

CALENDAR OF EVENTS

- Greenhouse Growers' Short Course**
June 19, 20 and 22, 2001
- Better Container Production Workshop**
June 28,
2001
- Pond Management Evening Program**
July 24, 2001
- Perennial Plant Symposium**
July 29 - August 4, 2001
- Cut Flower Growers Conference**
August 7, 2001
- Cut Flower Growers Tour**
August 8, 2001
- Bedding Plant International Conference**
September 24 - 30, 2001

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The Red Imported Fire Ant: Maryland's Newest Visitor !

Matthew A. Travis



The red imported fire ant is being introduced, at an alarming rate into Maryland's landscape and nurseries. The number of new detections since 1988 has dramatically increased. Until 1999 ten isolated infestations had been detected and eradicated. There were two new detections during 1999. However, in 2000 there were seven new detections; one detection site alone having more than fifty (50) mounds (colonies). Until 1999, the level of infestation had been relatively low and fairly isolated, but now infested sites have been averaging four to five colonies per site. All of the detections were associated with commercial landscape installations and/or nurseries importing the stock from infested southern states.

The red imported fire ant, *Solenopsis invicta*, is a serious stinging insect pest having agricultural and human health importance and is currently under federal quarantine. This insect is a native to South America. It can attack and sometimes kill newborn domestic animals as well as pets and wildlife. Also, it feeds on buds or fruits of many plants. The insect's ability to quickly colonize in a variety of habitats and its aggressive foraging behavior pose additional risks for establishment in Maryland.

The ant was first discovered in the 1930's in Mobile, Alabama. Since that time, it has spread to 14 States and Commonwealths. Currently there are infestations in all or part of Alabama, Arkansas, California, Florida, Georgia, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas and Virginia. The best control tactic is early detection combined with a bait treatment (aids in eliminating the queen). There is a federal quarantine for all areas where red imported fire ant is established. All regulated materials, which could harbor the insect, must be treated and the insect eliminated prior to shipment from the quarantine area. **However, interstate shipments of nursery stock still remain the most common means of transport for the red imported fire ant.**

As fire ant infested stock is detected, the Maryland Department of Agriculture (MDA) is working on plans to survey new (up to three years old) construction site landscapes throughout the entire state. The focus of the survey will be sites which utilized nursery stock associated with fire ant infestation. MDA is also working on a database of out-of-state nurseries which are located within the quarantined area and sell nursery stock in Maryland. This information will be taken from Plant Dealer License and Nursery Inspection Certificate applications. It will be used to alert nursery growers and landscapers to nursery stock that might be infested. Eradication of this pest is imperative.

Through the cooperative efforts of all involved, we can limit the introduction and establishment of the red imported fire ant in Maryland. Also, early detection will increase the likelihood of successful eradication. With vigilant surveying, information exchange, and industry cooperation Maryland nursery growers/landscapers will be able to feel assured that the plants they sell or install will not come back to sting them!

Matthew A. Travis is an entomologist in the Plant Protection and Weed Management section of the Maryland Department of Agriculture.

Winter Injury

Stanton Gill

Wow! What a cold winter. How cold has it been? According to NOAA this winter has been the coldest since the late 1880's. Evergreen plant material that has performed well for many winters are showing burnt leaves and dieback. Several species of holly including foster holly, American holly and Chinese holly appear to have been hit the worst.

We are also seeing dieback of branches of several species of Japanese Red maples. As the weather warms -up this spring we will continue to see additional dieback occurring on plants that are growing on the edge of their hardiness zone.

This spring you can plan on lots of pruning work and removing dead branches. If you are not sure of the extent of the dieback, check leaf buds by cutting them in half with a razor blade to see if the leaf buds are green and viable. If they are light colored or green then they are still viable and the branch should not be pruned back. If the tissue is discolored then prune off the damaged wood.

Stanton Gill is a regional specialist for commercial horticulture at the Central Maryland Research and Education Center, University of Maryland, in Ellicott City, MD.

Landscape Design to Conserve Beneficials and Reduce Insect Pest Outbreaks

Paula M. Shrewsbury

Insect pests outbreak more frequently in managed landscapes than in more natural habitats such as parks and wooded areas. Several factors influence this pattern. In natural systems there is an ecological balance between the different members of the ecosystem community (plants, herbivores, natural enemies, soil microbes, etc.). When these ecosystems are disturbed, as occurs by farming or urbanization, those balances are disrupted, especially those related to natural enemies and plant feeding insects. Also in managed landscapes many of our maintenance practices, such as pesticide applications, are disruptive to natural enemies. These disruptions lead to

fewer beneficial insects and more frequent insect pest outbreaks.

