

Spring 2010 Issue

Griffin Gazette

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GGSPRO Brings Technical Support to Growers

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\$29.95 (Presentation Library) or \$39.95 (DVD)



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Product Overview

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15 technical grower related presentations. 4-6 new presentations added annually.

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We offer a series of instructional DVD's in an array of areas.

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Insect, disease and herbicide quick reference posters with pesticide recommendations, mode of action, mixing rates and conversion tables to solve your insect and disease problems. Posters available in 11" x 17" and 18" x 24".

Locally Diversified Agriculture: Opportunity Awaits.

By Peter Konjoian



In the next several minutes I'm going to paint a picture of agriculture, first at a high altitude national level and then at a feet on the ground local level. The picture will bring into focus some trends we are experiencing as well as show opportunities waiting to be explored.

At last year's OFA Short Course in Ohio the keynote speaker was Dr. Fred Kirschenmann, Distinguished Fellow at the Leopold Center for Sustainable Agriculture at Iowa State

University. In a nutshell, Dr. Kirschenmann presented a compelling case arguing that our current industrialized system for producing agricultural products is not sustainable.

Industrialization of agriculture

This argument begins by establishing that during the 1930's we chose to industrialize our agriculture industry with the goal of maximizing productivity by applying economic principles that included specialization, simplification, and economies of scale. Industrializing agriculture became widely adopted after World War II and remains the dominant agricultural model in our country today.

A growing list of sobering realities in recent decades now challenges the rationale of an industrialized model. Those realities include an end of cheap energy, depletion of fresh water resources, increasing encounters with unstable climates, the loss of healthy soils, and erosion of biodiversity. To some degree every one of us operating a greenhouse is experiencing one or more of these realities on a daily basis.

Conclusions drawn by Dr. Kirschenmann paint a picture of agriculture that we are beginning to see with increasing frequency. Biodiversity will replace specialization given the fact that complex biological systems are more sustainable than monoculture systems. Our growing interest in biological control of greenhouse pests is a perfect example of the paradigm shift he recommends.

He suggests that the Great Plains should be returned to their natural state as native grasslands upon which animals graze. He also suggests that diversifying agriculture at the local level, that which favors crops and livestock that are natural for a region and local climate, will provide a level of sustainability that cannot be matched by current industrial methods.

The take home message for me from his address is that our view of agriculture needs to change, and fast. But how does returning the Great Plains to natural grasslands translate to how I should operate my greenhouse? The key lies in learning more about managing biodiversity and complex biological systems.

Back on the ground...

One way that this painted picture of national agriculture is cascading down to my interest as a greenhouse operator lies in a new mindset. I'm calling it "Specialize Spring – Diversify Fall" and it's helping me visualize opportunities that await us.

We are fortunate that plant breeders develop new genetics that infuse excitement into our greenhouse businesses. Consumers enjoy new and different plants to complement traditional flowering plants currently

in and around their homes. As a result of this any one of us can offer a unique product mix to our customers that revitalizes the spring bedding plant season, year after year. This is biodiversity in action and we capitalize on it nicely.

Now, having described the spring season with its diversity is completely opposite from other seasons in the floriculture greenhouse. The dominance of the poinsettia as our primary Christmas crop has fueled an industrial approach that has resulted in most of us choosing not to produce it due to unsustainable profitability.

Additionally, with garden mums dominating the fall season they too have been industrialized and more of us are finding that profitability for this crop has diminished as well. Throw in Easter lilies and pot mums and you get a clear picture of what happens as industrialization takes hold. At this point the adjective commodity can be used synonymously with industrialized to describe these crops.

Where's the Opportunity?

Getting back to my Specialize Spring – Diversify Fall model, here's where I think we're heading. Think for a moment about what a family farm looked like before industrialization was adopted. Those farms produced food crops, managed livestock, and were as biologically diverse as one could imagine. Little was wasted in the complex biological setting as animal waste fertilized fields and pastures and crops fed the animals. This is precisely what today's consumers are visualizing as modern day agriculture as well. What goes around comes around as a pre industrial model is emerging again.

