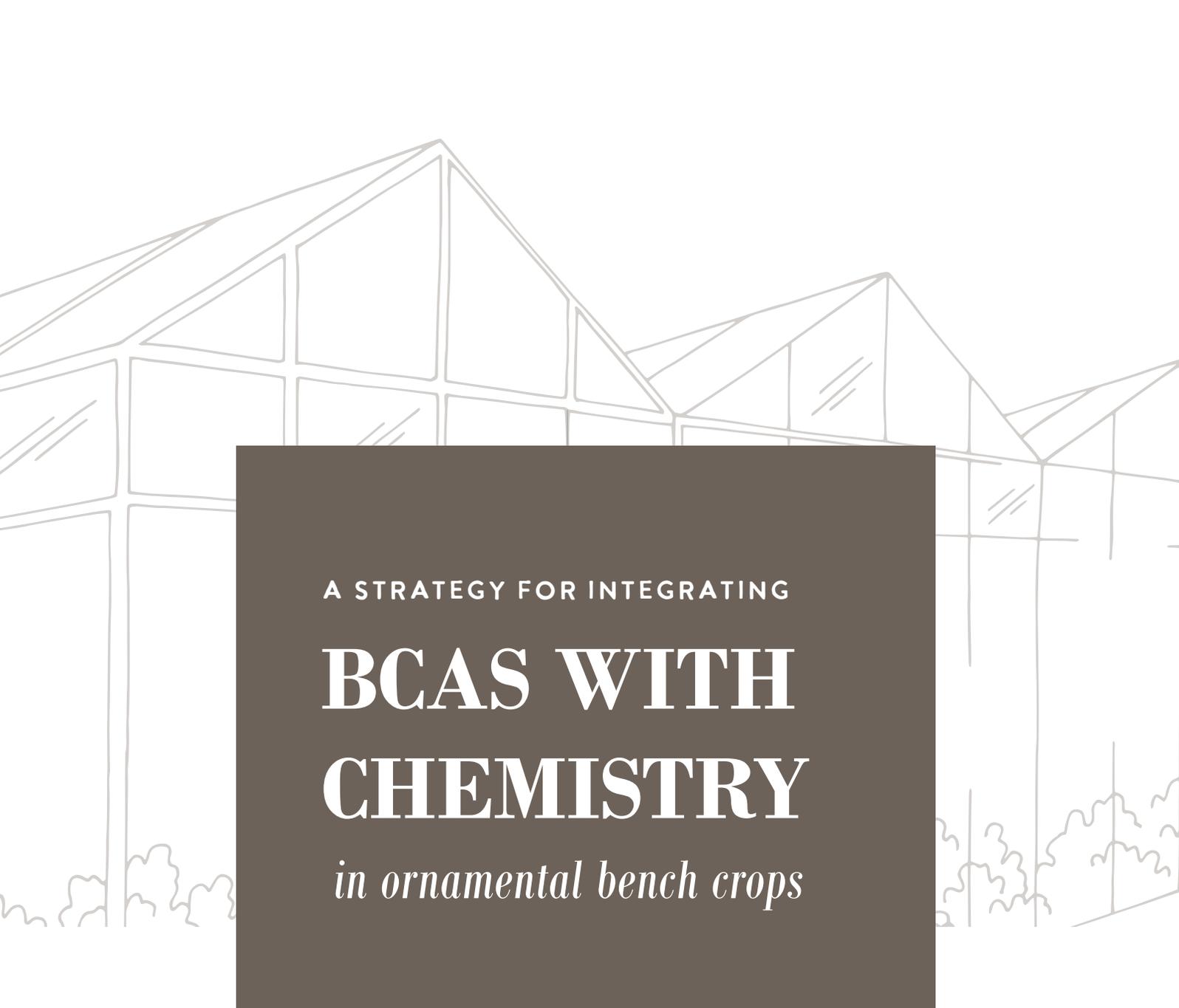


Now that labor costs are the same for both inline and online drip: let's re-evaluate which is the best fit of your operation. When choosing whether inline or online drip is right for you consider four factors: finished product size, operation size, site conditions, and harvesting method.

- **Product Size:** Drip tape works well for 8"-9" mum pans but may not provide enough water for larger 12"-14" decorative pots with multiple plugs. Online drips are better for premium containers.
- **Operation Size:** Drip tape is cost-effective for large-scale production (sold in 3,000-9,000 ft rolls), whereas online drip is better suited for smaller growers with less than 1,000 mums in production.
- **Site Conditions:** If your site has more than a 2% slope, online drip is better at keeping pressure constant throughout the line while delivering water directly to the plants.
- **Harvesting Method:** Drip tape is ideal for full-line harvesting, while online drip is better for intermittent crop removal, preventing uneven water distribution.

