

Floral Notes *Newsletter*

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In This Issue

On the next page is information on an Extension program: "Greenhouse Production 2019 - Focus on Pest Management!" January 9th 2019. Then learn about the use of liquid and granular organic fertilizers in combination for petunias followed by a short "Farewell" article impacting the future of *Floral Notes* and *The Mayflower* newsletters. This issue also has articles on retail handling of poinsettias, Farm Succession program, 2019 Perennial Plant of the Year, and from MDAR agriculture truck regulations and updating or creating your business plan. Doug Cox



Poinsettia Nostalgia, French Hall Greenhouse 2010 Happy Holidays!

Greenhouse Production 2019 – Focus on Pest Management!

Wednesday January 9, 2019, 9:30 -3:30
Holiday Inn & Suites, 265 Lakeside Ave. Marlborough, MA

8:00 – 9:00 Registration and coffee/tea

9:00 – 10:00 Strategies for success with biological control – forecasting, quality control and storage *Ronald Valentin, Head Technical Support – North America, Bioline AgroSciences*
For successful biological control program timing of application, quality control and storage of the biological control agents (BCAs) is very important. In this presentation Ron will discuss how to forecast for BCAs needed, how to assess the quality and how to properly store the BCAs.

10:00 – 10:10 Break

10:10 – 11:10 Strategies for success with biological control – forecasting, quality control and storage Continued..... *Ronald Valentin, Head Technical Support – North America, Bioline AgroSciences*

11:15 – 12:15 Top 5 troublesome insect and mite pests, plus some dishonorable mentions
Dr. John Sanderson, Associate Professor of Entomology, Cornell University

This presentation will discuss the identification and control of major insect and mite pests of greenhouse crops including, aphids, thrips, mites (spider mites and broad mites), fungus gnats and whiteflies and brief mention of others. The discussion will also include tips on the most effective approaches to manage these pests.

12:15 – 1:15 Lunch on your own and networking

1:15 – 2:15 Using mineral nutrition to prevent diseases in greenhouse crops
Dr. Wade Elmer, Dept. Head, Plant Pathology and Ecology, Connecticut Agricultural Experiment Station

Mineral nutrients are essential for growth of plants and are important in plant-disease interactions.

Dr. Elmer will discuss how mineral nutrients affect plant response to disease

2:15 – 3:15 Utilizing Biofungicides to manage diseases in greenhouse crops
Dr. Anissa Poleatewich, Assistant Professor, University of New Hampshire

Integrated pest management (IPM) is the new normal in greenhouse. Microbes and other biofungicides are now playing an important role in IPM for managing diseases of greenhouse crops. In this presentation, Dr. Poleatewich will discuss biological control of plant diseases in the greenhouse highlighting available biofungicide products.

4 Pesticide Credits requested. For more information contact:

Geoffrey Njue, Univ. of Mass, Waltham (781) 891-0650 x 12, gnjue@umext.umass.edu

Plant Response to Different Combinations of Nature's Source and Eco-Vita Organic Fertilizers. II. Petunia

Douglas Cox
Stockbridge School of Agriculture
University of Massachusetts
Amherst

In the July-August 2018 issue of *Floral Notes* I reported on the results of a recent trial with 'First Lady' marigold fertilized by combining two organic fertilizers together. Different levels of Eco-Vita granular fertilizer were incorporated in the growing medium pre-plant and followed up by post-plant liquid Nature's Source applications.

In general, the marigolds grew well and flowered normally with the fertilizer treatments provided during the experiment. The only visible abnormality was the somewhat lighter green color of plants fertilized Nature's Source, Eco-Vita, and the combination of the two. Overall, the results showed that organic fertilizers applied alone or in combination can be successful in growing a typical bedding plant. Routine monitoring of nutrients, especially N and soluble salts level, followed by fertilizer adjustment, if necessary, would be advisable.

The current article reports on the response of 'Ultra Red' petunias to the fertilizer treatments used earlier for marigolds.

How the plants were grown

'Ultra Red' petunia plugs were potted 6 March in 4½-inch pots of Fafard 3B soilless mix. Plants were fertilized with 250 ppm N from Plantex (20-2-20) chemical fertilizer or Nature's Source (3-1-1) liquid oil seed extract fertilizer. In other treatments, Eco-Vita 7-5-10 organic granular fertilizer was incorporated in the growing medium before planting to supply 100, 75, 50, or 25% of the total N applied to the plants during the experiment. In the 100% Eco-Vita treatment 7.2 gm/pot (11.4 oz./cu.ft.) of fertilizer was applied. All fertilizer treatments in this trial supplied 500 mg N/pot during the course of the experiment whether the fertilizers were applied as liquids alone. In the Eco-Vita treatments Nature's Source was applied at regular intervals to equalize the amount of applied N in each treatment. During the experiment all plants were watered with same volume of water or liquid fertilizer.