More recently researchers and practitioners have tried to identify methods to restore the balance between natural enemies and plant feeding insects. Studies include identifying the needs of the natural enemies and how we can “enhance” our landscapes to provide these needs and make our landscapes more favorable for natural enemies. This method of pest management is referred to as conservation biological control.

It is known that natural enemies need habitats that provide refuges, favorable microclimates, and alternative food sources such as multiple types of insect prey and floral resources. Studies have shown that landscapes that are more “structurally complex” provide more alternate prey and the other needs of natural enemies than “structurally simple” landscape and therefore have greater numbers of natural enemies. Structurally complex landscapes are those that have more plant material such as trees, shrubs, ground covers, and herbaceous plants. Studies have also demonstrated that there is a strong trend for structurally complex landscapes to have fewer insect pest outbreaks than structurally simple ones.

Many of our common natural enemies, such as lady beetles, lacewings, flower flies, minute pirate bugs, parasitic wasps, and others are omnivorous. Not only do they feed on insects but they feed on plants, especially the nectar and pollen of flowers. By incorporating flowers into our landscapes we not only increase the structural complexity of the landscape but we also provide floral resources. Several studies have shown that certain natural enemies live longer, have greater survival, and lay more eggs after feeding on nectar and pollen. Flowering plants also provide mating sites and attract alternate prey such as thrips or aphids for the natural enemies. Incorporating flowering plants into your landscapes should attract and keep natural enemies there so when plant feeding insects move in the natural enemies are ready and eat them up before they cause significant damage.

In designing flowers into landscapes you should consider the species of flower you use. Not all plants have nectar and pollen that are accessible and/or are attractive to natural enemies. A partial list of plants that

have been found to favor natural enemies is listed below. The best spatial arrangement and patch size of flowering plants within your garden is not clearly known. Studies of the movement and foraging behaviors of natural enemies are being conducted. I have seen recommendations to dedicate 5 to 10% of your landscape to flowers. It is critical to provide a succession of flowers to attract and support natural enemies throughout the growing season. In designing landscapes we should consider not only aesthetics and plant culture, but also strive to create landscapes that are favorable for natural enemies.

Flowering Plants to Attract and Support Beneficial Insects:

Umbelliferae (Carrot family): coriander; dill; toothpick ammi; Queen Anne’s lace

Brassicaceae (Mustard family): sweet alyssum; Brassica spp.

Compositae (Daisy family): blanket flower; cosmos; sunflower; coreopsis; daisy; tansy

Plants in other families: buckwheat; phacelia; legumes

Paula M. Shrewsbury, is an Extension Specialist in Ornamental and Turf Entomology at the University of Maryland, College Park.

New Fact Sheet Available On-Line
**Fertilizer Recommendations for Landscape
Trees & Shrubs**
<http://www.agnr.umd.edu/users/ipmnet>

**Commercial Fertilizer Applications
to Non-Agricultural Land**
Earle Canter

The *Water Quality Improvement Act of 1998* authorizes the Maryland Department of Agriculture to regulate the use of commercial fertilizer on land not used for agricultural purposes. Effective October 1, 2000, all persons employed to apply nutrients to ten or more acres of non-agricultural property—regardless of individual parcel size— or State property of any size are required to do so following recommendations provided by Maryland Cooperative Extension. *This requirement does not apply to homeowners making their own nutrient*

applications.

The following are some frequently asked questions concerning applications of fertilizer to land and plants.

What Is Commercial Fertilizer?

A substance containing a recognized plant nutrient used for its plant nutrient content and designed for use, or claimed to have value, in promoting plant growth, except unmanipulated animal and vegetable manure, marl, lime, wood ashes and gypsum.

Define Land Not Used for Agricultural Purposes.

A parcel of land that is not assessed for agricultural use under Tax-Property Article, § 8-209, Annotated Code of Maryland. This includes commercially managed home lawns, golf courses, athletic fields, cemeteries, landscape plantings, and all state land.

Explain Who Must Comply With the Law.

A person or a company who is hired to fertilizes multiple parcels of nonagricultural land totaling 10 acres or more in one year, or a person or a company who is hired to fertilizes state land of any size that is nonagricultural land. This includes an employee of the owner of the land or a manager of the land.