Is cheaper always better? Drip tape is best for large operations with smaller pots, flat terrain, and full-line harvesting. Online drip offers flexibility, better pressure control, and less breakage. You may even use both—drip tape for small pots and online drip for premium containers. Griffin can help you with both options.

To learn more about our custom pre-assembled drip tube visit Griffins.com and click on our banner. For drip tape and other irrigation inquiries contact your sales rep, call **800-888-0054** and ask for an irrigation specialist, or email irrigationdept@griffinmail.com.



A STRATEGY FOR INTEGRATING

BCAS WITH CHEMISTRY

in ornamental bench crops

By Allie Allgeyer & Elwood Roberts, GGSPro Technical Specialists, Griffin Greenhouse Supplies

AN INTRODUCTION TO BIOLOGICALS

Biological control agents (BCAs) such as predatory mites, parasitic wasps, and beneficial nematodes, in combination with microbial insecticides, are gaining widespread use among ornamental greenhouse growers. This shift is driven by factors such as the diminishing effectiveness of conventional pesticides, limited options for adequate spray rotations, and evolving legislation. As growers explore these alternatives, many are curious about how easily these products can be integrated into their existing pest management programs.

Rather than completely replacing chemical treatments with biological agents, we encourage growers to gradually incorporate BCAs and microbial products into their specific production scheme. This approach allows growers to maintain a balanced strategy, especially in cases where BCA programs might be disrupted (due to delayed shipments or labor shortages) or when pest pressure becomes overwhelming. It is crucial for growers to keep corrective pesticides on hand as a complementary tool—allowing them to address pest outbreaks while still supporting the beneficial populations they have worked to establish.

Microbial pesticides including azadirachtin products (e.g., Aza-Direct, Azatin O, AzaGuard EC, and Molt-X), *Beauveria bassiana* (e.g., BotaniGard WP/ES and Velifer), *Bacillus*-based formulations (e.g., Cease, Triathlon BA, Stargus, Gnatrol, and Dipel Pro), and Grandevo CG, offer significant advantages over conventional chemical pesticides. These biological products typically exhibit little to no resistance development, shorter restricted entry intervals (REIs), and require minimal personal protective equipment (PPE), all while providing good plant safety. These benefits make microbial pesticides an attractive addition to any grower's pest management toolkit.

While oil and insecticidal soap products are not considered biological pesticides, they fall into the category of 'softer' chemistry, like bios. These products are also useful for resistance management due to their physical modes of action. However, it's important to be aware that certain oil, soap, and azadirachtin-based products can cause phytotoxicity if misused. To minimize risk, avoid applying these products during periods conducive to slow drying conditions or high temperatures and humidity (particularly when temperatures exceed 85°F).

By reserving conventional pesticides for cleanup before sales or as a "rescue" option during outbreaks, growers can protect their crops and maintain the long-term efficacy of both biological and chemical pest control strategies.

This following strategy explores options for common pest challenges in ornamental greenhouse production and offers guidance on effectively using biological products to support a successful growing season.

INTEGRATION STRATEGIES FOR BENCH CROPS

An effective strategy for bench crops should include regular releases of BCAs and targeted sprays of biopesticides to help reduce pest pressure without jeopardizing BCA populations. Treat all incoming materials with biopesticides while still in the plug stage.

1. Early Season - Preventative BCA releases begin as soon as the benches are full.

- Start with *S. feltiae*, *Stratiolaelaps scimitus*, and *Dalotia coriaria* at the soil level for fungus gnat larvae and late stages thrips as they fall to the soil to pupate.
- Early releases of *A. cucumeris* will hunt in leaf buds for the first stage of thrips larvae.
- *Chrysoperla carnea* (Lacewing larvae) are good generalist hunters; excellent at controlling aphids. Additionally, a combination of the parasitoid wasps *A. colemani* and *A. ervi* will parasitize the four most common species of greenhouse aphid.

2. Early Season - Begin targeted sprays of biopesticides in response to weekly scouting reports.

- If releases are made biweekly, time the sprays to get a "knockdown" of the pest population 3-4 days prior to the next release.
- Azadirachtin products (natural insect growth regulators) have a synergistic effect when combined with biopesticides (e.g., Azatin O + BotaniGard WP).