Consider the rising popularity of farmers' markets, locally grown produce, and locally grown and butchered meat for a moment. Few doubt that this is just a fad that will soon pass. Most agree that there is a profitable future in locally diversified agriculture. The question becomes...who is going to recognize it, jump in, and service the community.

Back to the specialize spring – diversify fall concept one last time, a message I've shared with fellow greenhouse operators is "If the apple orchard can sell garden mums, why can't the garden center sell apples"? A logical expansion of this thought paints a picture of a greenhouse in the future that extends beyond floriculture crops. That means learning how to produce edible crops in our greenhouses during seasons that are dominated by commodity crops we choose not to produce. In essence, the family farm of the future will probably have greenhouses, fields, livestock, and produce stand/garden center operating within the community as a complex and diverse production unit.

Concluding, many reading this column are nodding their heads and saying this is how they're already operating. To this group I say congratulations. There are also many reading who are shaking their heads saying been there, done that and that they are not interested in returning to the past. Lastly, there's a new generation of young agriculturists chomping at the bit to lead the way into the future. Locally diversified agriculture. Give it some thought as you contemplate whether growing floricultural crops alone is profitable enough for you to make a comfortable living.

Griffin's Quality Plant Assurance By Nanette Marks



This year marks Griffin's 25th anniversary as a plant broker. Even in a slow economy, we are experiencing our strongest growth spurt in two and a half decades. Our success comes from you, our growers, who receive the advantages and benefits of Griffin's Quality Plant Assurance. The integration of services that we provide with the plant products that we offer, provides you with a complete grower package that is unrivaled in our industry.

Our Services

- We currently have 17 plant specialists covering 18 states from Maine to Georgia. They are available to help you with your plant selections, introduce you to new varieties and marketing ideas, and problem solving when things go wrong. During their visits, they can scout your crops; recommend chemicals or fertilizers, and provide general crop care information.
- Each plant specialist is teamed up with a hardgoods specialist who can consult with you on the overall growing environment. This includes your greenhouse structures, heating, ventilation, irrigation, soils and containers.
- As growers, we know that despite choosing the best genetics and creating the ideal growing environment, each year brings a different challenge. We can't control weather extremes or the introduction of foreign insects and diseases, or chemical resistance due to years of over application. This is where our tech team steps in with timely recommendations and grower solutions.
- Your purchases are backed up with the best technical advisors in the industry including Rick Yates, Jim Willmott & Virginia Brubaker. Our tech staff works directly with chemical companies, university professors and disease labs, and is ready with answers and advice. When you purchase plants from Griffin's, assistance is just a phone call away, even in the worst disasters. Growers send samples of plants, or photos of crop damage, stunting, pest identification and other plant anomalies for evaluation. In return, we provide solutions. It's that simple.
- Education is ongoing, both for our sales staff, outside representatives and yes, you, our customer. It is our goal to keep growers informed of the most current products and research in order to grow quality crops. Through GGSPRO, our technical site, we provide growers with regional seminars, workshops, technical bulletins, webinars and DVDs. We strive to make your business successful as well as profitable, with satisfied customers returning each season to purchase plants that will thrive after leaving your greenhouse.

Our Plant Products

- Each year we reevaluate our current plant suppliers and critique how well they are serving the needs of our customers. Needs are ever-changing based on fuel costs, availability of labor, technological advancements, etc. When fuel costs are down, the grower may be better served to open a greenhouse early for propagation, rooting cuttings and growing plugs. High fuel costs or a shrinking labor pool could shift buying decisions towards pre-finished pots or plug and ship flats. We adjust our sources and offerings to meet these needs.
- Changing trends or genetic breakthroughs can greatly alter a grower's plant selection. For example, The SunPatience[®] bred by Sakata and available through Ecke rooting stations were previously exclusive, but are now available to everyone. A full sun New Guinea impatiens that roots in 2 weeks and can be grown cool will have instant appeal to growers, and we must react by ensuring that our supply meets the demand. A revival of foliage plants makes us suddenly put our focus on finding economical means of bringing these products from Florida to northern markets. A considerable amount of research is required to find the highest quality plants, at a reasonable price, with a safe means of affordable shipping.
- Behind the scenes there are other factors that determine a good supplier. Their order fill rates, billing accuracy and timely order confirmations are critical to our customers. A supplier must be able to make substitutions for crop failures, and have some speculation for last minute orders. Communication must be honest and timely so we can keep you informed of crop failures, shortages, and backorders or quality concerns. We know that all the plants you purchase can be obtained through multiple suppliers. Our experience with how each vendor works internally will allow us to "steer" you to the best source for your location. The more attention paid to such details allows for seamless order fulfillment.

