

## Griffin Working With Van Wingerden Greenhouse Company

Griffin Greenhouse & Nursery Supplies is currently working with the Van Wingerden Greenhouse Company on providing their structures to our customers. At present we have projects in progress and are ready to quote your next expansion project! Please contact your sales representative for more information or call for a greenhouse catalog.

### VAN WINGERDEN GREENHOUSE COMPANY



## Benefits of Horizontal Air Flow

The Horizontal Air Flow (HAF) system has been proven to be the most efficient method for good greenhouse air circulation. The benefits of more uniform temperature, better growth and less disease help you to produce higher-quality plants.

The concept of HAF is that air moved in a coherent pattern in a building such as a greenhouse needs only enough energy to overcome turbulence and friction losses to keep it moving. In other words, it just has to be "kicked along". The fans need to be sized and placed properly to do this.

Air is also heavy. The air over each square foot of floor area in a typical greenhouse weighs about one pound. A 30' by 100' greenhouse contains about 1 1/2 tons. Once the air is moving it will coast along like an auto traveling on a level road. That is why HAF is so efficient.

### Benefits:

**Uniform temperature** – as the air moves in a horizontal pattern down one side and back the other in a free-standing greenhouse or down one bay and back in an adjacent bay in a gutter-connected house, mixing occurs from side to side and floor to ceiling. We have instrumented a number of houses and seldom see more than 2 deg. F. difference between any two points. Because of the constant movement of the air, heat supplied at one end is carried to all parts of the greenhouse quickly. Stratification is also eliminated.

**Less disease problems** – research has also shown that air movement of 50 – 100 ft/min is adequate to keep nighttime leaf temperatures almost identical with the surrounding air. When leaf temperatures are allowed to cool much below the air temperature, the dew point is reached and condensation occurs harboring disease organisms. Radiant cooling on clear nights, especially in non-IR poly covered houses will cool plant leaves several degrees below air temperature. HAF will reduce this difference.

**Carbon dioxide** – During daylight hours, photosynthesis depletes the carbon dioxide that is in the boundary layer of air next to the leaf. Moving air will replace this depleted air with fresh air having higher carbon dioxide content. If carbon dioxide is being added, a lower level is usually adequate to get the same plant response, for instance, 800 – 1000 ppm rather than 1200 – 1500 ppm.

**Cooling effect** – during warm days in the spring and fall, solar radiation warms exposed leaf surfaces to as much as 15 deg. F. above air temperature. This can cause burning of the leaves, flowers or fruit. HAF will remove this excess heat and increase plant growth.

These are some of the major benefits from HAF. To look at some of the installation techniques, refer to Griffin's 2003 catalog, page 213 for fan sizing, location, and the number of HAF fans you will need. Both Acme and Schaefer HAF fans are listed along with variable speed controls.

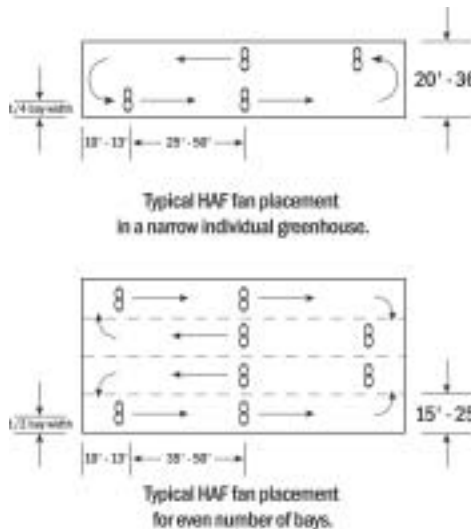
Height of the fans is not critical but is best located above head height to get them out of the way. In many greenhouses there is a truss or collar tie that can be used for support. If the house contains hanging baskets, a location a couple of feet above or below them is best.

One problem that can occur from a poor installation is a short circuiting of the air across the house before it reaches the next fan. This will show up as cold spots or areas of poor growth and is caused by not adding enough energy to the air or having the fans too far apart.

During fall or late spring operation, the HAF system should be shut off when exhaust fans are operating. Some of the fans oppose the flow of the ventilation air. Several growers have reported that HAF operation has increased the effectiveness of natural ventilation systems such as roll-up sides and will also reduce hot spots.

