



# Green Industry News

Volume 7

July 2001

Number 5

## CALENDAR OF EVENTS

<b>Pond Management Evening Program</b>	July 24, 2001
<b>Perennial Plant Symposium</b>	July 29 - August 4, 2001
<b>MDA Nutrient Management Certification Test</b>	August 3, 2001
<b>Cut Flower Growers Conference</b>	August 7, 2001
<b>Cut Flower Growers Tour</b>	August 8, 2001
<b>MGGA Conference on Nutrient Management</b>	October 26, 2001

Details begin on page 6

**Russell Balge officially retires from the University of Maryland this month after 26 years of service. Good Luck and Best Wishes to you, Russ!**

**Perennial Plant Of The Year  
*Phlox paniculata* 'David' 2002  
Russell Balge**

*Phlox paniculata* 'David' has been named the Perennial Plant of the Year for 2002 by the Perennial Plant Association. As a native of the United States, *P. paniculata* is found from New York south to Georgia

and west to Missouri and Arkansas. It favors thinly wooded, alluvial, lowland, fertile soil, with a nearly neutral pH. *P. paniculata*, sometimes listed as *P. decussata*, is commonly called Summer Phlox, Perennial Phlox, Garden Phlox, or Fall Phlox, and less commonly Sawpit Flower or Lychinidea.

The original plant of 'David' was spotted by Richard Simon of Bluemount Nursery, Monkton, MD, in the Conservancy Garden at the Brandywine Museum in Chaddsford, Pennsylvania. The cultivar is named David after the late husband of Mrs. F. M. Moobury, the director of the conservancy.

*P. paniculata* typically grows 2 ½ to 4 foot tall as a vertical multi-stemmed clump. The leaves are opposite at the base and may become alternate and somewhat clasping towards the top of the stems. The individual leaves are simple, 2-6 inches long, oblong-lanceolate, one inch wide, pointed, tapering towards their base, strongly veined, and minutely toothed. The plant may need staking when mature. *P. paniculata* has a tendency to lose its lower leaves, a characteristic

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known as the “Bare Leg Syndrome”.

The inflorescences are domed, up to 10-to 12-inch wide panicles. The flower color may be white, pink, rose, violet, purple, or red. Some of the individual  $\frac{3}{4}$  -to 1-inch-wide flowers may have a darker eye. The five petals of the individual disk-shaped flowers are fused into a tube at their base where they are clasped by the sepals. *P. paniculata* begins to flower in July in the Northeast United States and continues blooming into September. The flowers are often quite fragrant.

The cultivar ‘David’ is noted for its unusually large-headed, clean-white, 10-to 12-inch-wide, domed panicles. ‘David’ surpasses the previous standard for white flowers, ‘Mt. Fuji’, by a considerable margin. ‘David’ begins to bloom in midsummer and carries on into September. It remains upright without staking despite its 4-foot-tall height and retains its foliage all the way to the base of the plant.

*P. paniculata* is one of the more spectacular perennials for the flower border, making a great summer-long display. Because it is usually tall and frequently guilty of the above mentioned “Bare leg syndrome”, it is best planted at the back of the border. According to Ann Lovejoy, *P. paniculata* mixes well with *Miscanthus sinensis* ‘Variegatus’, silver Maiden Grass; *Echinops* spp., Globe Thistles; *Verbascum* spp., Mulleins; *Phorium* spp., New Zealand Flax; and *Eryngium* spp., Sea Hollies.

*P. paniculata* is not a low-maintenance herbaceous perennial. It prefers a fertile, moist, but well-drained soil. *P. paniculata* grows best in full sun but will tolerate light shade, although at the expense of heavy bloom. It fares best in areas with hot climates or exposures with only afternoon sun. The roots enjoy the cool damp environment provided by a summer mulch and should have a winter mulch to guard against spring heaving. *P. paniculata* is completely winter hardy throughout USDA cold hardiness zones 4-8, and heat tolerant throughout American Horticulture Society heat tolerance zones 9-4.