Your Success

- Even with all the checks and balances, technical support and product solutions, there will still be obstacles to a grower's success. Plants are a viable living product that sometimes encounters tumbling in boxes, freezing on doorsteps, or hosting uninvited guests in their soil and under their leaves. And suppliers are only human beings shuffling plants around from sowing to shipping that can make clerical mistakes, mix up colors and tags, or incorrectly read quantities and ship dates. Griffin's Quality Plant Assurance follows you through it all, from order placement, to delivery, through crop finishing. To find the plant specialist for your area call 1 (800) 732-3509 or visit us at www.GPSHort.com. For technical assistance with plants purchased through Griffin, call 1 (800) 888-0054 and select option #4. For immediate plant needs, email your list to plantfinder@griffin-mail.com. *Griffin - The Future of Horticulture Has Arrived.*

We have you covered no matter what direction your high tunnel takes you

Poly-Tex

If you are looking for smaller individual high Tunnel, our prices are as low as **\$1.13 sq. ft.** USDA program to fund up to 75% of High Tunnel cost. NRCS program approved.

SOLARFLEX™

SolarFlex from AT Films has been specially engineered to give you the results you want from a high tunnel film.

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Higher First Quality Crop Yield

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Tunnel Tech, The future of Agriculture...today.

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Selecting Herbicides for Outdoor Ornamental Crops in Spring

By Jim Willmott, Technical Services Specialist, GGSPRO



While most growers recognize its importance, weed control in outdoor field and container grown crops remains a formidable challenge. Despite our best efforts, weeds often find a way to exploit the inviting conditions intended only for our crops. Weeds are relentless so to win the war, you need to understand them and your weapons – herbicides. Herbicides provide excellent control, but only with proper selection and application techniques.

First, let's consider the current weed situation: The early spring battlefield is quiet now, but not for long! Most weeds have yet to germinate and emerge, but you may find some winter annuals such as bittercress (photo 1) and chickweed (photo 2). These typically germinate in fall and complete their life cycle before dying in late spring or early summer.

Winter annuals are not a big concern in spring unless they infest and detract from the quality of crops intended for spring sales. The primary targets for now are summer annuals. These germinate in spring and complete their life cycles before frost kills them. Troublesome **summer annuals** include groundsel (photo 3), northern willowherb and yellow woodsorrel. Hopefully you will not be faced with established **perennials**. They will begin to emerge, but little can be done to control them until they increase in size. Postemergence, non-selective herbicides offer some hope later in spring, but make a note to attack in late summer when are the more easily controlled.



Photo 1. Hairy bittercress is one of the most common winter annuals often showing up in containers during overwintering, but it may also germinate in spring.



Photo 2. Common Chickweed is a common winter annual

In choosing between different preemergence herbicides, the most important considerations are crop tolerance, weed history and application equipment. Herbicide safety to crops is highest before bud break on woody plants, or before the emergence of established perennials. Spray applications, which are risky to tender growth, are safer now and they are more economical than granular herbicides. For these reasons, many growers choose to spray at this time of year and switch to granular formulations later when crop safety is a concern. Read labels closely for general safety precautions and as they apply to individual crop species.

If you know which weeds have been troublesome in the past, you can choose products that are most effective on them. Only a couple of active ingredients have a broad enough spectrum of activity to control both broadleaved and grassy weeds. Exceptions are diclofenil (Casoron G) and flumioxazin (SureGuard WDG, BroadStar G). In most situations it is necessary to combine active ingredients. Typically an herbicide that is good on grassy weeds is combined with one that is strong on broadleaved weeds. Many granular products are formulated with two active ingredients. Sprayable formulations contain single active ingredients so they need to be tank mixed (see Table 1). Typically one product, from those that control primarily broadleaved weeds, is tank mixed with one that controls primarily grassy weeds.