Maintenance is also important for efficient operation. Dust and dirt should be cleaned from the fans to increase air flow and reduce motor temperature.

Most of this information has been taken from a paper done by John W. Bartok, Jr., Agricultural Engineer in May of 1996.



Acme HAF Fan



Schaefer HAF Fan

## COMING EVENTS

### June

20-21 **Southeast Greenhouse Conference**  
Palmetto International Expo  
Greenville, SC  
(800) 453-3070

### July

12-16 **Ohio Short Course**  
Greater Convention Center  
Columbus, OH  
(614) 487-1117

16 **CNLA Summer Meeting**  
Plant Group  
North Franklin, CT  
(800) 562-0610

29-31 **PANTS**  
FT. Washington Expo Cntr.  
Ft. Washington, PA  
(717) 238-5050

### Save the Dates

### August

20 **Griffin Tewksbury Open House**  
Tewksbury Branch  
Tewksbury, MA  
(978) 851-4346

### October

8 **Griffin Leola Open House**  
Lancaster Host Resort & Conference Center  
Lancaster, PA  
(800) 233-0121



## WHAT'S INSIDE

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## Are You a Value Added or Commodity Marketer?



**Peter Konjoian**  
Konjoian's Floriculture  
Education Services

My industry focus has shifted significantly during the past two years. More of my thoughts, articles, and presentations now deal with the business side of floriculture than at any time in my career. Gone are the days when I could enjoy the satisfying feeling of discussing crop culture with fellow growers. The current economic climate and state of our industry definitely call for a 'survival of the fittest' mentality.

I rarely sit in on crop production seminars when attending conferences because I feel the need to hear speakers on subjects such as marketing, advertising, business management, profitability, and so on. If you ask me why I chose this field twenty years ago I'd tell you "because I love growing plants". So much has changed in so little time.

Some of the thoughts I develop today have appeared in previous articles and talks. Because the topic of greenhouse profitability is of such concern currently I hope you will read, digest, and react in a way that will help you and your business succeed in the current ultra competitive marketplace.

### Think positively

I'm not a 'glass is half empty' kind of guy so let's adjust today's theme before it gets out of hand. Sure, life in the greenhouse business has become more complicated lately. Certainly, growing quality flowers and plants is fun. Most of us continue to get satisfaction out of learning how to grow new and different crop species and cultivars. So many choices of what to grow and sell...it's very exciting for the optimistic grower. We still get to feel the incredible passion of seeing a crop grow from start to finish.

The change however, as I see it, is that years ago it was enough to simply grow the best flowers in one's market area. Today, this very business strategy is not optional but a prerequisite to being in business. Instead of using crop quality as one's business niche, today offering quality is assumed by our customers. Marketing, service, and the image you create for your business are now primary objectives. In other words, it's about way more than just putting a nice plant on the bench.

### Value added vs commodity marketing

I'm learning a lot about our industry by paying more attention to the business section of my newspaper, the business reports on the nightly national news, and every agricultural economist I cross paths with. The focus of several of my recent articles has been the contrasting philosophies of value added vs commodity marketing strategies. Don't let yourself utter the 'heard it once, heard it a thousand times' excuse, engaging in this debate puts your finger directly on the pulse of what's happening in floriculture these days.

Raise your hand if you've been involved in a conversation about the profitability of poinsettias. How about garden mums? Have you or the person you were conversing with ever used the word commodity? What does the word commodity mean to you anyway? I'm afraid this word is not going to go away, we're going to be using it for the foreseeable future.

Agricultural economists are now warning the floriculture industry that if we're not careful we could find our products following the apple and cranberry industries into dangerous territory defined by downward spirally prices accompanied by a knee jerk response to overproduce in order to keep pace with everyone else. This is a central theme in free market economies. Whenever a product brings good prices others choose to shift into similar production. All that's left as this happens is for the basic law of supply and demand to kick in. As supply increases, demand will decrease sending prices down.

### How to add value

So, given that we need to do things to our products that add value and differentiate them from the rest of the competition...let's talk about a few specifics. How many of us are offering, selling, or giving away slow release fertilizer products with a consumer's purchase of a hanging basket or mixed container? Many are physically placing one or several preformed Osmocote tablets into the surface of the growing medium at the checkout counter. Wow, do you think that's adding value in the customer's eyes? How about all the other consumers waiting in the same checkout line, do you think they notice? Will they make sure they have a similar basket or container in anticipation of receiving the same attention? What about all the opportunities to answer questions and explain what slow release fertilizer products can offer them? This is what added value marketing is all about.