Pots were suspended through the lids of larger containers to collect leachate for N analysis at 10 day intervals to determine the total amount of ammonium, nitrate and total nitrogen leached during the experiment.

At the end of the experiment, 2 May, plant height, number of open flowers, number of stems 7" or longer were determined and the shoots were harvested to measure dry weight. Growing medium was also sampled for pH and soluble salts determination.

Results

Plant appearance and growth. Overall the plants in all treatments were of acceptable appearance and growth (Figures 1 and 2). There were no symptoms of nutrient deficiency and the plants were normal green in color unlike the mild N deficiency that appeared on the marigolds in the earlier study. The irregular look of the plants could be attributed to the habit of growth shown by most petunias.



Figure 1. Left to right. Plantex, Nature's Source, Eco-Vita 100%



Figure 2. Left to right. Eco-Vita 75%, Eco-Vita 50%, Eco-Vita 25%

The shoot dry weight of plants in all treatments, except Nature's Source, was nearly the same and there were no significant differences in height, number of open flowers at harvest, and the number of stems measuring 7" or more in length between any of the treatments (Table 1). Despite the visible irregularities among plants fertilized differently, measurements revealed little difference in size and growth among the plants.

Table 1. Growth of petunias treated with different organic fertilizers

Fertilizer treatment	Shoot dry weight (gm)	Plant height (cm)	No. of open flowers at harvest	No. of stems (7" or longer)
Plantex 20-2-20	10.6a	22.1 ^{ns}	15 ^{ns}	8 ^{ns}
Nature's Source 3-1-1	6.8b	24.0	10	5
100% Eco-Vita 7-5-10	9.7a	23.2	15	7
75% Eco- Vita	10.1a	22.0	13	7
50% Eco-Vita	10.5a	25.0	16	8
25% Eco-Vita	9.8a	23.2	14	7

Nitrogen leaching and growth medium EC and pH

Collected leachate was analyzed for NO₃-N and NH₄-N and the totals were added to determine the total N leached (mg N/pot) from each container (Table 2). N leaching was greatest in the 100%, 75%, 50%, and 25% Eco-Vita. NH₄-N, rather than NO₃-N was the major form of N that leached in the case of Eco-Vita treatments. The lowest level of N leaching occurred when Plantex and Nature's Source were the sole sources of N.

Growth medium EC (soluble salts) in all treatments were quite low, but were somewhat higher in the 50 and 75% Eco-Vita than the other treatments. Probably the low EC levels were the result of frequent applications of water or liquid fertilizer during the term of the experiment. Similar results occurred in the earlier marigold experiment. pH, did not differ greatly among the treatments and pH was acceptable for growing petunias.

Table 2. Nitrogen leaching, growth medium EC and pH .

Fertilizer treatment	NH₄ leached (mg N/pot)	NO₃ leached (mg N/pot)	Total N leached (mg N/pot)	Medium EC	Medium pH
Plantex 20-2-20	8.6b	4.7a	13.3b	0.28b	6.3 ^{ns}
Nature's Source 3-1-1	9.6b	2.5a	12.1b	0.38b	6.4
100% Eco-Vita 7-5-10	64.3a	2.8a	67.1a	0.33b	6.5
75% Eco- Vita	49.8a	2.1ab	51.9a	0.54a	6.4
50% Eco-Vita	21.8a	1.5a	23.3b	0.53a	6.2
25% Eco-Vita	34.4a	4.6a	39.0b	0.40b	6.4

Conclusions

The performance of 'Ultra Red' petunias was quite good in all fertilizer treatments tried in this study. There were no symptoms of nutrient deficiency or other nutritional disorders. N leaching was the greatest in Eco-Vita treatments, results suggested that Eco-Vita is much richer in $\text{NH}_4\text{-N}$ than $\text{NO}_3\text{-N}$. As Eco-Vita is a "slow-release" fertilizer like most organic fertilizers it steadily released $\text{NH}_4\text{-N}$ during the experiment. Careful and limited trials with the organic fertilizers is probably the best way to get a handle on how well the organic fertilizers grow the plants you are producing in your greenhouse.

References

Cox, D.A. 2018. Plant Response to Different Combinations of Nature's Source and Eco-Vita Organic Fertilizers. I. Marigold. *Floral Notes*. 31(1).