For Control of Most Broadleaved Weeds		For Control of Most Grassy Weeds	
Product Name	Active Ingredient	Product Name(s)	Active Ingredient
Tower EC	Dimethenamid-P	Prozalin 4L	Oryzalin
Gallery DF	Isoxaben	Pendulum Aquacap	Pendimethalin
Goal 2XL	Oxyflourfen	Barricade 4L, Barricade WDG, Guardrail, WDG, Proclipse WDG	Prodiamine
Princep 4L	Simazine		

Table 1. Preemergence Products with Single Active Ingredients for Tank Mix Spray Applications.

Herbicide Timing: For preemergence applications, growers in the Southern states should be ready earlier than those in the North. For most weeds, initial applications should be made when soil temperatures approach 50°F. In the South this may be as soon as early March while in the North, it is usually in April. Preemergence herbicides generally provide control for 6 – 10 weeks in container media and 12 to 16 weeks in field soils. Lower rates, heavy precipitation or irrigation and warm temperatures, shorten length of control and increase the required number of applications.



Photo 3. Common Groundsel is a troublesome summer annual weed that germinates in spring. Photo J.C. Neal, NC State Univ.

If winter annuals such as bittercress have been troublesome, applications need to be made earlier since they germinate at lower soil temperatures. Make applications when soil temperatures reach about 40°F.

SureGuard, a sprayable formulation of flumioxazin, has postemergence activity so it offers the flexibility to control small emerged weeds and provide lasting preemergence control. Likewise Gallery has shown postemergence control on seedling bittercress.

Technical Tips article continued on the next page.

Finally, accuracy in application is essential. If you apply too little, herbicide performance will suffer. If you apply too much, crops may suffer. In conversing with growers, it is apparent that many don't understand basic concepts that are important to herbicide application. Herbicides



Photo 4. Solo 421 S Spreader is an economical spreader for granular herbicides.

need to be applied so that a prescribed amount is applied uniformly over a certain area. This requires accurate calibrated spreaders or sprayers. The Solo 421 S spreader (photo 4.) is a popular choice for applying granular herbicides (Griffin Item # 41-1850).

Developing an herbicide application plan may seem like a daunting task. For example, the weeds you target in spring may be different than those in summer or fall. It's wise to rotate between different herbicide mode of action groups to minimize the risks of weed resistance or shifting weed populations. Labeled crops differ between different products and so on. To help you with making herbicide choices, GGSPRO has developed and is offering an



herbicide poster set that provides details for selection and usage. Posters include information including effectiveness on specific weeds, modes of action, formulations (granulars or sprays) and application rates. They are laminated, durable and include full color photos of many problem weeds to help with identification.

To order, visit <http://www.ggspro.com/2.0/posters.html> or order Griffin Item # 98-204 GGSPRO 3 - 11" x 17" Herbicide Poster Set or Item # 98-205 GGSPRO 3 - 18" x 24" Herbicide Poster Set.

Product Feature & Super Saver

Save 10%

on Snapshot Herbicide.

Offer valid on orders through 5/1/10

Herbicides

Snapshot TG 2.5%

- Broad spectrum preemergence control of grassy and broadleaved weeds
- Labeled for a wide variety of woody and herbaceous ornamental crops
- Excellent crop safety

ITEM #	DESCRIPTION
72-2972	Snapshot 2.5 TG 50 LB DOW

FreeHand 1.75 G:

- Contains Dimethenamid-P a brand new active ingredient for container and field planted woody ornamentals
- Reliable, long lasting weed control
- Preemergence control of the toughest nursery weeds including: yellow nutsedge, eclipta, phyllanthus and doveweed.
- Excellent safety to most woody ornamental crops

ITEM #	DESCRIPTION
72-16201	Freehand 1.75% G 50 LB BASF



Save the date for the 2010 Griffin Grower Expo in your area

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August 18, 2010
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fusion
TECHNOLOGY

The No-Spill Prill

Controlled release fertilizer enhanced with a new “fusion” agent stays right where it belongs—in the pot

Ask just about any nursery grower and you'll hear the same story. Controlled release fertilizers can produce great crops, but they have their limitations when it comes to surface application. High winds, storms or gusts from an air-blast sprayer applying pesticide can knock over pots, causing surface-applied fertilizer prills to scatter uselessly onto the ground. Pots also can be knocked over during moving or spacing. According to Chris Buchheit, marketing manager of ornamental horticulture fertilizers for Scotts Professional in Marysville, Ohio, nursery growers have expressed concern about these particular problems for a very long time.