Pinch the plants in early spring to induce

branching. This will prevent legginess and induce more flower heads, although at the expense of individual inflorescence size. *P. paniculata* needs abundant fertilizer and moisture for optimum growth and summer flowering. Fertilize with 2-3 ounces of nitrate-based complete fertilizer/yd<sup>2</sup> of bed space in spring. Thinning the clump to 4-6 stems will strengthen those stems that remain and improve air circulation throughout the clump, allowing the stems and foliage to dry out more rapidly, thereby decreasing the chance for disease. Deadhead the plants as the inflorescences begin to fade to inhibit the plant from going to seed. The unwanted progeny of the plants, if they are not deadheaded, will not be true to type. *P. paniculata* can be transplanted almost any time, even when in full bloom.

The easiest way to propagate *P. paniculata* is by division or shoot cuttings in spring. Commercially, dig clumps of *P. paniculata* in the fall and remove large roots to within two inches of the crown. Replant the crown. Cut the thick roots into 2-to 3-inch long lengths and place them upright in a flat containing a mixture of sand and peat. Cover the tops of the root cuttings with  $\frac{1}{2}$  inch of the sand/peat mixture and keep the substrate moist but not wet. The plantlets should be ready for transplanting in the spring and may flower the first growing season. Variegated cultivars like ‘Harlequin’ and ‘Nora Leigh’ will revert to solid green foliage if propagated from root cuttings, and must be propagated by division or stem cuttings in spring. Do not propagate *P. paniculata* from seed, as the offspring will not come true to type.

*P. paniculata* is susceptible to several disease problems, among them various leaf-spots, phlox blight, and powdery mildew. There is no real answer for the phlox blight, which is characterized by the browning and drying up of the foliage from the base of the plant up to the bloom. Good cultural practices that include adequate watering should help. Cutting back diseased stems to the ground is also advised. If this fails, dispose of the plants. Leaf-spot organisms primarily attack the lower leaves of phlox, appearing as dark brown circular spots up to  $\frac{1}{4}$  inch in diameter, with gray centers in the spots. Infected

leaves dry up and die prematurely. Dispose of the infected plant parts and use conventional fungicides according to the label.

The most serious disease problem with *P. paniculata* is powdery mildew, caused by various strains of *Erysiphe cichoracearum* fungus. Powdery mildew can be so bad as to disfigure the plants to such a degree that they become stunted and ugly. The strains vary with location and climate but all appear as white fungal threads on the upper surfaces of the leaves. These threads produce spores early in the season. The spores germinate, penetrate the leaves, and absorb nutrients, causing the leaves to yellow and eventually die. The overwintering structures of the disease organism appear as “pepper” on the leaves in late season. They overwinter in buds and on debris, and release spores the following spring to continue the disease. One of the main reasons that ‘David’ was nominated as Perennial Plant of the Year, is that it is very resistant to powdery mildew.

There are several conditions that affect powdery mildew. Wind triggers spore release, aiding distribution, but also helps dry leaves so that spores don’t germinate as easily. If the leaves are wet for a short period of time, powdery mildew is encouraged, but a forceful water spray will help prevent the occurrence of powdery mildew. While some strains of powdery mildew germinate under low relative humidity, most germinate under conditions of high relative humidity. High temperatures, over 86 °F kill spores, except under high humidity, while moderate temperatures promote the disease. Plants in light shade are more susceptible to powdery mildew, probably because it is damper. While phlox plants are heavy feeders, overly lush foliage from excess nitrogen is more susceptible to powdery mildew.

A variety of cultural or management options can help reduce the incidence of powdery mildew. The first is the selection of powdery mildew resistant cultivars of *P. paniculata*. Aside from ‘David’ other powdery mildew-resistant cultivars of *P. paniculata* are ‘Bright Eyes’ (pale pink with crimson eye), ‘Darwin’s Joyce’ (pink), ‘Eva Cullum’ (clear pink with dark red eye), ‘Fairest

One’ (salmon pink with dark eye), ‘Franz Schubert’ (lilac with darker star-shaped eye), ‘Katherine’ (lavender with white eye), ‘Orange Perfection’ (dark salmon), ‘Prime Minister’ (white with red eye), ‘Robert Poore’ (red-purple), ‘Shortwood’ (pink with darker eye), and ‘Starfire’ (red). Keep in mind that we are talking of resistance, not immunity, and that resistance to powdery mildew will vary with the part of the country, environment, and cultural practices. Other cultural or management practices to follow are the eradication of all debris around the plants, allowing plenty of space between individual plants, thinning individual plants to allow good air circulation, and scouting for powdery mildew early in the growing season, ideally before Memorial Day. Cut back the infected stems if powdery mildew gets a jump on you. Water only at the base of the plants with a soaker type hose. Thin the plants to 4-6 strong stems. Divide the plants every two to three years, saving only the strongest divisions.