Cox, D.A. 2014. Organic Fertilizers - Thoughts on Using Liquid Organic Fertilizers for Greenhouse Plants. *Floral Notes*. 29(1). <http://ag.umass.edu/greenhouse-floriculture/factsheets/organic-fertilizers-thoughts-on-using-liquid-organic-fertilizersdocument>

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Farewell!

This will be my last issue as Editor of *Floral Notes*. After 186 issues over 31 years and 10 years as Editor of the combined *Floral Notes* and MFGA *The Mayflower* newsletter for MFGA members it's time to "pass the baton" to the members of the UMass Greenhouse Crops and Floriculture team, Jason Lanier, Geoffrey Njue, and Angela Madeiras. I want to thank the many contributors to the newsletters especially Tina Smith, Paul Lopes, and Bob Luczai. They made it possible for *Floral Notes* to survive for so long, hopefully a new and better newsletter will appear soon. My plans are to finish out Spring 2019 teaching my courses and then to retire from UMass in May.

I also want to thank Chris Joyner, Jeff Anderson, Dave O'Neil, and the late Tom Beauchesne for their help in my research and teaching and the advice and knowledge about greenhouses and plants they shared with me over the years. As well, their work helped free up time for me to prepare the newsletters. Thanks to the growers for allowing me to visit their greenhouses and for their attendance at my talks at Extension and MFGA programs. I learned a lot from these visits and programs, I hope you did too.

Doug Cox, *UMass Stockbridge School of Agriculture*



Poinsettia Retail Handling Tips

Here are some tips for handling poinsettias in retail settings.



- Upon receiving plants, carefully unpack and unsleeve plants. Poinsettias left in the sleeve are prone to epinasty (droopy). Epinasty is caused by ethylene production and petioles of poinsettias naturally produce ethylene in response to sleeving. Symptoms are worse if plants are sleeved for long periods of time or stored (sleeved) at temperatures above 65F. Plants generally recover from epinasty in a couple of days when placed in a lighted area at 65F to 75F. However, plants may be slow to recover or may not recover from epinasty if they have been sleeved for extended periods.
- Check growing medium moisture and water only if needed. Epinasty can be mistaken for wilted plants (due to lack of water). Use caution when watering if plants have pot covers or saucers. Remove drained water to avoid "wet feet" - one of the quickest ways to kill poinsettia plants.
- Place poinsettias in bright light at 65F to 72F.
- Place plants away from hot or cold drafts. Avoid placing plants near a heat duct or outside door that would expose the plants to sudden changes in temperature.
- Poinsettias should never be stored in an unheated area.
- Provide adequate spacing in the display area to prevent bruising bracts and broken stems when customers handle plants.
- Carefully handle and water plants to prevent bruising the bracts and breaking stems and leaves. Poinsettias are fragile.
- Always sleeve poinsettias to provide cold protection before plants go out the door! Poinsettias are sensitive to chilling injury and can be damaged when exposed to temperatures below 50 °F. The longer that plants are exposed to low temperatures, the more damage that occurs. Red varieties of poinsettias with chilling damage have bracts with bluing or necrotic edges with inner bracts that sometimes turn a whitish color.

[Holiday Plant Care for Fall and Winter](#) (*Fact sheet*)

Garden retailers are invited to print and distribute this fact sheet on Holiday Plant Care for Fall and Winter to their customers.

Tina Smith, UMass Extension and Leanne Pundt, UConn Extension

Farm Succession School in Southern New England

For farmers and farm couples looking toward retirement and farm transition.



Marlborough, Massachusetts:

at Massachusetts Farm Bureau
from 10:00 a.m. – 3:30 p.m.

December 5, 2017
January 11, 2018
February 7, 2018

Additional no-cost
advisor assistance
through MDAR.*

Wethersfield, Connecticut:

at Connecticut Farm Bureau
from 10:00 a.m. – 3:30 p.m.

December 6, 2017
January 10, 2018
February 6, 2018

Warwick, Rhode Island:

at USDA Service Center
from 10:00 a.m. – 3:30 p.m.

December 8, 2017
January 9, 2018
February 8, 2018

One of your biggest challenges is planning for farm succession. Attend the Farm Succession School! You'll get structured and sustained support to make decisions, engage your family, and organize the legal and financial mechanics.

Topics include goal setting, estate planning, retirement planning, family communications, taxes, legal structure, Medicaid, and bringing on a successor. Your commitment of three winter days will allow you to develop a concrete plan **for your farm business, your land, and your retirement.**

Farmers who have participated loved the amount of attention they received, and valued the trust and sharing that developed among the participants, regardless of scale or type of enterprise.

“ It opened my mind to all that’s involved and not be afraid to seek help from professionals.