“Our territory managers, marketing staff and technical advisors travel throughout the country to visit with growers one-on-one,” Buchheit said. “For years, growers have told us that they can lose up to 30 percent of the controlled release fertilizer that they've applied to the surface of their crop containers. They attribute the bulk of this loss to spillage when containers are blown over or knocked over.”

At first glance, this situation may seem to be a minor annoyance, but in reality, the issues that stem from controlled release fertilizer being spilled throughout the nursery are both financially and environmentally significant. Rain and water from hoses and irrigation systems can wash nutrients from the spilled fertilizer into the surrounding land where they can run off into lakes, streams and rivers. “No matter how good its coating may be, controlled release fertilizer will end up leaching into the environment if the prills don't stay in the pot,” Buchheit explained.

Financially, growers must absorb the cost of lost product, the labor expense to reapply fertilizer and a decline in overall plant quality or crop consistency when plants suffer from a lack of important nutrients during their growth cycles. In fact, many growers with whom Scotts spoke said that they choose to limit their use of controlled release fertilizer because of the spillage risk.

“They tell us that they don't want to spend money on fertilizer that's expensive and bounces out of the pot,” said Fred Hulme, director of technical services for Scotts Professional. “We haven't even had to ask growers specifically about these types of problems—their observations simply came up frequently in conversation. That's when we knew that we had to try and offer growers a controlled release fertilizer product that both performed well and stayed in the container.”

Developing the technology

Because growers around the world have expressed the need for this type of controlled release fertilizer, Scotts' Global Research and

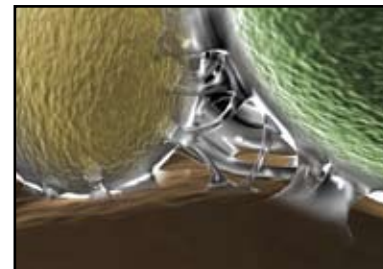
Development Team has been working on just such a product for several years.

“Our European Division started the product development process about four years ago,” Buchheit said. “While it is true, there were, and are now, uncoated fertilizer products on the market that exhibit some sort of stickiness, these fertilizers lack the desirable pre-defined longevities and predictable release of coated, controlled release fertilizers. Our global team of scientists set out to create a new product category that combined the benefits of a high quality controlled release fertilizer with a fusing agent that could keep nutrients where they belong—in the pot.”

Now, Scotts Professional in the USA is launching the result of these efforts in North America—a new product that combines the company's well-known Osmocote coated fertilizer technology with something they call “Fusion Technology.” “It's really easy for someone to come up with a product idea and just throw it into the marketplace,” Hulme said. “At Scotts, we don't launch any product until we've laid all the groundwork to ensure it's working correctly and as efficiently as possible. We took our time and made sure that this new product category, Osmocote with Fusion Technology, would answer grower needs.”

The first product from this new category, Osmocote Pro with Fusion Technology, is currently based on Scotts' second generation controlled release fertilizer, Osmocote Pro. After the product is surface applied and watered in, an innovative polymer compound forms a web-like adhesive matrix that does not interfere with the release of nutrients to the plant. This matrix bonds the fertilizer prills to each other and to the surface of the growing media. Re-wetting the growing media through subsequent irrigation maintains the Fusion activity, ensuring that the fertilizer will stay in place for an extended period of time.

Scotts Fusion article continued on the next page.



After the product is applied and watered in, the innovative polymer compound forms a web-like adhesive matrix which bonds the prills to each other and the prills to the growing media.

Trial, trial again

Conducting trials with North American growers was an integral part of the product development process. During 2009, Scotts chose over 150 growers to trial Osmocote with Fusion Technology at their operations based upon two primary criteria: 1) they produced crops with a propensity for being knocked over during the growth cycle, or 2) they had already expressed dissatisfaction with the loss of controlled release fertilizer during the handling and shipping of product.