Continued ►

3. Mid-Season - Adjust BCA rates as the canopy develops for problem crops.

- BCAs at the soil level only need to be introduced to new transplants, although *S. feltiae* is useful as a curative for fungus gnat or thrips outbreaks.
- Continue regular releases of *A. cucumeris* throughout the crop cycle; consider replacing it with *A. swirskii* when the greenhouse reaches 77°F average daily temperature (ADT).
- Crops that frequently develop spider-mite issues receive releases of *P. persimilis* as soon as the pest is detected.

4. Late Season - Consider conventional chemical applications during favorable pest breeding conditions.

- Oil-based products are not compatible with BCAs but have short residual effects. They are a key element in rotations targeting highly resistant pests such as spider mites and mealybugs.
- There are late-season drenches that have minimal impacts on BCAs (e.g., Mainspring, Kontos, Endeavor, and Altus).
- By reserving chemistry for this moment, we can expect that several bloom-safe chemistries that target specific pests will be more effective. Some chemistry is BCA compatible, but economics will dictate whether it is realistic to continue releases on a specific problem crop.



FIGURE 1: Lacewing Larvae (*Chrysoperla carnea*) used as a primary control for aphids but also a generalist for thrips and mealybugs.



FIGURE 2: Beneficial nematodes (*S. feltiae*) for fungus gnat larvae and thrips pupae in the soil.

One successful strategy for hanging baskets reverses the order of application above and introduces BCA compatible drenches of conventional chemistry early in the crop cycle. Aphids are often a late season problem in hanging baskets, even with a well-executed BCA program. In this scenario, we treat the baskets with BCAs and biopesticides while they are on the bench, including a sachet of *A. cucumeris* before hanging for five weeks of residual thrips control. Once hung, they are drenched with long-lasting chemistry that protects them from other pests, such as aphids, for four to six weeks, or potentially well into the crop cycle.

While biological control programs may not be suitable for every grower or situation, understanding the principles behind their use will help growers develop a comprehensive Integrated Pest Management (IPM) strategy. This approach maximizes the effectiveness of all available tools, improving overall pest control outcomes. It's important to note that not all microbial-based products are labeled for every crop, so growers should ensure they are following the appropriate regulations for their specific crops and state.

Dissolved Oxygen Needs Sanitation to be Effective



Reduce Crop Timing by as much as 10 days with properly integrated water treatment.

DO improves root growth, which improves nutrient uptake.



Oxygen alone feeds aerobic biofilms.

Sanitation stops aerobic biofilm from hogging the oxygen before it reaches the plants.



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STAY AHEAD OF WINTER

with the right protection

By Sunmaster/Lumite

As temperatures drop, protecting crops from harsh winter conditions is essential for growers to ensure continued success. Sunmaster Overwintering Film provides a reliable and effective solution to shield plants from frost, wind, and excessive moisture, creating an optimal environment for winter growth and protection. Whether used in a greenhouse, nursery, or open-field application, the proper overwintering film can help maintain plant health and productivity through colder months.

CHOOSING THE RIGHT OVERWINTERING FILM FOR YOUR NEEDS

Every crop has unique environmental needs, making film selection a key decision for growers. Lumite's Sunmaster Overwintering Film is designed to meet a variety of requirements, offering options in light transmission, thickness, and size to suit different climates and crops.

Light transmission and diffusion are among the most critical factors affecting plant dormancy and growth. Sunmaster White Films come in 35% and 55% opacity, providing moderate light reduction while maintaining warmth, making them ideal for general overwintering. The 70% white film offers higher shading, making it suitable for light-sensitive crops that require extra protection from direct sunlight. Meanwhile, clear films allow maximum sunlight penetration, which is particularly useful for early-season growth and propagation.

Another important factor is thickness and durability, determining how well the film withstands weather conditions and how long it will last. Films with a 1.6 mil to 2.4 mil thickness provide sufficient protection for growers in mild climates or short-term applications. For moderate overwintering needs, a 3 mil to 4 mil film offers better insulation and longer-lasting performance. In extreme weather conditions or for long-term use, 5 mil to 6 mil films provide maximum durability and superior protection against harsh winter elements.

Growers also need to consider sizing and installation options. SunMaster Overwintering Films are available in widths ranging from 10 feet to 60 feet, allowing for coverage of various greenhouse and field setups. They also come in multiple folding configurations (4x, 6x, 8x) to make handling and installation more manageable and more efficient.

