A Publication of the UMass Extension Greenhouse Crops & Floriculture Program

Floral Notes Newsletter

Volume 28, No. 3 http://extension.umass.edu/floriculture November-December 2015

In This Issue

(L to R) Russ Norton Barnstable County; Angela Madeiras, Plant Diagnostic Lab; Geoffrey Njue, Wareham; Tina Smith, Amherst; and Doug Cox, Stockbridge School.

Biological Control in Greenhouses – Success is in the Details!

Co-sponsored by UMass Extension and UConn Extension
January 12, 2016, 9:30 – 3:00
Publick House, Sturbridge, MA

9:00 – 9:30 **Registration and coffee/tea**

9:30 – 10:20 **The Art of Releasing Biocontrols**
Scott Creary, Biocontrol Specialist

10:20 – 10:30 **Break**

10:30 – 11:30 **Preventing an Aphid Apocalypse**
Cheryl Frank Sullivan, University of Vermont, Entomology Research Laboratory

11:30 – 12:00 **Step by Step, Our Schedule for Using Biocontrol**
Linda Taranto, D&D Farms, Stow, MA

12:00 – 1:00 **Lunch (see options*)**

1:00 – 2:00 **Pesticide Compatibility and Biocontrols**
Scott Creary, Biocontrol Specialist

2:00 – 3:00 **Grower to Grower Panel with Discussion:**
Andy Cowles, Andrew's Greenhouse, Amherst, MA, Kerri Stafford, Cavicchio Greenhouses, Sudbury, MA and Kelley Sullivan, Mount Auburn Cemetery, Cambridge, MA

Four pesticide recertification credits have been approved for this program.

Registration $35 person, checks payable to University of Massachusetts.

***Lunch options:** Pre-purchase your lunch at time of check in for $13.20 (paid directly to the Publick House). Pre-paid lunch includes: Build your own sandwich buffet (roast beef, turkey, ham, and vegetable, potato salad, chips, desert, drink) or eat in the Publick House restaurant or fast food restaurants within a short drive.

Complete Program Description & On-line Registration at http://ag.umass.edu/greenhouse-floriculture

Change of Address

Geoffrey Njue, Extension Educator, Greenhouse Crops and Floriculture has recently relocated his office to UMass Waltham Center, 240 Beaver St. Waltham, MA 02452. You can reach him on his office phone, (781)891-0650 ext. 12 or cell phone, (413)992-8005.

Bagged Potting and Garden Soils

Tina Smith and Doug Cox
UMass Extension
Amherst, MA

There are many types of bagged potting and garden soils available. Some are intended to be used in the ground to supplement or fill areas for gardens. Other products are intended for plants growing in containers and pots. It is important to read the label before purchasing to learn the intended use for the product.

Garden soil contains minerals, organic matter, air and water. Mineral-based soils alone are not recommended for container plants because in containers, soil becomes very compacted and saturated with water, limiting air space, which is necessary for plant roots. Unpasteurized soil is a source for weeds, insects and disease organisms.

Potting mixes intended for plants in containers and pots retain moisture, provide air space for roots, and are free from weed seeds, insects and diseases. Potting mixes, also called soilless mixes or soilless media, usually contain combinations of peat moss, pine bark, coir, perlite and vermiculite. Some composts are also intended for container use.

Components of potting mix for pots and containers

Peat moss is a plant harvested from Canadian peat bogs and some bogs in the northern United States. There are also some peat bogs in the southern US. Peat moss decomposes very slowly, retains moisture in the potting mix while providing a balance of air space and water for healthy growing roots. Peat is acidic (low pH) and limestone is usually added to the mix to neutralize the acidic reaction and balance the pH. Peat moss often makes up 30-80% of potting mixes. Peat moss by itself is difficult to wet, so wetting agents are added to the mix to make it wet easier.

Sphagnum peat moss is the young or live portion of the plant. It is sold as green and living, or brown and dried, and is used for plants requiring moist growing mediums while providing good aeration. It is often dried and milled in seed starting mixes.

Bark products are ground and/or partially composted by-products of the timber industry. This is usually a less expensive alternative to peat moss. Bark products have good aeration properties but they dry out quicker than peat moss. There are different properties associated with the specific types of bark. Barks should not be used in starting seedling because they immobilize nitrogen.

Composts are sold for in-ground gardens and others for potting mixes. Composts may not be consistent from batch to batch and can be unpredictable in physical and chemical properties. When used in containers, some composts have high levels of nutrients and will burn plant roots and have low air porosity. In gardens, composts are best mixed with existing garden soil.

Perlite is small white irregular shaped, volcanic rock that was crushed and heated. The heating causes it to expand. It is non-toxic, sterile and odorless. Perlite is used to improve drainage and aeration.