The research and development team at Scotts worked with the company's technical experts to establish standard testing procedures and protocols. Trial product was then shipped directly to Scotts Professional's nationwide network of territory managers who took the product to their select grower customers. Trials began in June 2009 and wrapped up by November 2009.

"During this extensive trial process, we discovered a few snags and we made the necessary adjustments," Buchheit said. "While the technology worked well overall, we found some glitches with things as simple as the application instructions on the bag. People used it in a lot of different ways, and we were able to figure out the most appropriate way to apply Osmocote with Fusion Technology for the best results."

"Surface application of fertilizer on top of the growing media within the pot is a common practice for nursery growers, and this product is designed specifically for that particular situation," Hulme added. "It wouldn't make sense to mix it into growing media, because the Fusion agent would offer no benefits to the grower."

Hulme went on to explain that Osmocote with Fusion Technology provides better results if it is not spread too thinly across the growing media surface. Watering the product in initiates the Fusion action. Best results were achieved when crops were watered prior to the fertilizer application to ensure the growing media is settled in the pot. "Our product will stick to the growing media, but if the growing media is loose in the pot—as with newly planted crops—and it hasn't been watered in, the media itself may spill out if the pot is knocked over, and the fertilizer will come with it," Hulme explained.

Growers who trialed the new Fusion Technology have been pleased with the results so far. "We applied Osmocote Pro with Fusion Technology to five-gallon blueberry containers, and even when rolling the containers on gravel, the fertilizer totally stuck to the bark," said Francisco Garcia, product manager for Youngblood Nursery in Salem, Oregon. "It's been four months since our application, and these plants are growing at the same rate and with the same quality as the regular Osmocote formulation that we use."

Jason Rystrom of Earl May Seed and Nursery in Shenandoah, Iowa was impressed with Fusion's ability to stay right where it belongs. "In both our shipping department and our outdoor nursery, the 'Fusion' fertilizer stays with the pots," Rystrom said. "It doesn't end up on the ground or the floor, which has happened with other controlled release fertilizers when pots get knocked over."

The future of Fusion

Osmocote with Fusion Technology is currently available in one formulation—Osmocote Pro with Fusion Technology in a five to six month longevity at 70° F. "This particular formulation meets the needs of a large number of nursery growers. Buchheit said. "However, in the future, Fusion Technology is something that we may make available in additional formulations and longevities to provide even more options to growers."

When asked to describe the "perfect customer" for Osmocote with Fusion Technology, Buchheit and Hulme agreed. "Any grower who uses surface application will find value in the Fusion Technology," Hulme said. "When we use the term 'surface application,' we're not referring to 'top-dressing.' There's definitely a difference between those two practices."

Hulme went on to explain that there is some confusion in the market place on the term "top dress". Top-dress products are often less expensive, uncoated, agriculture-grade fertilizers that are applied to the top of the growing media in a pot, giving the plant a rapidly available and unpredictable dose of nutrition. Scotts now uses the term "surface application" to describe the practice of placing higher-grade coated fertilizer to the top of growing media in order to provide a consistent release of nutrients over a number of months. Surface applications are a common practice in the second season and beyond when crops are grown in the same containers for multiple years.

"Approximately 40 to 50 percent of the high-value, second and third generation fertilizer products that Scotts sells are surface applied, with the intent of providing the best possible nutrition over an extended period of time," Hulme explained. "The cheaper top-dress fertilizers may offer plants a brief boost, but they can also dissolve immediately in a heavy rain, making them far less efficient or environmentally sound than a coated fertilizer."

Beyond surface application, there are other variables that make certain growers even better matches for Fusion Technology. Growers who produce taller, top-heavy crops in larger pots, whose operations are in windier locations or who handle their crops multiple times before selling them can all benefit from a controlled release fertilizer that binds to growing media. However, according to Buchheit, there's one other very important quality that a grower must have to benefit from Fusion.