The niche marketing thing comes into clearer focus when we debate commodity growers from value added growers. The commodity side of the marketplace almost requires growers to strip their crops of value and other production inputs in an effort to cut costs and maintain profit margins as the prices they're offered fall. Small and independent marketers have a golden opportunity to practice value added marketing as a means of carving a unique, foolproof niche.

If you sell patio tomato plants (large, mature plants with fruit showing) do you have them staked or caged as part of the package deal? The rather cheap \$1.00 cost of a three ring tomato cage will easily return \$2.00-3.00. How many times does a one to two hundred percent rate of return show up in your investment portfolio?

At a future Griffin Open House it might be interesting to survey anyone interested in sharing their value added ideas and practices. It's a sure bet that we could all leave such a discussion with new ideas for helping our customers feel good about their purchases.

## TECHNICAL TIPS

### Water Quality Effects Pesticide Effectiveness



**Rick Yates**  
Technical Support Manager

With the loss of some tried and true pesticides from our arsenal more pressure has been placed on our current stable of chemistries. Resistance to various insecticides, fungicides and herbicides has caused us to reevaluate our pest management programs with an eye towards fine-tuning them for maximum effectiveness and wise stewardship of the active ingredients.

It has never been more important to insure that the chemical applications we make are as effective as possible. Most pesticides are expensive and our time is valuable. Each pesticide application needs to be made under conditions that will yield maximum control. An area that deserves more attention is the effect that water quality has on the efficacy of many pesticides. The pH and hardness (calcium and magnesium content) of the water source used for spraying pesticides can have a significant effect on the ability of certain products to do their jobs. Hydrolysis is the term used to describe the process that begins to degrade pesticides after they are added to water. For most pesticides this process is accelerated by high

pH water. In some cases this decrease in activity happens quickly. The chart below gives some examples of pesticides that are most effective in a certain pH range. (The pesticide manufacturers supplied the ideal pH ranges.)

Pesticide	Ideal pH range	Pesticide	Ideal pH range
Avid	6.0-7.0	Orthene	5.5-6.5
A-Rest	5.5-6.5	Pennant	6.0-7.0
Cleary's 3336	6.0-7.0	Round-Up Pro	5.0-6.0
Decree	5.5-6.5	Spectro	6.0-7.0
Distance	5.5-6.5	Sumagic	5.5-6.5

**pHase5** is a recent addition to our product line and addresses the most serious obstacles your water can create, and does so in a unique way. It utilizes a color change to indicate the changes in pH that are taking place as you add the product. If your goal is pH of 5 add product until the water turns pink or red (depending on the hardness of your water). A pH of 6.0 is satisfactory for many pesticides and can be achieved by just adding enough pHase5 to cause the spray water to turn orange. pHase5 also negates the effects of high calcium and magnesium associated with hard water sources. The harder the water source the more product it takes to achieve the desired pH and pHase5 takes the guess work out of the process with the easily observable color change. This process should take place before the chemical is added to the spray tank.

There are exceptions to every rule. A few pesticides we sell at Griffin should not be used with pHase5. Milstop fungicide raises the pH of the spray water as a part of its mode of action so reducing pH is counter productive in this case. Endeavor insecticide begins to hydrolyze (break down) at a pH below 7 so pHase5 is not recommended. A chart containing ideal pH ranges for most of the pesticides Griffin sells is available by contacting the Technical Department at the Leola branch.

### Additional benefits from pHase5

- Contains a surfactant to reduce surface tension increasing pesticide coverage and decreasing visible residue from wettable powders.
- Aids in compatibilities of tank mixes. (Test all tank mixes for safety before wide scale use and never attempt tank mixes forbidden on the pesticide label.)

## PLANT CORNER

### More Products, More Vendors...More Choices!

In recent years, Griffin has become a premier supplier of starter plant material in the Northeast U.S. for both the large and small grower. One of our goals has been to provide the broadest range of greenhouse plant material through local and foreign sources in order to supply our customers with the highest quality and newest breeding lines at the most reasonable price. We accomplish this through our grower truck network, plant truck deliveries where available, and the introduction of new sources. We support our network with a full staff of customer service representatives, 7 Plant Specialist field reps servicing 12 states, and unmatched technical support. Through customer feedback, we continually strive to bring you the products you are requesting with the technical support needed to finish a quality crop. This results in a profitable crop for you!