What Types of Information Are Applicators Required to Keep?

According to the law, applicators are required to keep records of their activities on file for three years. These records should include documentation that Maryland Cooperative

Extension recommendations were followed regarding soil tests (conducted at least once every three years), production and management objectives, and timing of the nutrient application. Additionally, records are required regarding the amount, location, timing, rate and content of nutrients applied to land and plants.

Are There Penalties for Companies or Individuals Who Do Not Comply With the Law?

Yes. Civil penalties of up to \$1,000 for the first violation and \$2,000 for subsequent violations may be imposed.

A \$10,000 maximum may be imposed for violations associated with the same set of circumstances.

What If I Have a Question or a Problem?

The Maryland Department of Agriculture regulates the application of nutrients in Maryland. If you suspect that your applicator is not complying with the law, call or write the Maryland Department of Agriculture, Nutrient Management Program, 50 Harry S. Truman Parkway, Annapolis, Maryland, 21401, (410) 841-5959, www.mda.state.md.us.

Earle Canter works in the Nutrient Management Section at the Maryland Department of Agriculture in Annapolis, MD.

NEEDED !

BLACK VINE WEEVIL and AZALEA LACE BUG

In my lab we are conducting research to develop alternative pest management tactics for key insect pests of ornamental plants in nurseries and landscapes. We are in desperate need of Black Vine Weevil and Azalea Lace Bug to set up our field trials.

If you have infestations of BVW or ALB please contact my Research Associate, Dr. Colin Stewart, at 301-405-2868 or cs305@umail.umd.edu. We would like to collect these insects from your landscape or nursery sites.

Thank you for your help. Dr. Paula Shrewsbury

Sometimes, Gardening Can Slip Between the Cracks

Russell Balge

Introduction

Terraces and pathways are often left to benign neglect. If they are solid surfaces they are functional but harsh and do little to soften the transition between the house and the lawn, expanses of ground covers, or flower beds. If they are composed of bricks, flagstone, or pavers of one sort or another, terraces and pathways are all too often areas in which grasses have invaded the cracks from the lawn or weeds have sown themselves. However, terraces and pathways offer unique opportunities if they

are purposefully interplanted with ground-hugging, durable, foot-traffic-resistant plants with interesting foliage and flowers.

Many plants thrive if they are given the opportunity to get their roots in, around, and even under paved areas. Of course you know this all too well if you have spent countless hours weeding between bricks as I have. That many plants thrive in what would first be judged to be an inhospitable environment for their roots is not all that unreasonable. The soil beneath stones never dries out completely, nor does it easily become compacted or waterlogged. The soil under a hard surface is warmed by the bricks, flagstone, or pavers that cover it during sunny periods. Consequently, the soil is far less subject to extremes and sudden changes in temperature. Rodents can not ravage the roots as readily. All of these factors make the soil between hard surface units an ideal habitat for choice plants. A final bonus is that planted terraces always seem to feel sunny even when they are not and you can get close to your plants even in, or immediately after the harshest of weather.

While there is an immediate visual, softening effect when the cracks between the elements of terraces and pathways are planted, it takes about two years to establish the plants and a good three years to develop a real sense of what the final design should be. Never consider planted terraces as a living area in the same sense as decks or patios. Think of planted terraces and pathways as flowerbeds that you can walk through with ease. Use only the most durable plants in those interplanted areas you are going to walk through or along them with any regularity.

The process of laying a terrace or pathway is best left to textbooks on the subject, here are a few special considerations to guarantee the survival of the plants planted between the cracks.

Drainage

Good drainage is essential for the plants that are going to mingle with the elements of the terrace or pathway, as well as for the paving elements. Paving elements are in reality a super mulch. Some pavers, like bricks, may actually absorb moisture and release it to the plants placed between them. Good drainage is necessary

to avoid a waterlogged soil that may suffocate the root system of the plants or cause frost heaving of the pavers. The surface of the terrace or pathway should have a slight pitch, about one inch for each yard, to insure good surface drainage. It may be necessary to bury perforated pipes to carry away subsurface water.

Soil Preparation

Sometimes you are blessed with a good soil, having only to strip the sod, but most times you will need to improve the soil. This is next to impossible if the terrace or pathway is already in place. If you are putting a new terrace or pathway in place, add humus and sharp sand to poorer soils. Avoid an overly organically rich soil, as the plants will become too lanky with the increased fertility resulting from the breakdown of the organic matter. Grade the terrace area or pathway to the proper pitch after amending it.