"Nursery growers who have a good handle on their operations and know what it takes to produce the best possible crops are our target market," Buchheit said. "They have the knowledge and the expertise to see how this product optimizes the money they spend on fertilizer. By providing consistent nutrition, minimal environmental risk and little need for reapplication, we truly believe that Fusion Technology will have a positive impact on a grower's bottom line."

This article is reprinted from the February 2010 issue of NM Pro magazine.



Osmocote Plus Tablets



7.5 gm Tablets plus Micronutrients

- Convenient, ready-to-use 7.5 gram tablet.
- Recommended for use when growing a wide variety of crops or in combination with water soluble fertilizer for a steady source of nutrition throughout the season.
- Two sources of iron make it ideal for foliage plants and other woody ornamentals.
- Consistently available nutrition throughout the entire crop cycle.
- The benefit of minors with the convenience of providing all the nutrition plants need in a single application.



Sun Gro Horticulture Offers a Wide Range of Growing Media

By Dan Jacques and Ron Walden, Sun Gro Horticulture

Sun Gro Horticulture is the largest provider of professional greenhouse mixes in North America. Sun Gro offers a wide range of mixes covering all the needs of the greenhouse industry, from seed/cutting propagation to general production. We also offer mixes geared to certified organic production. These mixes are OMRI accepted. Our standard mixes all contain Sun Gro's proprietary wetting agent, which helps avoid major wet-out issues. Our Natural and Organic mixes include a Yucca-based wetting agent, which has been OMRI accepted.

In this article, we will review some of the more common coir-based media as well as our Natural and Organic mix.

Sun Coir Based Growing Media

Sun Gro offers a number of mixes that include Sun Coir (coconut coir pith) as a major component. What makes the coir we use "Sun Coir"? We have a number of quality control parameters that must be met before a coir supplier is accepted. These parameters are checked for every shipment of coir that we receive. The coir-based mixes offer properties similar to peat-based media, but with some additional water holding capacity. These mixes are offered out of our Elizabeth City, North Carolina plant and can be shipped in 2.8 cubic foot, 60 cubic foot and bulk loads. Our most common coir-based media include Metro-Mix 360 with Sun Coir, Metro-Mix 380 with Sun Coir, Metro-Mix 470 with Sun Coir and Metro-Mix 560 with Sun Coir. Table 1 shows the differences between these three mixes.

All Metro-Mix with Sun Coir products are ideal for container production. Metro-Mix 360 and 380 with Sun Coir can also be used for production of bedding plants in flats. Metro-Mix 470 and 560 with Sun Coir are better suited to use in larger containers due to the amount of bark. All of these mixes also include lime, starter charge and Sun Gro's proprietary wetting agent.



Sunshine® Natural and Organic Growing Media

Sun Gro offers an OMRI listed Natural and Organic growing medium based on our popular #1 mix. This mix is called Sunshine Natural and Organic Mix #1. It is a blend of 75% -85% Canadian sphagnum peat and 15% - 25% perlite. It also includes dolomitic lime, a yucca based OMRI listed wetting agent and ORMI listed organic starter charge. This mix is available out of our New Brunswick, Canada plant. It is available in both compressed (3.8, 55, and 110 cubic feet) and loose-fill (2.8 and 80 cubic feet) formats.



Sun Gro has conducted extensive trials to determine the best possible starter charge type and rate to be used in our Natural and Organic growing medium. Growers who use this mix will need to begin supplementing with an organic fertilizer of their choice within 1 - 2 weeks of planting. This mix is used for the same types of containers as is our Mix #1 --- anything from cell packs to large pots and hanging baskets.

Sun Gro Support

Sun Gro provides sales and technical support for all of its products. Growers interested in finding out more about our products can consult our website (www.sungro.com) and obtain information, including contact information, for their specific area. You may also consult your Griffin sales rep for further information.

Dan Jacques and Ron Walden are Grower Specialists for Sun Gro Horticulture, Eastern Region.