2003 brings many exciting additions with our new vendor and product offerings. We have added more than 25 new vendors to supply your needs. This opportunity will give you pricing advantages and shipping choices that will enhance all your current programs.

The following is just a glimpse of our additional choices that we have to offer you:

**Possum Run** - Located in Bellville, Ohio, Possum Run offers a unique line of vegetative annual liners.

**GroLink** - Products coming from Oxnard, CA offer the full range of garden mums, pot mums and GroLink Specialties. These are available as both rooted and unrooted cuttings. Some exciting additions include their new vegetative Coleus and Tropical Hibiscus lines.

**Talmage Farm** - Offering herb liners and Flower Fields liners from Riverhead, New York. Grower truck is available within the region.

**Plants of Ruskin** - Offers larger sizes of plugs in 128's and 288's. Shipping out of Florida, 30 cases or more ship free of charge.

**Coastal Cuttings** - Located in Lake Worth, Florida, coastal cuttings gives us a larger availability for tropical plant liners. They offer many varieties including Allamanda, Dipladenia, Bougainvillea, Clerodendrum and Hibiscus

**Van DeWetering** - 15 Acres of greenhouses on Eastern Long Island offer plugs, plug & ship, and potted plants with grower truck option for CT, DE, ME, MD, MA, NH, NJ, NY, PA and RI.

**H.M. Buckley** - Offering a large selection of vegetative spring liner material.

**Bradley Farms** - Annual plug producer offering grower truck for central New York.

**Gulley Greenhouse** - Gulley Greenhouse, located in Colorado, currently has 120,000 square feet of cold frames, 60,000 square feet of heated greenhouses, and another 17,500 square feet under construction for plug production. The greenhouses currently produce over 1,000 perennial and 200 herb varieties. Gulley Greenhouse is your source for Popper and Super Poppers.

**Shady Oaks** - Offers an unmatched selection of young Hosta liners, as well as a full assortment of uncommon shade perennials. Good availability year-round, shipping February through November. Located in MN.

**CK Greenhouses** - East Coast rooting station for Selecta Klemm products, including the top selling Calibrachoa varieties. Large assortment of Spring liner material including Geraniums and Regals. Located in Cheshire, CT.

**Hionis Greenhouses** - Located in Whitehouse Station, NJ. Offering a full assortment of pre-finished bulb crops including Easter Lilies. Pre-finished Spring flowering material and Poinsettias are also available.



**Nanette Marks**  
Plant Marketing &  
Sales Manager



*Coastal Cuttings  
Bougainvillea*

## Fafard's Most Popular Mixes

Hugh A. Poole, Ph.D. Director Technical Services/Quality Control



Hugh A. Poole, Ph.D.  
Director Technical Services/  
Quality Control

Producing beautiful plants starts with using high quality inputs. One of these inputs is the growing medium selected for the crop. Typically, the cost of the growing mix represents less than 5% of the production costs of most greenhouse crops. Yet, the quality of the mix and how it is handled can often be the difference between success and failure for a crop. This article is to describe Fafard's most popular mixes in the New England and mid-Atlantic areas. These three mixes are popular throughout the region because growers have come to trust their performance and invest in their use with confidence.

The three mixes are Fafard GM-2; Fafard 3-B; and Fafard #52. The GM-2 is a compressed bale peat-based mix that is produced in Fafard's Canadian facility in Inkerman, New Brunswick. The 3-B and #52 are peat-pine bark based media produced in our manufacturing plants in Anderson, SC and Plymouth, FL. During manufacturing, each of these mixes is produced on "continuous in-line mixing systems", which insure consistently high quality products each time that they are produced.

Each mix is produced using a specific formula that controls the computer-driven production line. This formula determines the percentage of ingredients and the amounts of amendments to be added to the mix. Each facility has a Quality Control Manager and each shift has a QC Technician that inspects and tests raw ingredients, inspects the line during production; and pulls samples for lab testing during the production run. Samples from each run are submitted for nutritional analysis and tomato seeds are sown in the mixes to determine the anticipated pH under greenhouse conditions. Typically, we have plants growing in the mixes before the customer receives the mix. Producing a great mix is like growing a beautiful plant. If you start with the best raw materials, follow a proven formula and execute with precision, then you will produce a consistently, great mix.