Selecting the right Sunmaster Overwintering Film ensures that crops remain protected from cold temperatures, wind, and moisture, giving growers peace of mind throughout winter.

REAL-WORLD SUCCESS STORIES WITH OVERWINTERING FILM

Growers across the country have experienced measurable benefits from switching to Sunmaster Overwintering Film, improving energy efficiency, crop survival rates, and overall farm profitability.

A commercial greenhouse grower in New York struggled with heat loss and rising energy costs. After switching to Sunmaster White 55% Overwintering Film, they saw a 30% reduction in heat loss, significantly lowering heating costs and creating a more stable environment for their crops. As a result, they entered spring with stronger, healthier plants and reduced their overall winter expenses.

A specialty nursery in Oregon, known for growing perennials, needed better frost protection while maintaining adequate

sunlight exposure. By using Sunmaster Clear 2.4 mil film, they improved crop survival rates and extended their sales window into early spring. This increased their revenue and allowed them to provide customers with healthy, hardy plants earlier in the season.

An organic vegetable farm in Colorado faced challenges with inconsistent winter temperatures, which negatively impacted the quality of their greens. After switching to Sunmaster White 35% Overwintering Film, they noticed more stable temperatures, leading to improved crop quality and better overall yields. Compared to previous years using standard plastic coverings, this investment resulted in stronger winter harvests and a more reliable product for their customers.

These success stories highlight how Sunmaster Overwintering Film offers practical and measurable benefits, helping growers protect their crops, reduce costs, and extend their growing seasons.

SUNMASTER 2025 OVERWINTER EARLY ORDER PROGRAM

To help growers prepare for the upcoming winter season, Lumite is offering early-order pricing through March 15, 2025.

Growers who place orders exceeding 120,000 lbs will receive a 2% volume discount, while those in Washington, Oregon, and California can take advantage of an additional 3% West Coast Special discount.

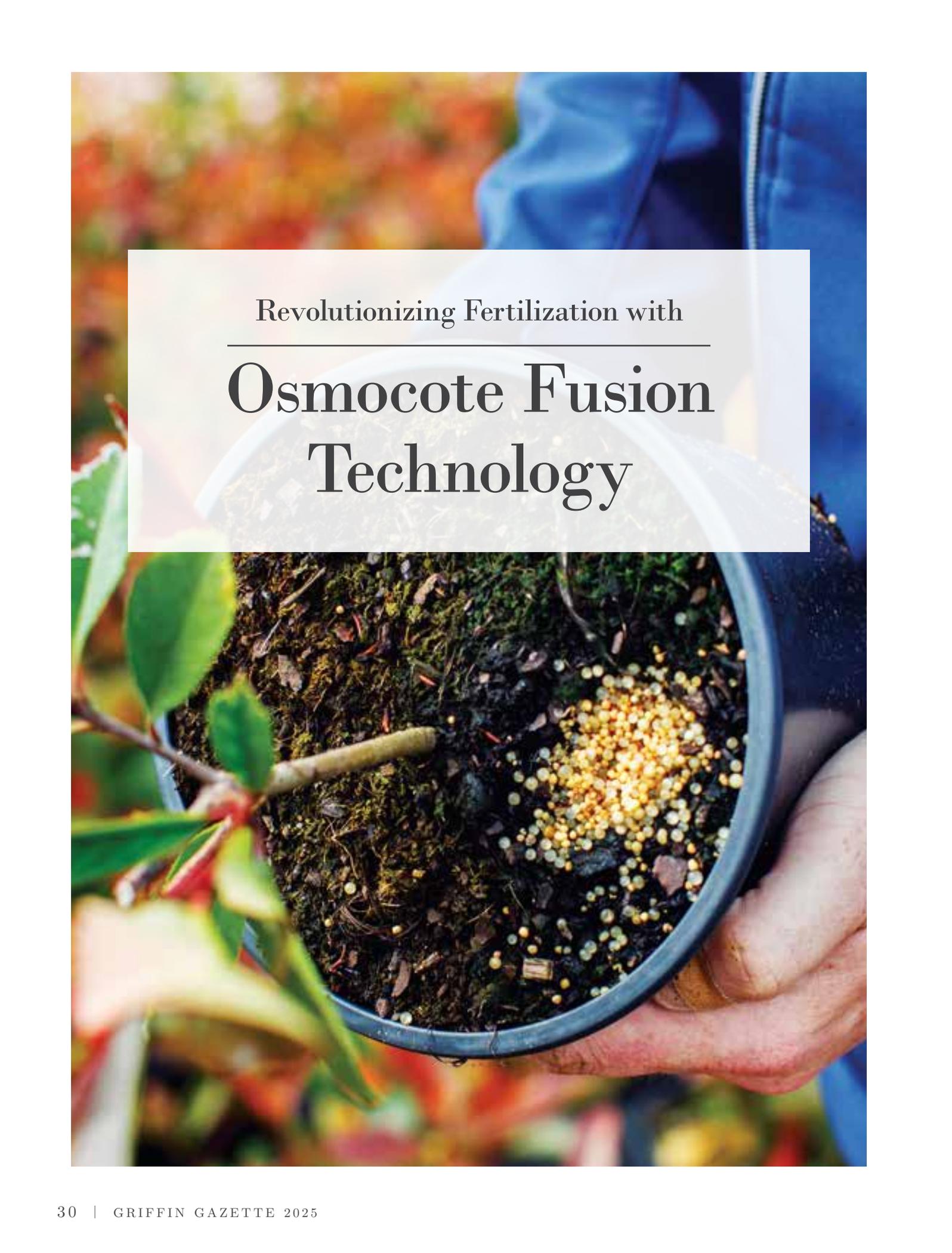
Lumite accommodates various order quantities for convenient ordering. The minimum order starts at 3,300 lbs per width, while container orders begin at 15,000 lbs. For those needing smaller shipments, partial container drop-ship options are available, making it easier for growers to get what they need without unnecessary waste.