Vermiculite is very light, greyish puffy substance that forms when mica chips are heated. It contains some potassium, magnesium and calcium that will slowly become available. It is used to increase moisture and nutrient retention in mixes since it can also hold onto fertilizer for a period of time - helping to keep nutrients around the roots of your plants instead of washing out the bottom of the pot.

Coir is reddish-brown fibers that are harvested from coconut husks, a by-product of coconut fiber industry. It is used in potting mixes for containers in place of peat moss. Coir is easier to re-wet after drying than peat moss.

Styrofoam is sometimes used as an inexpensive substitute for perlite. Beads of styrofoam are used to aerate potting mixes and serve as a space filler. Styrofoam is lightweight, float to the surface when watered and can blow away when pots dry out. Also, unlike perlite, styrofoam will compact over time.

Fertilizer starter charge and continuous fertilizer

A "starter charge" of fertilizer on the label indicates that there is a minimal amount of fertilizer in the potting mix. Most starter charges are gone from the potting soil after watering two to three times.

A continuous fertilizer (controlled-release, time-released or slow release) in the bag indicates fertilizer "prills" are incorporated with the mix. Prills are small and round and evenly distributed throughout the mix. The prills are water soluble fertilizer that is encased in a semi-permeable resin coating. When they come in contact with water, small amounts of nutrients are released into the soil for use by the plant over a period of time, usually several weeks. So, each time the soil is watered, the plants are getting "automatically" fertilized. The rate of nutrient release for most of these fertilizers is regulated by temperature. The warmer the temperature the faster nutrients are released. Look for the round fertilizer "prills" in the potting mix. Squeezing the prills can indicate if a fertilizer has been depleted. If the prills are empty, the fertilizer has been released. When the initial fertilizer has been depleted, re-apply controlled-release fertilizer or use water-soluble fertilizer to continue to fertilize plants.

Bagged potting mix containing slow release fertilizer must be stored dry. If the potting mix gets wet, the fertilizer in the potting mix can pre-release inside the bag and become concentrated which will burn plant roots when used. Dry, bagged potting mix will be light and fluffy.

Wetting agents

Wetting agents are chemical substance that increases the spreading and penetrating properties of a liquid (ie. water) by lowering its surface tension. These are used in potting mixes to enable water to thoroughly wet the mix. Tip: Moisten a potting medium with warm water before using to have uniform moisture throughout the container. Plants potted in dry medium and then watered will have inconsistent moisture levels in their root zones. Organic mixes may contain yucca extract as a wetting agent.

Moisture retaining treatments

Some potting mixes contain moisture retaining polymer gels, crystals or chemicals that absorbs water. These help to reduce the need for watering over the growing season. A little extra care will be necessary to avoid overwatering when the temperatures are still cool since the soil will be slow to dry out. The moisture holding ability of the soil breaks down over the season, usually by mid to late summer. When hydrated, water retaining gels look like clear chunks of glass, but are soft to touch.

Specialty potting soils

While the all-purpose, general type potting mixes will work fine for almost all annual flowers and mixed containers, there are some crops for which specialty mixes might perform better such as orchids. Orchids require excellent drainage and most general potting soils hold too much water and lack enough air space. Components of mixes for orchids may vary, however, coarse materials are often used to allow for plenty of air movement through the medium.

Also succulents and cacti, require better drainage than annual flowers and in many cases prefer clay pots as well. Many succulent collectors use a regular potting mix and mix it with 50% sand, which makes the mix very heavy, but very fast draining.

Summary: Rules of Thumb for Choosing a Potting Mix for Pots and Containers

- Potting mix bag should be light, fluffy and DRY. Avoid bags that are saturated with water or seem to be heavy and compact. This is especially important for potting mixes that contain fertilizer prills (often labeled as continuous feed, controlled release, timed release or slow release).
- Look for a potting mix that contains peat moss, pine bark or coir and perlite or vermiculite.
- Caution should be taken when using a compost-based mix. A soil test is advised.
- Fertilizer may be in the mix in the form of a "starter charge" or “continuous feed” formulation. Adjust your fertilization practices accordingly.
- Potting mixes also contain a wetting agent to make the soilless media wet easier. Organic potting mixes may contain yucca extract, a natural wetting agent.
- Potting mixes may contain moisture retaining amendments such as gels.

Components of bagged amendments for in-garden and landscapes

Composts – See Potting Mixes

In landscapes, composts are best mixed with existing garden soil.

Manure products are intended for use in-ground gardens but not intended for containers. Manures contain a form of nitrogen that will burn plants in containers. Manure products are best when mixed with soil at a rate of about one part manure to two parts soil. Many manure related products contain sand, which makes them heavy for use in containers.

Mulch

Mulch is usually a raw wood product (bark, wood chunks, shredded wood, etc.). It is intended to be used on the surface of the soil to maintain soil moisture, prevent water from evaporating and suppress weeds. Un-composted wood products, take available nitrogen from the soil as they break down (decompose). Use mulch products on top of the soil in your garden and landscape where they are intended to be.