**The Fafard GM-2** is produced in 3.8 cf and 55 cf compressed bales which yield at least 7.5 cf and 115 cf, respectively, of loosened mix per bale. The same formula is available in loose-filled bags of 2.8, 60 and 70 cf (C-2 Series). The mix consists of 70% high-quality, blond Canadian sphagnum peat moss, coarse perlite and vermiculite. The mix also has dolomitic limestone (to adjust pH to 5.5-6.5), gypsum, a water-soluble nutrient charge and a wetting agent. The GM-2 has many of the attributes originally described in the Cornell Peat-Lite formulas that have been in greenhouse production programs for nearly 40 years. It is a lightweight mix that is easy to handle and to transplant into. It is often used to root cuttings and start seeds due to the excellent air/water relations of the mix. Growers use this mix for bedding plants, foliage plants, flowering pot plants, hanging baskets and herbs. The total porosity of the mix is near the maximum for peat-lite mixes so much of the water is readily available for plant growth and transpiration.

**Fafard 3-B** is an excellent general purpose mix composed of 50% blond Canadian sphagnum peat moss, 25% aged pine bark, perlite and vermiculite. The mix also has dolomitic limestone (to adjust pH to 5.5-6.5), gypsum, a water-soluble nutrient charge, blue-chip (a slow release source of nitrogen) and a wetting agent. Fafard ages and processes its own pine bark on site in South Carolina for its professional mixes. Within the industry, absolutely no one takes more pride in the quality and processing of bark than Fafard does. After

9-12 months of ageing in windrows, the pine bark is screened into <math><3/8''</math> (fine) and <math>>3/8'' - <5/8''</math> (coarse) fractions. 3-B has a blend of fine and coarse bark to provide more aeration and good drainage. With the addition of the pine bark, the mix weighs more and is classified as a "middleweight" product (12-15 #/cf). It is available in both 2.8 and 60 cf loose-filled bags. Growers use 3B for virtually all greenhouse crops, including bedding plants, flowering pot plants, foliage and hanging baskets. It can also be used for propagation and seeding when a coarse mix is required. If you have never used a peat-bark blended mix, then 3B is an excellent start for you when growing greenhouse crops.

**Fafard #52 Mix** is our most popular "Perennial Mix". This mix is recommended for large containers, hanging baskets, nursery plants and most crops that require a coarse, well-drained mix. It contains approximately 60% aged pine bark (a blend of fine and coarse), Canadian sphagnum peat, perlite and vermiculite. The mix also has dolomitic limestone (to adjust pH to 5.5-6.5), gypsum, a water-soluble nutrient charge, blue-chip (a slow release source of nitrogen) and a wetting agent. The high porosity of the mix is ideal for crops grown outdoors or overwintered. We consider this a "heavyweight" product (16-20 #/cf) and it is available in both 2.8 and 60 cf loose-filled bags. Due to its drainage characteristics, additional fertilizer may be needed after heavy rains or irrigations. If you are growing a wide range of perennials, then Fafard #52 is the ideal mix for you.

Fafard has a long tradition of producing custom mixes or variations of the above mixes based upon grower requests. These mixes can be customized with water-absorbent polymers, controlled release fertilizers, biological agents (Rootshield, Actino-Iron, etc.), calcine clay, coir or variations in the rates or percentages of the standard components. It is not uncommon to have requests for low-lime or high-lime rates depending upon the crop being grown and the water quality used in the greenhouse. Fafard is willing to work with the grower to find the "right mix" for the grower's needs.

Fafard Horticultural Services is also available to growers to assist them in monitoring crop needs and to assist growers when problems arise. These problems do not need to be "soil-related" as our team of horticulturists has extensive experience working with greenhouse crops and growing conditions. We have a full-service analytical lab in Anderson, SC to do media, plant tissue, water and fertilizer solution analyses. The costs are very reasonable and discounts are extended to Fafard customers. For troubleshooting, digital photos from the greenhouse can be e-mailed to our lab or technical support staff to assist the grower in identifying problems or to assist in determining the type of samples required for diagnosis. We firmly believe that your success in growing will determine our success.