By securing Sunmaster Overwintering Film before the early-order deadline, growers can lock in the best pricing, ensure they have the materials needed before peak demand, and guarantee their crops stay protected all winter.

PLAN AHEAD AND PROTECT YOUR CROPS THIS WINTER

As winter approaches, proper overwintering protection is essential for healthy crops, reduced costs, and better yields. Sunmaster Overwintering Film from Lumite is a proven solution that offers durability, light control, and insulation tailored to growers' needs.

With the 2025 Early Order Program, now is the time to plan and secure premium materials at the best pricing. To learn more about Sunmaster Overwintering Film and take advantage of early-order discounts, contact your local Griffin representative today before the March 15, 2025, deadline.

A person wearing a blue jacket is holding a black plastic pot. The pot contains dark soil and a pile of small, yellow, spherical fertilizer pellets. A small plant with green leaves is visible on the left side of the pot. The background is a blurred field of colorful autumn leaves.

Revolutionizing Fertilization with

Osmocote Fusion Technology

By ICL Fertilizers

REVOLUTIONIZING FERTILIZATION WITH OSMOCOTE FUSION TECHNOLOGY

In the world of horticulture, efficiency and effectiveness are key to maximizing growth and minimizing waste. Enter Osmocote Fusion technology, a groundbreaking advancement in controlled-release fertilizers (CRF) that promises to transform the way growers manage their crops.

THE CHALLENGE

For many growers, one of the biggest challenges with surface-applied CRF is keeping the fertilizer in place. Weather conditions, irrigation, and even automated systems can cause fertilizers to spill, leading to significant losses.

THE SOLUTION: FUSION TECHNOLOGY

Osmocote Fusion technology addresses this issue head-on. Utilizing an innovative gelling agent, Fusion technology activates with water, binding the nutrient granules to the growing media. This process dramatically reduces fertilizer loss due to tipping or spillage, ensuring that more nutrients remain available to the plants. The result is a more efficient use of fertilizer, leading to healthier plants and reduced costs for growers.

Research conducted by ICL has shown that Fusion technology can reduce fertilizer loss from tipped pots by up to 60%. In trials, pots treated with Fusion lost significantly less fertilizer compared to untreated pots, even after multiple tipping events. At 28 days, with weekly tipping, the containers with Fusion's sticking agent technology had lost about 22% of their fertilizer to spillage. But the untreated pots, without Fusion, lost 80% of their fertilizer by that time. This reduction in fertilizer loss translates directly into cost savings and improved plant health.

By keeping more fertilizer in the pot and reducing spillage, Fusion technology also offers significant environmental benefits. Less fertilizer on the ground means less runoff into waterways, reducing the environmental impact of horticultural operations. This aligns with the growing emphasis on sustainable and environmentally friendly farming practices.

EASY INTEGRATION

One of the standout features of the new Fusion technology is its versatility. Unlike its predecessor, the improved Fusion can be used with standard Osmocote prills, making it easy to integrate into existing fertilization programs. Growers can simply add Fusion to their current setup without the need for extensive changes or additional equipment.