Choosing the Proper Paver

The choice of paver is determined by the availability of materials, the taste of the gardener, and the depth of the gardener's pockets. Among the more common choices of paving materials for terraces and pathways are fieldstone, bluestone, and bricks.

Fieldstone is a lovely choice, especially if it is already clothed with lichens and field moss. Bluestone is available in most garden centers by the foot or pound. Do not mix the true blue-colored bluestone with some of the reddish types of bluestone that are available. Brick is commonly used, but offers a special problem. To look its best, the brick must be laid close together. If you try to open the pattern up a bit to grant space for plants, it ends up becoming a bit shabby as the bricks shift about when they are not held firmly in place by their neighbors. One solution is to create a random pattern of open, slits (a brick or so wide) in the pattern of the bricks in the terrace or pathway like a weaving. In a short time the plants will cover the edges of the open areas, creating the illusion of a solidly paved terrace or pathway.

The Plants

Choosing the plants for interplanting terraces and pathways is a personal choice, but there are a dozen or

so proven no brainer winners. What ever you do, exercise restraint. By all means avoid over planting. The aim is to achieve a balance between the visible hard surface and the planted areas. Do not expect an immediate effect. You must be willing to pitch some plants and start over.

Plant in drifts and colonies. Avoid the botanical zoo look. Try to relate the plants harmoniously to the hard surfaces and to neighboring plants. The idea is to make the planted-terrace-pathway-area look as if it was an act of nature. Use an occasional unharmonious, almost clashing plant for accent.

Among the best plants to use for interplanting terraces and pathways are:

Allium caeruleum; Blue Globe Onion; 12-24" tall by 18" wide; deep blue, blooms late spring; zones 2-7.

Allium senescens; German Garlic; 6-12" tall by 6" wide; 4-9 basal grass-like green leaves; lilac-pink, blooms summer; zones 4-7. 'Glaucum' much more attractive than species, has twisted, blue-green leaves, flower said to be darker pink than species.

Arenaria spp.; Sandworts; grassy or moss-like foliage; does well in moist, slightly acid soil; prefers full sun but tolerates partial shade where summers are hot. **A. montana**, has a 2-inch-tall carpet of gray green foliage set off by clusters of white flowers in late spring or early summer, zone 5.

Armeria juniperifolia; Pyrenees Thrift; 2-4" tall by 6" wide; leaves densely tufted, linear, 3-angled, 3/4-inch-long; flowers small, lilac, 3/8" diameter, tufted heads, blooms summer; zones 4-8. Several cultivars including 'Alba', white-flowered; 'Beechwood', compact with deep pink flowers; 'Bevan's Beauty' stemless pink flowers; 'Rubra', rosy-red flowers; and 'Suendermannii'

Armeria maritima; Common Thrift; 6-12" tall by 10" wide; leaves tufted, pink, mauve-red, lilac, or white flower head, consists of many small flowers attached to dome; blooms summer; zones 4-8.

Chamaemelum nobile; chamomile, foliage softens a stone pathway or terrace with its dense but soft texture, does well in sun to partial shade, aromatic when leaves are crushed, has tiny daisy-like flowers with white petals and yellow centers, zone 4.

Dianthus nitidus cvs., prostrate perennials with spotted rose-pink flowers less than one-inch-wide on 3-inch-tall stems, flowers intermittently throughout late spring and

summer, holds up particularly well under trampling, spreads nicely by seed or from stolons along cracks, does well in high pH soils such as those between limestone-derived hard surface pavers, zone 6.

Dianthus plumaris; Cottage Pinks, Grass Pinks; species seldom found; 18 to 24" tall by 12" wide; foliage gray-green and grass-like; many cultivars; flowers very fragrant, borne in great profusion in May, colors range from cherry-red to silvery pink to white, flowers single and double; zones 3 to 8.

Herniara glabra, Rupturewort, 3-inch-tall mat with spreading and rooting stems densely covered with 1/4-inch-long bright green leaves that turn bronze to red in fall, evergreen in warm climates, flowers inconspicuous; grown for foliage, zone 5.

Mazus reptans; forms 2-inch-tall mat; roots readily between stepping stones; leaves larger than most plants used for this purpose, spring and summer blooming, with blue or white flowers in one-sided clusters, with yellow centers in purple blossoms; grows in sun or partial shade; prefers moist soil; zone 6, even 5.