Fafard has Independent Sales Representatives that work directly with the growers and with Griffin's sales and technical staffs in order to better serve the customer's needs. We have three in New England and five covering the Mid-Atlantic states. They are available to answer questions about Fafard products and services. Fafard's home office is in Agawam, MA and the customer service staff can assist you in contacting your Sales Rep, scheduling delivery or providing you with information. They can be contacted at 1-800-PEATMOSS (732-8667). Technical services can be contacted at 1-800-722-7645 or by e-mail (poole@fafard-sc.com). Customer Service and Technical support are important ingredients in Fafard's growing mixes and our partnership with growers.

1/20/03

## TetraSan™5 WDG - New Miticide from Valent®

Rick Yates  
Technical Support Manager,  
Griffin Greenhouse and Nursery Supplies



TetraSan™5 WDG has received federal registration and is in the process of obtaining state registrations. The past few years have seen the introduction of several new and effective miticides including: Akari, Floramite, Pylon, and Ovation. Many growers still report good success with older products such as Avid, Hexygon, and Sanmite. Given this array of miticides, you might ask, "Why make room for one more?"

### Do you really need another miticide?

Mites have proven they have the ability to develop resistance to miticides over the years. As a result you will see resistance management labeling that puts significant restrictions on how often a miticide can be applied. Examples of what you will find on miticide labels include: "use only once per each crop cycle", "use at least two different chemicals from different chemical families (with different modes of action) between treatments", etc. The TetraSan label says that it can be used a maximum of two times per crop or two times per six months with at least one treatment with another mode of action in between. Growers are going to need more than one or two miticides to run a successful mite control program, particularly if they produce crops that are susceptible to mites.

### Features and Benefits of TetraSan

TetraSan has some unique characteristics that might earn it a place in your mite control program. It is reported to have strong translaminar action, meaning that when sprayed on the top surface of the leaf it will move to lower leaf surfaces in sufficient quantities to control mites. This is an obvious advantage where crop canopies make good under leaf coverage difficult. TetraSan also has an impact on all life stages of mites. It inhibits the molting process on egg and nymph stages, and treated adults won't lay viable eggs. TetraSan does work like an insect growth regulator (IGR) in that it takes several days to reduce the number of adults. You can expect long residual control (estimated at up to 4-6 weeks by Valent) of the mites that appear on the label. Greenhouse, lath, and shade house applications to ornamental flowers, foliage, ground covers and shrubs are on the label. Research is continuing but early trials studying the safety of TetraSan treatments and beneficial insects and mites are encouraging. TetraSan has a "Caution" signal word and a 12 hr REI.

### Tips for Achieving Good Results

TetraSan will be most effective when it is applied while mite populations are still low. If mite numbers are already high consider tank mixing TetraSan with an adulticide. Test all tank mixes for compatibility and plant safety before treating large numbers of plants. Trials have shown excellent plant safety and no visible residue but there is a label caution against using TetraSan on poinsettia bracts. A second application can be made as soon as 14 days after the initial treatment if mite pressure is high. TetraSan is packaged in two-ounce water-soluble packets. One packet treats 12.5 to 25 gallons of water applied as a foliar spray.



## Scott's AquaGro

One huge issue in our industry is the poor shelf life of plants at the retail level. Even the best quality plants will soon suffer if inadequate care is given at the garden center. Some of the big box stores have begun charging back to the grower the plant loss or "shrink" the store incurs. This can be very expensive.

Over the years growers have tried increasing pot sizes, amending soil mixes with gels or other water holding materials, or even hiring maintenance workers to attend to plants once they leave the greenhouse or nursery. These remedies also can be very expensive and are not always effective.

One of the easiest ways to maintain high plant quality in transit from your place of business to your customers is to drench with an application of Aqua-Gro® L with Psimatic Technology surfactant just prior to shipping.

Sound too easy? It is! Applying a full rate of Aqua-Gro with Psimatic (7.6 ounces per 100 gallons of water or 600 ppm) a week before shipping will noticeably increase post-production shelf life by reducing irrigation requirements. This process incurs minimal expense – about one fifth of a cent per one-gallon container; an easy trade to dramatically reduce plant shrinkage losses.