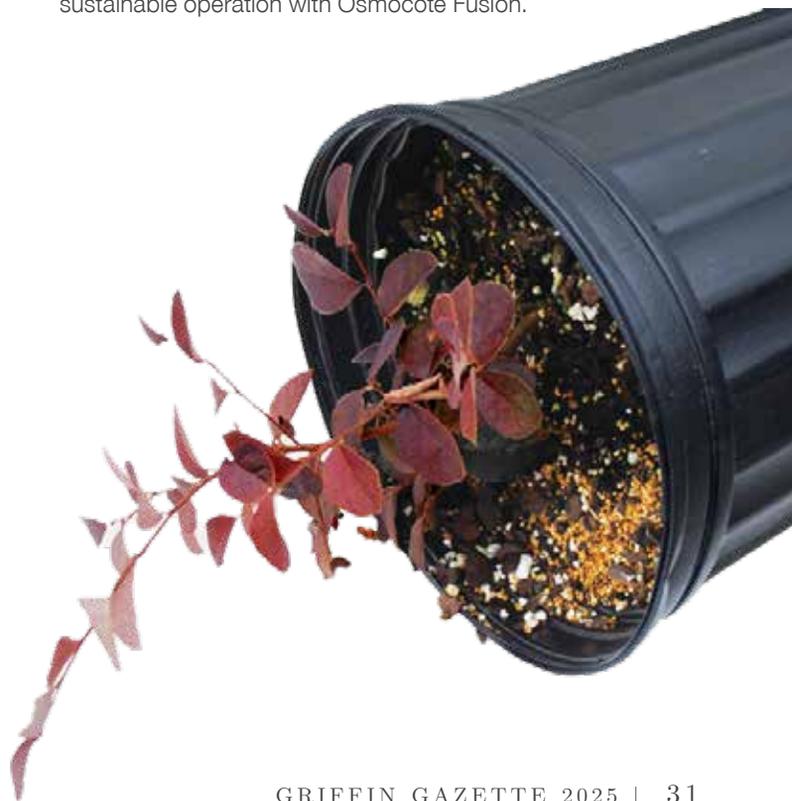
Osmocote Fusion Technology is available in four formulations: 17-5-11, 19-6-9, 20-4-7, and 15-8-11. Regardless of your operation's needs, we have the right product to support your success.

Exciting news! Our new large particle formulations are on the horizon, promising even greater efficiency and performance. Stay tuned for a game-changing addition to the Osmocote Fusion lineup!

CONCLUSION

Osmocote Fusion technology represents a significant advancement in the field of controlled-release fertilizers. By addressing the common issue of fertilizer loss and providing a simple, effective solution, Fusion technology helps growers achieve better results with less waste.

Ready to revolutionize your fertilization process? Contact your local distributor to find the perfect formulation for your growing needs. Take the first step towards healthier plants, cost savings and a more sustainable operation with Osmocote Fusion.





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PERFORMANCE BY DESIGN SINCE 1942

For 80+ years, Lumite has manufactured durable, high-performance fabrics for horticulture and agriculture—helping growers protect plantings, optimize growth, and increase yields.

From greenhouse films to weed control and shade fabrics, our solutions offer UV resistance, durability, and proven reliability for greenhouses, nurseries, and farms.