Quality of bagged soil and mixes

Does the bag feel heavy and compact or light and fluffy? Often, when a bag of garden soil or potting mix is very heavy, it is either water soaked or it contains **too much** sand. If potting mix becomes soaked it can begin to break down in the bag, become compact, lose air space and result in poor roots and plant growth. Mixes that contain controlled fertilizer prills may pre-release fertilizer into the mix causing young plants to burn.

Coarse, horticultural grade sand provides anchorage and air space and is used as inexpensive filler. Unless growing cacti, or used to keep pots from tipping over, sand is not **desirable** for most plants.

Fungal growth on potting soil

Fungi and slime molds occasionally appear on the surface of growing media. These organisms will not hurt the plants or roots. They are saprophytic fungi involved in the decay of organic matter and are more likely to occur when the growing media remains wet for prolonged periods of time. Under normal outdoor growing conditions the fungi are usually short-lived**.** To eliminate mold, spread the media out on clean surface to dry it and expose it to sunlight, then re-bag or put it into a clean container when it is dry.

References

https://www.provenwinners.com/learn/dirt-dirt-potting-soil
http://www.ladybug.uconn.edu/factsheets/PackagedPottingMedia.html

"We Don't Do That"

Samantha Stoddard
Farm Credit East, ACA
Bedford, NH

Since the economic downturn, I, like many of you, have been trying to fill the sales gap from what was to the way it is now. Many garden centers have added or expanded their gift shops or even created brand new departments, such as clothing, jewelry, and food services. This is working out very well for some, as they have a passion for these areas, an ingredient that I believe is essential to their success. I suppose I am being too stubborn, but I have been looking specifically at trying to find horticultural ways to increase sales. That's what I studied in school; that's where my passion is. If I wanted to run a restaurant, I would have gone to cooking school. Take one look at how I dress, and you will know I should never try to sell fashion or jewelry. Of course, if you have someone on your staff, who currently has those passions, and you are an excellent delegator, your company can surely experience success with these endeavors. But I have been determined to find new ways to succeed with plants, and I am guessing that I am not alone.

To that end, I joined a farmer's market, added new plant departments at my garden center, added new events, increased our workshops, and even created an exclusive fall item that I decided to try and wholesale to other garden centers, growing it during the off-season with the people I hired for spring. Some of the ideas succeeded, some flopped, and most had mediocre results. I watched people walk right past my gorgeous booth at the farmer's market, unwilling to even turn their head and look at the flowers. Who doesn't want to at least look at the flowers for a second? It's like a free flower show. We even did a few experiments and dropped the price to $1 on some things that are normally $4. A quote from Robert Hendrickson, an industry consultant with **The Garden Center Group,** often came to mind: "You can't sell stuff to people who don't want your stuff, no matter how hard you try." Alas, there are people in the world who could care less. Hard to believe for those of us who are so passionate about plants that we go to conferences and trade shows to find the latest Calibrachoa introduction, when there are hundreds already on the market.

This is starting to sound a little depressing, but if you are still with me, here's where the story changes. Instead of trying to think of things our customers might want, suppose we started listening to what they are asking for, but we have been turning down? As a small grower, it is not financially viable for me to grow plants to sell wholesale. So when opportunities present themselves, I usually answer with the title on this article: "We don't do that." I may love growing plants, but I must make money, too. But last year, a call came to me to contract grow some plants for a new garden at a private estate in Newport. The call came in the rush between Mother's Day and Memorial Day. I barely had time to take the call. But the estate wasn't going to be ready for the annuals in the new garden until mid-July, and I thought, as long as I didn't have to pot them until after Memorial Day, I could pull it off. This would be added income, turning the greenhouse one more time, and keeping my staff employed a little longer. So I decided to listen to the request.

The plant list was for a lot of unusual annuals, but ones that I felt I could find starter plants for, using the wide network of growers I have met by being a member of the Massachusetts Flower Growers Association. I ended up sourcing most of the starter plants from several members with just a few phone calls. The connections I have made with MFGA insured that the plants would be of high quality, and my order wouldn't be lost in the mad rush of the week's orders in the busiest shipping weeks of the year. (For those of you considering service to our organization, this is one of the biggest

benefits to being on the board of directors. When you have a board meeting over dinner with your fellow growers, you create connections between people. And people like doing business with people they like. And people take care of people they like. And my fellow growers took care of me.)

One of the things I am bad at doing is pricing my plants. I inevitably price things too low. But I decided that, while I was going to be fair, I was going to bid this job on the high side. After all, not too many growers can be flexible in their production schedule in mid-May. And most growers want to move material out of the greenhouse the moment it is ready. Not too many will hold plants for a special order. So I decided to quote prices closer to retail than wholesale, even though they would be purchased in wholesale quantities. The extra effort to hold the plants until the garden was ready, in case there were delays, would come at a price.