Organic methods of controlling powdery mildew include baking soda, 0.5% (1.5 Tbsp/gal water, weekly); Sunspray Horticultural Oil (3 Tbsp./gal water, biweekly) or a combination of the above two measures every 2 weeks. There has been some success with the use of antidesiccants applied periodically as the leaves expand. The fungicide Bayleton has given limited control of powdery mildew.

*P. paniculata* suffers from two pest problems, nematodes and spider mites. Nematodes are best dealt with by lifting and discarding the entire infested plant and replacing a significant amount of the soil surrounding the root ball. Spider mites may be controlled with conventional miticides applied to the underside of the leaves or the use of predacious mites.

*Russell Balge has been a regional specialist at the Western Maryland Research and Education Center, Keedysville, Maryland. Russell Balge retires effective this month.*

## **Yucca: How Can This Plant Have a Problem?**

Stanton Gill

Yucca is tough. You cannot find a better plant to grow in hot, sunny areas of the landscape. There are thin leafed, variegated and large leafed varieties that have been brought into the market and we are seeing more and more of them in landscapes. Of course, when any plant becomes common in a landscape a bug problem moves in. The Yucca is no exception.

Yes, Yucca plants are being attacked by bugs. Not just one species but two. One attacks the foliage and the other attacks the flowers.

The bug that damages the foliage is called the Yucca Bug. The damage is a stippling injury with green-black fecal droppings being deposited by the bug. The nymphs from the first generation have been very active in June and adults should be present by the end of June. There are at least 3 generations per year. Fortunately, they are fairly easy to control with an application of Orthene or Merit 75 WP.

The insect that damages the flowers is a beetle called the pleasing fungus beetle. The beetle is elongated in shape and light brown in color. The adult beetles lay eggs in the flower petals. The larvae feed in an open mine which turns the flower petals brown. The problem with this pest is that if you sprayed to control the larvae then most materials would kill bees that visited the flowers. We are still looking for a good control for this pest.

*Stanton Gill is a regional specialist at the Central Maryland Research and Education Center, Ellicott City, Maryland.*

### **Large Scale (Insect) Problems**

Colin Stewart

All adult female scales in Maryland and the surrounding states are wingless and range in size from 3/64" to 1/2" (1-12 mm) in length. Adult male scales, which have non-functional mouthparts, are more rarely encountered and often mistaken for small flies, which they

closely resemble. Most soft scale females produce a soft, often transparent, waxy protective covering and large quantities of honeydew, a sugary waste product. Sooty mold, caused by fungi that often grow on honeydew, not only detracts from the aesthetics of the plant, but can inhibit photosynthesis as well. Armored scales produce a tough outer cover that can be separated from the insect's body and do not produce honeydew.

Scales that attack foliage typically use their piercing/sucking mouthparts to withdraw plant juices from the underside of the leaves. At the same time they inject toxic saliva that causes the upper surface of the foliage to appear chlorotic or mottled. High populations of scales that infest twigs and trunks cause stunting and dieback of affected limbs.

While examining scale insects, look for circular emergence holes in the scale covers which indicate that they have been killed by tiny, parasitic wasps. Similarly, jagged, irregular holes in the scale covers indicate that they have been killed by one of a number of lady beetle species, dustywings, or other predators with chewing mouthparts. Large numbers of predators and parasites often make chemical controls unnecessary and disruptive.

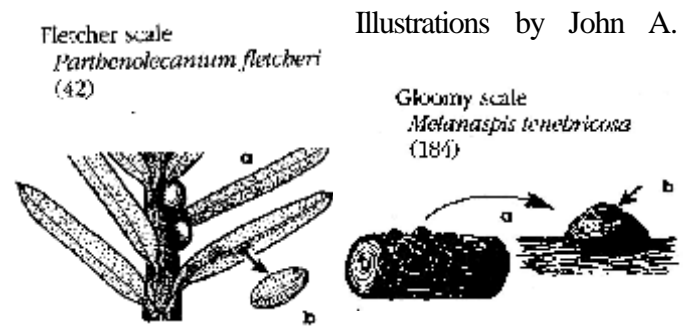
Application of insecticides to adult scale insects is largely ineffective due to the presence of the protective covering. As a result, the highly vulnerable newly-hatched crawler is targeted. One valuable technique for detecting crawlers of branch and trunk-infesting scale insects is to wrap double-backed tape around the branch on both sides of adult females. The tape can be placed in an out-of-the-way location and monitored each time the property is visited. The crawlers, typically 1/64" to 13/64" (1-3 mm) long, emerge from under the female scale or armored scale cover and become trapped on the tape. The crawler stage of foliar scales can best be detected using a hand lens.