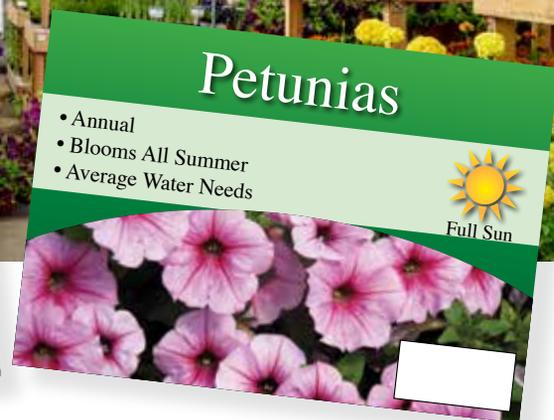
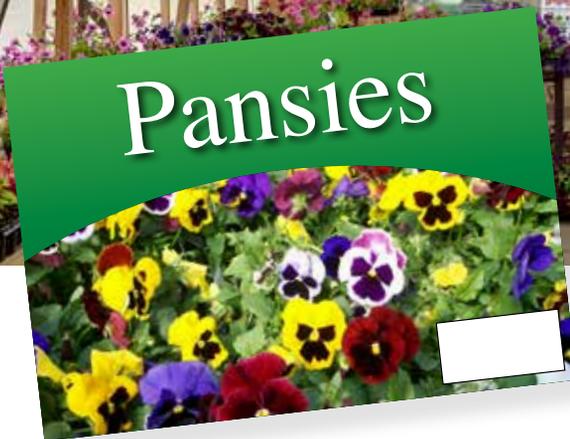
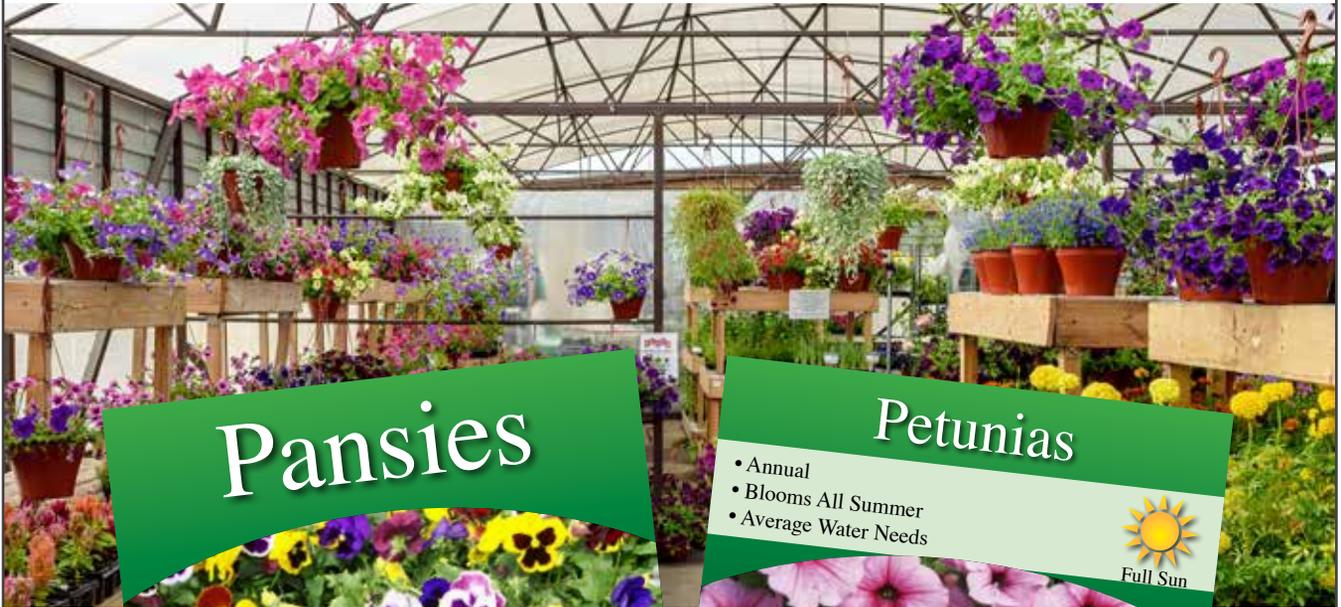