To make a long story short, the customer didn't blink an eye at the prices. They were still fair. Fair enough that I got the order again for the next year, albeit in peak season, but still at close to retail prices. (Yes, they can probably find wholesalers with lower prices, but not all in one place and who are willing to hold the material.) More importantly, this job has been so rewarding, because it gives me a break from trying to convince new people of the benefits of plants. I am in charge of the marketing at Bemis Farms Nursery, and I also serve on the joint **Plant Something** Task Force for the Massachusetts Flower Growers and the Massachusetts Nursery and Landscape association, whose goal is to increase awareness among the general public about the benefits of plants. Sometimes, it feels like herding cats. With this order, I am servicing a customer, who is already very passionate about the plants in the garden. I now deliver batches of them several times a year, and I get to help place them where they will be planted. I am not required to do this, but I love being a bigger part of the garden than just being the grower. I am paid for this service, as well as for consulting with what varieties would be best.

I just love delivery days. I get away from the farm for a while with an easy drive to Newport. I cross the bridge and enjoy looking at the water. I sometimes stop for lunch for a lobster roll at a little café on the other side of the bridge, where it is easier to park my big truck. But mostly, I am truly happy when setting out the plants in the garden. It is fenced off from the rest of the world and is my own, personal idea of what Heaven might look like. Three or four days a year, I get to leave the rat race behind and see the final results of where our plants go when they leave the greenhouse. I get to go back six weeks later and see how big they have grown since they left my care. I get to remember why I got into this business in the first place, which helps me go back home and write the next newsletter or Facebook post.

So what does this mean to you? Another consultant I work with, John Goldman of **Brand Launcher**, asks the question, "Who are your hungry fish?" Do you need to concentrate more time on finding the people who already want what you do? Should you spend less time casting a wide net for mediocre results? Can you change your business to profitably give customers what they are already asking for? For example, some people don't necessarily need a landscaper; they just need someone to come dig the holes for them, especially as our core customers get older. I have two, loyal customers in their mid-eighties that still want their flower garden, but can no longer dig holes. Should I do more to promote our planting service? Having just priced a "handyman" to help us catch up with some minor repairs, I found out the going rate is $75 to $100 per hour. It's time for me to raise our service price and go find more of these people. What about you? Ask your staff to what you have been saying, "We don't do that" repeatedly and find out if you can.

Winter Storage of Pesticides

While safety, security and environmental impact are the major concerns when storing pesticides, maintaining the quality of pesticides is also important during winter storage.

Here are some tips for winter storage of pesticides:

- Plan pesticide purchases so that supplies are used by the end of the growing season.
- Keep pesticides at temperatures above freezing, under dry conditions and out of direct sunlight. UMass Extension greenhouse BMPs recommend that pesticide storage should be restricted to a first story room or area which has direct access to the outside (according to the Board of Fire Prevention). Pesticides should not be stored in basements or outdoors.
- Read the label. Special storage recommendations or restrictions will be printed on the label.
- Write the purchase or delivery date of the product on the label with waterproof ink. Products may lose their effectiveness over several years.
- Ventilation is important for storage of most pesticides.
- Store herbicides separately from other pesticides to avoid cross contamination.

Below is a list of **pesticide formulations** and their **general sign of quality deterioration**:

- Emulsifiable Concentrate (EC) – Evidence of separation of components such as sludge or sediment. Milky appearance does not occur when water is added.
- Oils – Milky appearance does not occur when water is added.
- Wettable powder (WP) and Soluble powder (SP) – Excessive lumping; powder does not suspend in water.
- Granular (G) – Excessive lumping or caking

If a pesticide freezes, place it in warm storage (50° to 80°F). Shake or roll container every few hours to mix product or eliminate layering. If layering persists or if all crystals do not completely dissolve, do not use product. If in doubt, call the manufacturer.

Adapted from: New England Vegetable Management Guide

Resources

UMass Extension Greenhouse BMPs, Pesticide Storage, Handling and Disposal by Natalia Clifton, UMass Extension Pesticide Program

Pesticide Storage by John Bartok Jr., Agricultural Engineer and Emeritus Extension Professor, University of Connecticut

Tina Smith, UMass Extension and Leanne Pundt, UConn Extension

UMass Greenhouse Crops and Floriculture Extension Program

Douglas Cox Floral Notes Editor dcox@umass.edu
Geoffery Njue Extension Specialist gnjue@umext.umass.edu
Tina Smith Extension Specialist tsmith@umext.umass.edu

Six monthly issues of *Floral Notes by email* are published yearly.
Subscription (2 years) is $5. Contact Doug Cox for more information.