On the retail side plants are often left sitting on blacktop, drying in the hot sun with infrequent and inadequate irrigation. Plants treated with Aqua-Gro before shipping will recover from a severe wilt and to return to their original condition much better than untreated plants.



Aqua-Gro, in layman's terms, restores all the water-retaining sites in the soil back to their original condition. With more available water, plants remain turgid without excess water logging of the roots or changing the integrity of the mix.

Surfactants or wetting agents are added to most quality soilless mixes at the time of manufacture but they have a short life in the mix. These surfactants decay in mixes over time reducing the volume of water retained. Contrary to popular belief the primary reason that plants need more water as they age is due to the mix aging and retaining less water.

Using Aqua-Gro surfactants in production will increase watering efficiencies, maximize plant quality and reduce shrinkage in the greenhouse and at the retailers as well.

Contact your Griffin salesperson to order these and many more Scotts performance proven products.



Jim Zablocki  
The Scotts Company  
Technical Service Manager

# NEW PRODUCTS

## pHase5



Use this chart to approximate how much pHase5 you will require.

Water hardness (mg/l)	Total Dissolved Solts (T.D.S.)	Conductivity (µm)	Drops per Pint	Rate in oz. per 100 gal. water
Soft	0-100	0-200	7-9	8-10
Medium	100-200	200-300	8-10	8-10
Medium Hard	200-300	300-400	10-15	10-20
Hard	300-400	400-500	15-20	20-30
Very Hard	500-600	600-800	20-30	30-40
Extremely Hard	800+	800+	40+	40+



### What is pHase5?

pHase5 is an adjuvant designed to adjust pH in water so that maximum efficacy of foliar sprays can be realized. pHase5 will acidify all alkaline waters as well as neutralize the dissolved salts present in hard waters. Mixing pHase5 into your spray solution requires no lab tests or guesswork. pHase5 turns the solution pink when the optimum pH has been achieved.

### Acidifying Action

pHase5 is added to the spray solution before pesticides are mixed in. Most pesticides work best in acidic conditions. pHase5 reduces the pH in your spray water, overcoming the tendency of dissolved salts to resist pH change.

### Built-in pH Indicator

pHase5 is the only adjuvant with a patented built-in pH indicator. When the optimum pH of 4.5 - 5.5 is reached, the spray solution will change to pink or red (depending on water hardness). pHase5 eliminates the need for cumbersome pH testing - all you need to do is check the color of your spray solution.

If you cannot see into your spray tank, you can easily determine how much pHase5 you need by mixing a small amount of solution in a calibrated bottle and then adding pHase5 to your spray tank in the same proportion.

### Alkaline and Hard Spray Water Can Sabotage Your Spray Efforts

The two most important factors affecting spray water quality are pH and water hardness.

### The Effect of pH

The efficacy of many pesticides is adversely affected by exposure to alkaline spray water (high pH) through the degradation process known as alkaline hydrolysis.

### Chemicals sensitive to alkaline hydrolysis include:

- ♦ Organophosphates
- ♦ Synthetic Pyrethroids
- ♦ Carbamates
- ♦ Chlorinated Hydrocarbons
- ♦ Triazines and Others

Item #	Description	Size	Price
31704	pHase5	1 qt.	\$11.90
31705	pHase5	1 gal.	29.90
31730	pHase5	30 gal.	843.00

# \$\$\$ SUPER SAVER



Controlled Release Fertilizer Plus Minors

An exact, premeasured dosage of complete nutrition.

Osmocote Plus Tablets provide continuous plant nutrition with just a single application, giving your plants what they need, when they need it. Osmocote Plus Tablets free you from the danger of dosage errors. Save on labor and the expense of special application equipment!

Formulation: 16-8-12 plus minors in 8-9 month longevity for nurseries, longer-term greenhouse crops, hardy mums, hanging baskets, interiorscapes and landscapes. These 7.5 gram tablets are a combination of Osmocote® controlled release fertilizer and Micromax® micronutrient technology.



Special Pricing Valid Till June 30, 2003

Item #	Description	Qty	1-4	5-20	21-39	40-Up
67-1900	Osmocote Plus Tablets 16-8-12 8-9 month 7.5 gm	1000	\$54.00	\$51.30	\$48.60	\$45.90

Prices Reflect Super Saver Discounts



Eleven Locations to Serve You Throughout the Northeast and Mid-Atlantic

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