Mentha requienii, Corsican Mint, flowers early summer with tiny light purple blooms, plant only one inch high with 1/8-inch bright green leaves, looks like moss, best in moist sun or partial shade, zone 6.

Phyla nodiflora canescens; grows 1 to 3 inches tall, slightly taller in shade, stems extend several feet from crown; leaves green to gray in summer, turn red in fall and brownish in winter; flowers resemble tiny clover flowers; very heat and drought tolerant, only needing to be watered infrequently, zone 10.

Sagina subulata, Pearlwort, evergreen, grows about one inch tall, dense finely divided bright green leaves, diminutive white flowers bloom singly in summer, not a true moss, zone 4. Cultivar 'Aurea' has golden yellow leaves. Needs more shade than species.

Satureja douglasii; related to mint and herb savory; oval, scalloped leaves have strong minty fragrance when crushed; 4-to 6-inch-long stems root as they creep along ground; grows quickly; reserve for large areas; purple or white, spiked blooms produced all summer long.

Sedum spp., Very diverse group with many prostrate species and cultivars ideally suited to growing in the cracks between paving units of terraces and pathways. Genus could be treated by itself.

Sempervivium spp.; Hen-and-Chickens, Stonecrops; an extremely diverse group with many species and cultivars too numerous to name that are suitable for growing in the

cracks between paving units.

Thymus spp. approximately 350 species, many used for culinary as well as ornamental purposes, leaves oval to oblong; stems are vigorous growers that turn woody with time and need to be cut back periodically, flowers lavender to pink, rich in nectar and attract bees. A few of the thymes that are adaptable to growing through the cracks are: **T. herba-barona**; small, less than ½-inch-long leaves, tiny purple flowers, smells of caraway when crushed. **T. praecox** ‘Pseudolanguginosus’; Woolly Mother of Thyme, tiny furry leaves, 3-4” tall by 12” wide, blooms in summer with pink flowers, zones 5 to 8. **T. richardii** subsp. **nitidus**; shiny grayish leaves and lavender flowers. **T. serpyllum**; Wild Thyme, Mother of Thyme, 4-6" tall by 12" wide, creeps right on ground, has bright-red flowers in summer and fall, over 40 cultivars, zones 5 to 8. **Thymus vulgaris**, Culinary Thyme, small shrub or shrublet, 6 inches tall, requires some pruning to keep it under control, zone 5. **Veronica prostrata**; Harebell Speedwell; 3-8" tall; spreading; needs to be cut back periodically; leaves 1/2 to 1 inch long, grayish green, slightly hairy; blue flowers borne in summer in short dense racemes axils of leaves; zones 5 to 8.

Veronica repens; creeping speedwell, rapid creeping grower; shiny ½-inch-long leaves have moss-like appearance; blue, white, or pink flowers displayed in late spring and early fall; prefers full sun or partial shade and rich moist soil, common weed in lawn, zone 5.

Russell Balge is a regional specialist at the Western Maryland Research and Education Center, University of Maryland, Keedysville, Maryland.

Plant Water Requirements

Thomas Blessington, David Clement, Rondalyn Reeser,
Sarah Tater, and Susan Tater

Introduction:

- Plants need more water than any other substance
- The water content of plant tissues can vary from 5% in seeds to 95% in leaves and succulent parts by dry weight
- The water content in a plant part varies with species, type of part, age of part, time of day, and the

environment

- The amount of water that is bound within the plant is called the water of constitution and makes up only 1% of the dry weight
- Water acts as a solvent to dissolve gasses, nutrients, and minerals
- Water allows roots to take up nutrients from the substrate and transport them up to the shoots
- Water enables the plant to maintain turgor pressure so that non-woody plants can stand upright
- Without water the cells shrink and the plant wilts
- Water keeps the inside of cells fluid so that cellular functions can occur

Factors to Consider in Regulating Moisture Supply

- Amount of water to be applied is influenced by the amount and type of substrate, type of growing container, heating system, and the crop species
- Water requirements change with the growth stage of the plant, seedlings require less water than mature plants
- Time of year effects when and how much to water, crops require less frequent irrigations in the winter than in the summer
- Method of irrigation
- Effect of moisture stress vs adequate amount of water on the quality and quantity of growth

Methods of Water Absorptions

- Most of the water plants need is taken up through the roots
- Root hairs increase the surface area of the roots for absorption
- Water is also absorbed by the corky covering of the older roots
- Water uptake is slower but since this region makes up more surface area it may take up an equal amount of water as root hairs
- Water diffuses into the root from areas of higher ion concentrations to lower ion concentrations