Dan can be reached at 413-549-2793 (e-mail: danj@sungro.com)

Ron can be reached at 757-486-4728 (e-mail: ronw@sungro.com)

Table 1. A Comparison of popular Sun Coir based growing media

Mix	Peat	Bark	Sun Coir	Perlite	Bark Ash	Vermiculite
	----- % -----					
Metro-Mix 360 w/Coir	35 - 45		25 - 35		10 - 20	10 - 20
Metro-Mix 380 w/Coir	25 - 35	25 - 35	20 - 30	10 - 20		
Metro-Mix 470 w/Coir	30 - 40	35 - 45	10 - 20	5 - 15		
Metro-Mix 560 w/Coir	15 - 25	40 - 50	10 - 20	5 - 15	3 - 7	



What is the difference between a Shorefly and a Fungus Gnat?

Last year we received many technical calls regarding the invasion of fungus gnats. After further investigating, we discovered that they were actually dealing with shorefly. To the naked eye they do have similar traits, but it takes an up close look to identify their differences. The adult fungus gnats are small black flies that are about 1/8 inch long with long antennae and legs. Their wings are clear and when examined closely you can observe a Y shaped vein in each wing. Adults are not strong fliers and can often be found hopping around on top of the soil. The fungus gnat larvae are approximately 1" long, clear, with a black spot on their heads. Although the larvae are most commonly found in the top 1-1.5" of soil, they can also be found throughout the soil profile and sometimes congregate near the drain holes at the base of the pot. Adult fungus gnats do not feed on plants. They fly around, reproduce and die in about 7-10 days. They are more of a nuisance than harmful, but do have the capacity of spreading diseases in their travels. The real culprit that causes the damage is the fungus gnat larvae. The larvae damages plants by feeding on plant roots and spreading pathogens like Pythium, Thielaviopsis and Fusarium. Larvae can also tunnel up into the plant stems causing wilting and death.

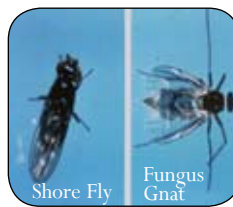


ices of soil media and is often found amongst the plant material. Whereas the shore flies needs a consistently wet environment to lay its eggs and are often found along baseboards and areas where water stands after irrigation. Hence the treatment of fungus gnat larvae should be directed to the media of potted plants and in areas where soil has been deposited. It is crucial to administer treatment to wet damp area in the greenhouse for shorefly control.



Some tools available to us for use in identification are potato wedges and yellow sticky cards. Using the potato wedge test is a simple way to determine if you have fungus gnat or shorefly larvae. Cut a potato into wedges and place them on the soil surface or under the benches. Check the wedges in 24-36 hours for the presence of larvae. Only fungus gnat larvae are attracted to the potato wedges. Both adult fungus gnats and shore flies are attracted to yellow sticky cards which facilitates identification. Cards placed throughout the greenhouse at a minimum of 1 card per 1000 sq. ft. not only helps with identification, but they also trap several of these pests in the process. Call Griffin today and order your yellow sticky cards.

Shorefly adults, on the other hand, are 1/8 to 1/4 inch long and have black bodies and reddish eyes. They have darker wings with clear spots. Antennas and legs of the shore fly are significantly shorter than those of the fungus gnat. The larvae also differ from the fungus gnats in that they are tannish brown with no black spot on its head. It can be difficult to find shorefly larvae as they are often camouflaged. Neither the shore fly adult nor the larvae feeds on plants. The damage is caused by the adult spreading diseases as it flies from pot to pot throughout the greenhouse.



Good sanitation procedures are still the first line of defense against these potentially destructive pests. Products such as Greenshield, KleenGrow, Strip-it, Zero-Tol and X-3 can be used according to label directions to control algae that serve as a breeding area for fungus gnats and shoreflies. Improving drainage will also reduce the habitat for shoreflies.

Biological control is another approach. Using the beneficial nematode *Stienernema feltiae*, (trade names include: Nemasys and Nemashield), are very successful in controlling fungus gnat larvae. They do not control shoreflies, however. Chemical control of fungus gnats and shore flies efforts should target the larval stage. The following products are among the better pesticides for controlling fungus gnat and shorefly larvae: Adept, Citation, Distance and Safari. Now that you can make a positive identification of fungus gnats and shoreflies consult the Griffin Insecticide and Fungicide Options bulletin for rates and usage to put an end to this problem.

The key factor in both identifying and controlling these two pests is understanding their habitat. The fungus gnat lays its eggs in the cracks and crev-



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