Four percent dormant oil applications, made at air temperatures above 40°F and before budbreak, can be effective at controlling scale species that overwinter as immatures on the bark or foliage. Predators and parasitoids are less likely to be injured at this time of the

year and landscape professionals are less involved in other duties. The application of a 2% horticultural oil suspension will control crawlers without seriously affecting natural enemy populations. Small, localized scale populations can often be eliminated by pruning the affected areas and destroying them.

Fletcher scale, (*Parthenolecanium fletcheri*), is a soft scale that severely damages yew, as well as arborvitae and juniper and causes early needle drop. Large amounts of honeydew and sooty mold can also be produced. There is one generation per year. Yellow-brown, fully-grown, 3/16" in diameter hemispherical females (a) are found on twigs, while the overwintering immatures (b) (against which dormant oils are effective) are often on the needles. A systemic, foliar-absorbed insecticide can be used to kill the crawlers (present after egg hatch) from mid-June through July.

Gloomy scale, (*Melanaspis tenebricosa*), is an armored scale that primarily attacks the 1- 4 year old branches of red and silver maples (although other hosts have been recorded) resulting in dieback and stunting. Mature females (a) are gray/black, round, and approximately 1/8" in diameter. There is one generation per year, and immatures overwinter on the bark, against which dormant oil applications should be directed. In severe infestations, 2% horticultural oil applications can be made to control the crawlers in July.



Davidson  
For more information on specific scale insects, see: Davidson, J. A., and M. J. Raupp. 1997. "Landscape IPM- Guidelines for integrated pest management of insect

and mite pests on landscape trees and shrubs." University of Maryland Cooperative Extension Bulletin 350. and Johnson, W., and H. Lyon. 1991. Insects that Feed on Trees and Shrubs, 2<sup>nd</sup> Edition Revised. Cornell University Press.

Colin Stewart is a research associate in the Department of Entomology at the University of Maryland, College Park.

### Production / Postproduction Factors For Achimenes

Thomas M. Blessington, David L. Clement, and Susan M. Tater

#### Introduction

- C Scientific names: *Achimenes*
- C Common name: Hot water plant
- C Native to Northern Mexico, Central America and the West Indies
- C Ideal plant for hanging baskets
- C Flowers are single, five lobed; 1-2.5 inches across
- C Short-stemmed plants and have 3-4 pubescent leaves per node

#### Growth and Development

- C Force newly planted rhizomes into growth at day temperatures of 75-80EF, 60EF at night
- C During early growth and cutting propagation, daytime temperatures are 68-70EF
- C Flower initiation is improved at 68EF at night
- C Axillary shoot number increases at 63EF night temperature
- C Optimum light level is 5,000 footcandles (fc)
- C Can be grown in full sun during winter or partial sun in summer
- C Full sun can cause burning of leaves
- C Stock plants should be grown under long days
- C Continuous light is harmful to plant
- C Keep plants uniformly moist; do not over water
- C Substrate should be porous, including equal parts of substrate, sand, and peat
- C Plant growth regulators may be used

- C Rhizomes for stock plants are planted into large trays, 2" spacing for rows, end to end and 250-300 can be planted in a 16 × 24" tray
- C Plants are produced in 4" pots
- C Hanging pots are commonly 6"
- C Apply up to 200 ppm N of 20-10-20 soluble fertilizer with each watering

### Propagation

- C Grown from seeds and rhizomes
- C Rhizomes are 0.5-1.5"
- C Cuttings are taken from February to June
- C Quality of cuttings decreases in summer
- C Propagation occurs under tents or light mist
- C Rooting substrate is bottom heated to 73-75EF
- C Cuttings root in 14-18 days
- C Seeds flower in 5-6 months
- C Seeds are generally germinated December to March
- C Seeds are very small
- C Seeds do not require covering after being spread over a well drained substrate
- C Seeds are germinated at 75-80EF
- C Seeds germinate rapidly if kept in moist conditions in 14-21 days
- C Seedlings are transported from seed flats to cell packs, then to final container