“ A must do! Definitely would recommend it. Well worth the time!

Open to all New England farmers! Space is limited. Register **by November 17th** by calling (603)357-1600 or go online to landforgood.org/events.

Instructors include:

- [Jon Jaffe, Farm Business Consultant, Farm Credit East](#)
- [Kathy Ruhf, Senior Program Director, Land For Good](#)
- An attorney with expertise in succession planning

The fee is \$300 per farmer or farm couple, including lunch and materials. Plus, participants will receive **\$200 credit** toward hiring succession-related technical assistance. Attendees will also receive no-cost technical assistance between sessions and discounted continuing planning support from Land For Good.

* Massachusetts Department of Agricultural Resources' (MDAR) Agricultural Business Training Program is partnering with LFG to offer additional technical assistance to Massachusetts farmers who complete this school. MDAR will provide succession planning technical assistance through its Agricultural Business Training Program. Details at landforgood.org/events.



Gaining ground for farmers



Phase Two

The Land Access Project is funded by the USDA National Institute of Food and Agriculture through its Beginning Farmer and Rancher Development Program, Grant # 2015-04544. The project is directed by Land For Good in partnership with over 40 collaborating organizations, agencies and individual experts in six New England states.

Short Notes

Trucking Compliance for Northeast Agriculture, Forest Producers, and Commercial Fishing Webinar December 20, 2018

Each year, the laws and regulations relating to trucking compliance grow more and more complex. To help navigate these ever-changing laws, Clay Eppard, of Fleet Safety Services, will present this webinar, covering some of the key regulations Northeast producers need to know to stay in compliance, as well as some of the exemptions granted to farm vehicles. Andrew Walmsley, of the American Farm Bureau Federation, will also update attendees on any new regulations tracked nationally by Farm Bureau. This webinar will be held **Thursday, December 20, at 12 noon**. This webinar is free to all participants. To register, follow this link: <https://www.farmcrediteast.com/knowledge-exchange/Webinars>

Upcoming Educational Programs

Planning is underway for the MFGA Winter Meeting scheduled for February 12, 2019. Also in planning is a program called Employee Training for Garden Retailers for April 2, 2019.

Marketing to Elementary School Children

Last year, the MFGA applied for and was awarded a grant to give seed starter kits to elementary school children. Under the inspiration of Tina Bemis, the MFGA applied for and received a grant from the Specialty Crop Block Grant from MDAR. The funds were used to produce 500 seed starter kits containing 32 small pots, the peat pellets to fill them, seeds and instructions. Working with Mass Ag in the Classroom, the kits were completed in one morning. Each kit is designed for one classroom and 176 seed kits were distributed to teachers during the Boston Flower Show. Word spread about this program, and members of the MFGA were instrumental in distributing the remaining kits to teachers across Massachusetts. Due to the efforts of volunteers, there is enough money left in the grant to repeat this program next spring. Contact Bob Luczai if you want to participate in the program next year.

Looking to Update or Create Your Business Plan?

Think about the MDAR Ag Business Training Program www.mass.gov/service-details/agricultural-business-training-program-abtp "**Tilling the Soil of Opportunity**" - a 10-session course (usually held early Winter), typically offered on weekday evenings, based on NXLEVEL Guide for Agricultural Entrepreneurs. Classes held in either Amherst or Marlboro.

For those already operating a commercial, income generating agricultural enterprise and in need of a comprehensive business plan. This in-depth course offers a chance to assess, plan ahead, set goals for expansion, or clarify transfer/succession. The course draws on peer experience, instructor knowledge, and guest speakers. Meets USDA/FSA certification for "Borrower Training". Cost per enterprise - \$200. Applications are accepted on a rolling basis until a course is filled. Contact: Melissa.L.Adams@state.ma.us (413)548-1904.

Correction

In the September-October 2018 issue of *Floral Notes* the article "Nitrate Accumulation and Growth of Lettuce Under Commercial Organic and Chemical Fertilizer Solutions" has an error: the title of the first paragraph should be "Introduction" rather than "Discussion."

Stachys 'Hummelo'

Bee friendly!



Hardiness

USDA Zones 4 to 8, foliage may remain evergreen in warmer climates.

Light

Full sun to part shade.

Soil

Well drained soil; water as necessary.

Uses

This colorful and compact winner makes an excellent addition to the full sun perennial border. Terrific in combination with ornamental grasses, *Echinacea purpurea*, and *Asclepias tuberosa* (2018 Perennial Plant of the Year®). Wiry stems make for a great cut flower as well.