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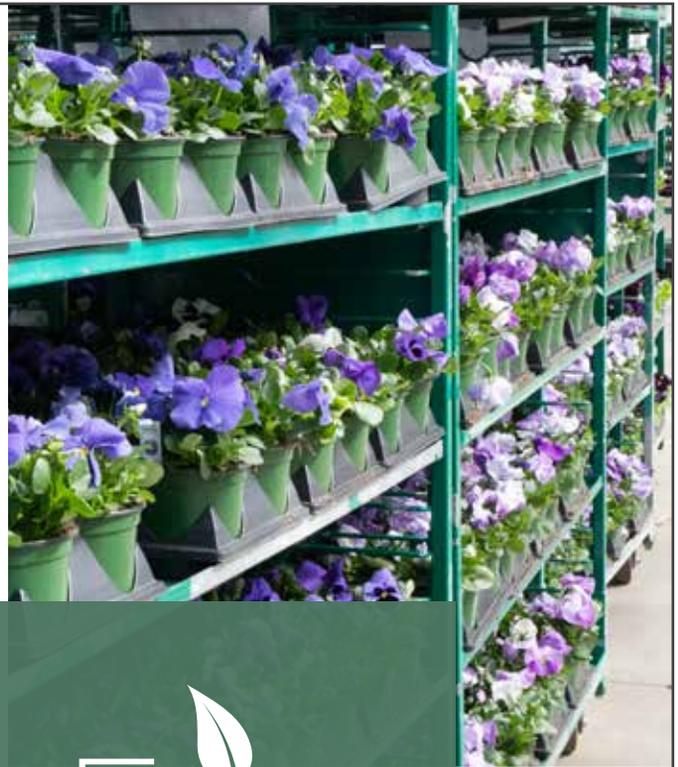
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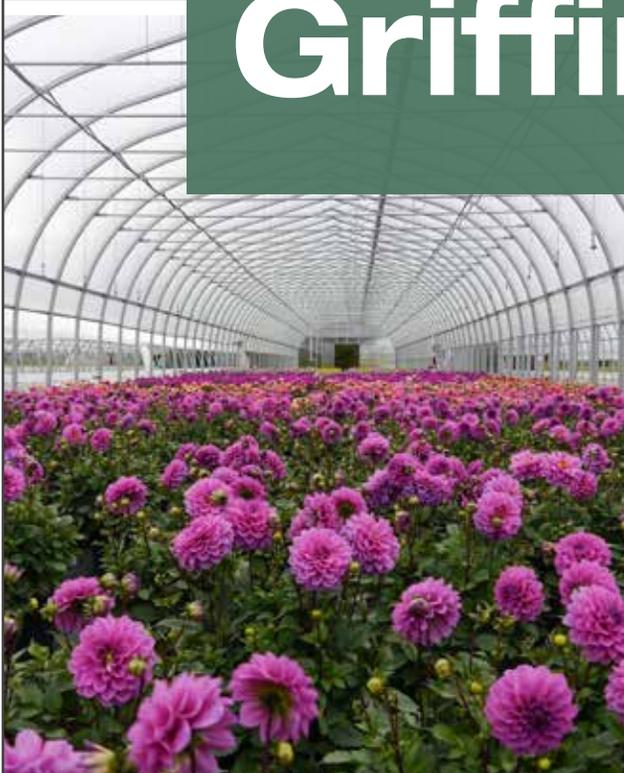
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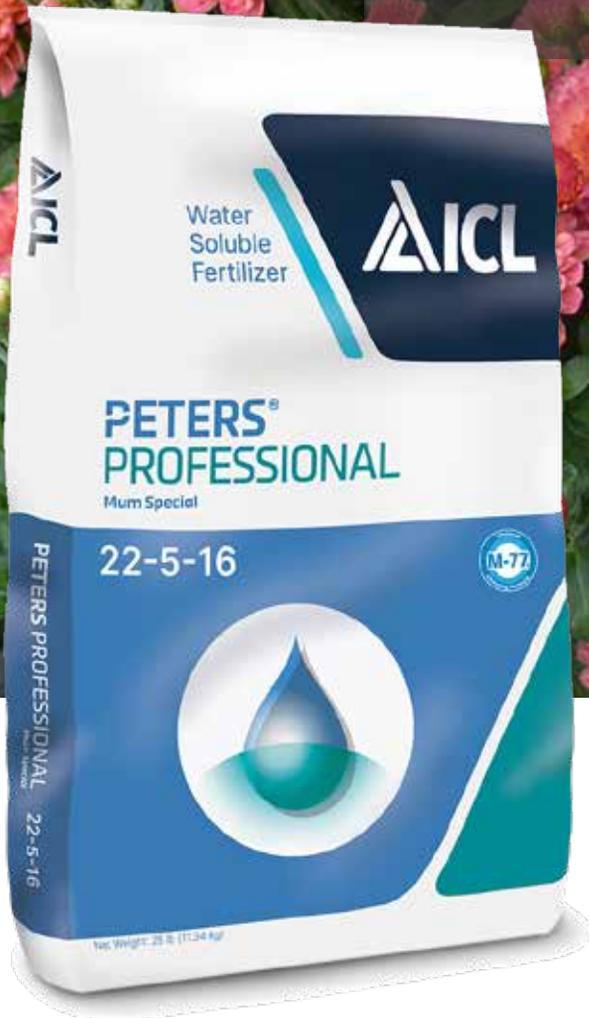
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67-2368	Peters 22-5-16 Mum Special with Black Iron 25LB	25lb	\$51.41	\$38.12
67-1540	ICL 15-9-12 Osmo Plus 8-9 Month Standard 50LB	50lb	\$117.82	\$96.85
74-1418	H2Pro Granule 50LB	50lb ICL	\$208.75	\$156.57
74-1424	H2Pro Liquid 2.5 GAL	2.5 gal ICL	\$269.41	\$202.05
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