### Disorders

- C **Diseases**
  - Botrytis can be a problem with inadequate ventilation
  - Tobacco mosaic virus
    - Sterilize soil to eliminate pathogens
- C **Pests** - Whitefly

### Consumer Care

- C Fertilize with 20-10-20 at up to 100 ppm N once a month
- C Avoid exposing plants to temperatures below 41EF
- C Plants are sensitive to ethylene

- C Flowers and flower buds abscise within 24 hours after exposure of 1-3 ppm ethylene

- C Varieties:
  - *A. candida*, *A. erecta*, *A. glabrata*, *A. grandiflora*, *A. longiflora*, *A. patens*

*Thomas Blessington and David Clement are regional specialists and Susan Tater is a technician at the Central Maryland Research and Education Center, University of Maryland, in Ellicott City, MD.*

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## Calendar of Events

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### July 24, 2001

#### Pond Management Evening Program

Co-sponsored with Maryland Nursery and Landscape Association, Landscape Contractors' Association and FALCAN

**Location:** CMREC, Ellicott City, Maryland

**Fee:** \$20 for members of MNLA, LCA and FALCAN; \$25 for non-members.

**Contact:** Suzanne Klick, 301-596-9413

### July 29 - August 4, 2001

#### Perennial Plant Association (PPA) Symposium

**Location:** Hyatt Regency, Crystal City, VA

**Contact:** PPA at 614-771-8431

### August 7 and 8, 2001

#### Cut Flower Growers Conference and Tour

Co-sponsored by the Maryland Greenhouse Growers Association (MGGA) and the Association of Specialty Cut Flower Growers (ASCFG)

**Location:** The August 7<sup>th</sup> conference will be held at the Timonium Fairgrounds. Buses for the tours will leave from the Timonium Fairgrounds on the 8<sup>th</sup>.

**Contact:** Suzanne Klick at 301-596-9413

**Conference Registration fee (Lunch included):** \$25 for members of MGGA and ASCFG; \$30 for non-members; \$35 for everyone after August 1, 2001 (*Lunch is not guaranteed after deadline*)

**August 8<sup>th</sup> Cut Flower Tours:** Flowers by Bauers, Watercolor Lavender Farm and Foxborough Nursery  
**Tour Fee:** \$40 for members of MGGGA and ASCFG; \$45 for non-members. The registration deadline is August 1, 2001.

**Make checks payable to:** University of Maryland  
**Send to:** Cut Flower Programs, 11975 Homewood Road, Ellicott City, MD 21042

**October 26, 2001** (*change from previous listing*)

**MGGGA Nutrient Management Seminar**

**Location:** Patuxent Wildlife Visitor Center

**Contact:** Hank Doong, 301-249-1700

**MDA 2001 Pesticide Container Recycling**

**Collection Dates and Locations**

**9:00 a.m. to 3:00 p.m.**

**Nicholson Transfer Facility on Earl Nicholson RD**  
August 6, September 4

**MidShore Regional Solid Waste Facility on Barker's Landing Road** - August 10, September 7

**Wicomico County Landfill on Brick Kiln Road** August 17, September 14

**Scarboro Landfill, 3241 Scarboro Road** - August 14, September 11

**USDA Research Center, Bldg. 302, Visitor Center on Powder Mill Road** - July 27, August 24, September 21

**St. Andrew's Landfill, Rt. 4 (St. Andrew's Church Road)** - August 1, September 6

**Frederick County Landfill, 9031 Reich's Ford RD**  
July 24, August 21, September 18

**Southern States Oakland Coop., 1862 Maryland Highway** - July 23, August 20, September 17

**Martin's Elevator, 13219 Maugansville Road**  
August 7, September 4

**Please Note:** Because of legal restraints only residents from Caroline, Kent, Queen Anne's and Talbot Counties are able to use the collection site at Easton. Lower shore residents must use the collection site in Salisbury. Frederick County has agreed to allow residents from outside Frederick County to submit empty pesticide containers for recycling, but **NO TRASH** from outside of the county will be accepted at the landfill under any terms.

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