Unique Qualities

Pollinators can't resist the striking midsummer spikes of magenta flowers rising above bright green, trouble-free foliage. 'Hummelo' was the highest rated *Stachys* in the Chicago Botanic Garden Evaluation Trials for its strong flower production, vigor, habit, quality and winter hardiness.

Maintenance

Spreads slowly by creeping rhizomes. May benefit from division every few years. Strong stems and seed heads add to winter interest. Considered deer-resistant!

2019

Perennial Plant of the Year®

© 2018 Perennial Plant Association

Photo credit: Paul Westervelt

Brochure content thanks to Holly Scoggins, Ph.D., Virginia Tech Horticulture and Paul Westervelt, Saunders Brothers



2019 Perennial Plant of the Year® Stachys 'Hummelo'

The Perennial Plant Association has awarded the title Perennial Plant of the Year® 2019 to *Stachys* 'Hummelo'. Stunning in massed plantings, and popular with designers, this late June-July bloomer is as trouble-free and dependable as it is eye-catching.

Selected and introduced by famed German grower Ernst Pagels in the late 1990's, this perennial further gained popularity as it was used by renowned designer and plantsman Piet Oudolf in some of his signature works. "Hummel" means "bumblebee" in German - appropriate, as Ernst observed many pollinators visiting the flowers. The cultivar name also honored Ernst's close connection to Piet and his nursery and home at Hummelo, Netherlands.

Stachys 'Hummelo' and related cultivars go by the common name of betony or woundwort. *Stachys* is in the mint family (*Lamiaceae*) with its characteristic opposite leaves and square stems. The genus also includes lamb's ear - *Stachys byzantina* - known for its woolly silver leaves. However 'Hummelo' features basal rosettes of ovate, glossy, bright green leaves. Tiny, two-lipped, rose-lavender flowers appear in dense spikes atop mostly leafless flowering stems, rising well above the foliage to 1 ½ to 2 feet tall in summer. Clumps will spread over time to form a dense ground cover. It is valued for its crinkled foliage and long display of prolific flowering spikes.

As previously noted, *Stachys* 'Hummelo' received the highest rating out of 22 *Stachys* taxa in a comparative study by Richard Hawke, Plant Evaluation Manager of the Chicago Botanic Garden. Exceptional qualities included reblooming without deadheading, no observed reseeding, and outstanding uniformity.

The nomenclature of 'Hummelo' is not straightforward. Some resources, such as the Naamjilist and IPNI refer to *monieri* as the specific epithet (some sources spell it as *monnieri*). Many others list it as *Stachys officinalis* 'Hummelo', including the Royal

Horticulture Society, Missouri Botanical Garden, and Allan Armitage's *Herbaceous Perennial Plants: A Treatise on Their Identification, Culture and Garden Attributes*.

Additional synonyms include *Stachys macrantha* 'Hummelo'. The World Checklist of Selected Plant Families, published by The Royal Botanic Gardens, and the Euro+Med PlantBase describes *S. monieri* as a "misapplied name" for the species in general and *Betonica officinalis* as a basionym (original name given a taxon). To further the confusion, a number of European nurseries now list it as *Stachys pradica* 'Hummelo'. **Regardless of nomenclature, we all agree *Stachys* 'Hummelo' is an outstanding plant!**

Grower notes (nursery and greenhouse)

Stachys 'Hummelo' requires vernalization in order to flower. Plant in fall for overwintering prior to spring sales, or confirm with your young plant supplier that liners received in spring have been vernalized. Once dormancy breaks, this is a quick and easy crop - finishes in 8-10 weeks with no plant growth regulators necessary.

Resources

Chicago Botanic Garden Research:
https://www.chicagobotanic.org/research/or-namental_plant_research/plant_evaluation

Royal Horticulture Society:
<https://www.rhs.org.uk/Plants/202743/Stachys-officinalis-Hummelo/Details>

Armitage, Allan M. 2008. *Herbaceous Perennial Plants: A Treatise on Their Identification, Culture, and Garden Attributes*. 3rd Ed. Stipes Publishing.

About the Perennial Plant of the Year® (PPOY)

The program began in 1990 to showcase a perennial that is a standout among its competitors - the ORIGINAL Perennial Plant of the Year award!

Perennials chosen for this honor are suitable for a wide range of growing climates, require low maintenance, have multiple-season interest, and are relatively pest/disease-free. The PPA Board reviews the nominated perennials and selects 3 or 4 perennials to be placed on the ballot. Perennial Plant Association members vote each September for the PPOY two years forward and also nominate two additional plants for next year's ballot.



Photo credit: Janet Draper



Photo credit: Janet Davis



Photo credit: Janet Davis