- Most water is absorbed through the roots, some through the stems

Excess Water

- Compacted substrate with poor drainage may not contain enough pore spaces
- Over watering floriculture crops can fill pore spaces and reduce the amount of oxygen available to the roots
- Roots are injured and will eventually die if oxygen is not available
- Inadequate amounts of oxygen to the roots for 24 hours can effect the overall plant growth

Moisture Stress

- Under limited water conditions the rate of transpiration exceeds the rate of water absorption, cells don't have enough water and lose turgidity
- Duration and degree of water stress and the stage of growth of the plant at the time of the water stress determine effect on plant growth
- Moisture stress during flower bud initiation can reduce flower number
- C Water content mostly effects plant growth by influencing cell enlargement
- C Permanent wilting point
 - S The point at which a plant can't recover from water stress even if watered
 - S Plant tissues are permanently damaged
 - S Influenced by the stage of growth of the plant and species
- Moderate wilting
 - S Plants recover when watered
 - S Can be used as a height control method as cells formed under water stress are smaller and produce compact, short plants
 - S May lead to a reduction in plant quality
 - S Wilting may lead to yellowing and abscission of fruit and leaves, increased susceptibility to sunburn and disease, and reduced photosynthesis

Important Water Quality Factors for Irrigation

- Irrigation water should be checked periodically as it can change from season to season and over time
- Electrical conductivity (EC): measures the soluble salt level
- Should be low, between 0.1 - 0.5 dS/m
- High levels of soluble salts may cause plants to wilt, stunt growth, and produce marginal leaf necrosis
- Plants vary in their tolerance of higher EC levels
- Correct high EC levels by frequent leaching

pH: measure of the concentration of H^+ ions from 0 to 14

- Preferred irrigation water range is 5.0 - 7.0
- Determines if the pH of the substrate will change during production
- High pH can be corrected by injecting nitric, phosphoric, or sulfuric acid
- If phosphoric or nitric acid is applied, reduce the amount of phosphorous or nitrogen in the fertilizer program
- Acid converts the carbonates and bicarbonates into carbon dioxide and decreases the pH

Alkalinity: measures the total amount of carbonates and bicarbonates and expressed as calcium carbonate $CaCO_3$

- Desirable range is 40-100 ppm
- Determines the speed at which the substrate pH will change during production

Nutrient levels: low levels of nutrients in the irrigation water may be useful

- If there are high levels of nutrients in the water the fertilizer program may need to be adjusted

Thomas Blessington and David Clement are regional specialists and Rondalyn Reeser, Sarah Tatar and Susan Tater are technicians at the Central Maryland Research and Education Center, University of Maryland, in Ellicott City, MD.

Calendar of Events

Except where noted , the contact for the programs listed below is Suzanne Klick at 301-596-9413 or sk85@umail.umd.edu

June 1, 2001

Procrastinator's Pesticide Recertification Conference

Location: Montgomery College, Germantown, MD

Contact: Steve Dubik, 301-590-2838

June 19 - 21, 2001

Greenhouse Growers' Short Course

Location: Prince George's Cooperative Extension Office, Clinton, Maryland

June 28, 2001

Better Container Production Workshop

Location: Edrich Farms Nursery, Baltimore, MD

Topics: Insect control, nutrient management, irrigation systems and a 2 hour session on weed control in nurseries by Jeff Derr, Hampton Roads Experiment Station, Virginia Tech.

July 24, 2001

Pond Management Evening Program

Location: CMREC, Ellicott City, Maryland

Topics: New and interesting plants for pond; Fish care for ornamental ponds; Dealing with mosquitoes in small ponds; Controlling submerged vegetation and algae in ponds; Controlling aquatic insects that damage ornamental pond plants.

July 29 - August 4, 2001

Perennial Plant Symposium

Location: Hyatt Regency, Crystal City, VA

Contact: Perennial Plant Assoc. 614-771-8431

August 7, 2001

Cut Flower Growers Conference

Location: TBD

August 8, 2001

Cut Flower Growers Tour

Location: tour areas of central and northern Maryland

September 24 - 30, 2001

Bedding Plant International Conference

Location: Hyatt Hotel, Baltimore, Maryland

Contact: Mary Mycka (BPII) at 800-647-7742

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by Maryland Cooperative Extension is implied.

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