

CO-HORT

A NEWSLETTER FOR TURFGRASS AND LANDSCAPE ISSUES.

TURFGRASS TOPICS

by Victor A. Gibeault

The following releases are from the latest issue of "Better Turf Thru Agronomics," which is an activity of the University of California Riverside Turfgrass Research Advisory Committee. The newsletter is edited by Vic Gibeault and Deborah Silva.

Sting Nematode Threatens Coachella Valley Golf Courses; Quarantine Is In Effect

One of the most damaging of all agricultural pests in Florida has gained a foothold in Coachella Valley golf courses, but UC scientists are on the attack to contain its spread in California.

Spread of the sting nematode in California could have disastrous impact on the turf and agricultural industries, with additional negative repercussions on tourist and recreational trade, warns a UC Riverside nematologist who is studying the pest, a newcomer to the state.

Sting nematode attacks turf, citrus, grapes, and many other agricultural and horticultural crops. Although it has been documented only in the Palm Springs area to date, it can survive and thrive in all of Southern California.

"The sting nematode is considered one of the most damaging of all agricultural pests in Florida; therefore, we must be diligent to ensure that its

foothold in California is contained," says Ole Becker, UCR Cooperative Extension Nematology Specialist.

The ability of this nematode to feed on a wide host range coupled with the warm climate and irrigated sandy soils of California's inland deserts offer ideal conditions for rapid multiplication and spread of this pest, Becker says.

Since 1992, when it was first discovered in California turf, sting nematode (*Belonolaimus longicaudatus*) has invaded home lawns and at least 10 golf courses in the Palm Springs area of the Coachella Valley, which are now under quarantine.

According to regulatory authorities, the only location in the state where research on sting nematode can be conducted safely is the Nematode Quarantine Facility at UC Riverside.

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UC scientists are proactive in their research, education, and management strategies to limit the spread of this noxious pest, despite few resources being earmarked for the study of sting nematode to date.

Becker and his UC colleagues are extending information to golf course superintendents, pest control advisers, and homeowners to slow down the nematode's spread. Research studies concentrate on biology, population dynamics, and control.

Like all plant parasitic nematodes, sting nematodes feed on crops by puncturing cells with their mouth stylets and then sucking up the cell contents. Sting nematodes are ectoparasites that attack roots in the soil from outside the plant, near the root tip.

The wounds caused by the nematode's puncturing stylet can serve as points of entry for secondary infections by disease-causing soil microbes, which would not have access otherwise to plant tissues. Secondary infections can increase plant stress and can accelerate root death. Aboveground symptoms of sting nematode infestation are not specific. Plants appear drought-stressed, chlorotic, and stunted. Necrosis and death usually follow.

Sting nematodes are native to sandy soils in the southeastern and midwestern United States and are believed to have been imported here on turf from the southeast.

No turf or soil can be removed from the quarantined Coachella Valley golf courses where sting nematode has been documented, without notifying the Riverside County Agricultural Commissioner. Soil samples should be sent only to a laboratory authorized to run quarantine samples such as the Nematode Quarantine Facility at UCR, Becker said.

Maintaining Bermudagrass Athletic Fields in LA County: A New UC Report

A user-friendly UC report provides public turf managers in Los Angeles County with objective, research-based information for improving current maintenance practices on bermudagrass athletic fields.

Two UC Cooperative Extension turf researchers recently published **Maintaining Bermudagrass Athletic Fields in Los Angeles County**, a user-friendly, 14-page report designed to provide the public turf manager with objective, research-based information relevant to implementing or improving current maintenance practices.

The new report was recently distributed at two seminars in Monrovia and Long Beach, made possible by a grant from the Southern California Turfgrass Foundation.

In Los Angeles County, more than 1.4 million youth in grades K-12 use public school athletic fields and city and county parks, the majority of which are planted to bermudagrass, either common or hybrid.

"Personnel responsible for the upkeep of these facilities face the day-to-day challenge of maintaining safe, healthy, and attractive playing surfaces that can withstand wear and soil compaction. When budgets and resources are limited, the need to develop a strong turf maintenance program based on sound management practices becomes essential," wrote Janet Hartin, Extension Environmental Horticulture Advisor for Los Angeles and San Bernardino Counties and Vic Gibeault, Extension Environmental Horticulturist at UCR.

Primary and Secondary Maintenance Practices

To insure that the report is useful to public entities with limited budgets, Hartin and Gibeault identified and distinguished primary and secondary maintenance practices: Primary practices - irrigation, mowing, fertilization, and aerification - are essential to maintain safe, healthy bermuda-

grass fields. Secondary practices - thatch control, topdressing, overseeding, and pest management - are not mandatory, but often improve turf quality and field playability when implemented.

The 14-page report is packed with practical "how-to," discussion, and analysis for each of the primary and secondary maintenance practices identified in the text.

School districts and public entities are sometimes held liable for injuries sustained on athletic fields with poorly maintained, unsafe playing surfaces; thus, it is cost-effective and beneficial to take care of the turf. Well-maintained turf provides a cushioning surface to reduce injuries to participants in contact sports, such as football, soccer, and rugby. Turfgrass also prevents or reduces soil erosion, dust, glare, and noise, and dissipates heat.

Copies of the report may be obtained from Janet Hartin by calling (909) 387-2166.

Improvement of the Spring Transition of Overseeded Bermudagrass Putting Greens in the Coachella Valley: A Two-Year Study

Because of confounding environmental variables, any array of factors should be tested for at least two years before reliable conclusions can be made regarding improvement of spring transition of overseeded bermudagrass.

Current management practices in the Coachella Valley deliver an unparalleled overseeded product for the resort season, from late October through May; however, a systematic study of the cultural practices that will result in a stronger bermudagrass comeback in the spring is needed and was initiated by UCR turf researchers in October 1996.

"Because spring transition is a complex issue involving multiple factors, we should use a systematic, global approach that identifies all of the impinging research factors, prioritize them, and

then systematically evaluate their effects on bermudagrass comeback in the spring. The most limiting factors should be studied first and then the less limiting factors can be studied for refinement purposes," said Robert Green, UCR Turfgrass Research Agronomist and the project's leader.

"Any array of factors should be studied for at least two years before reliable conclusions can be made because of confounding environmental variables," Green said.

Research factors that influence the pre-overseed through overseed period as well as the overseed season through the spring/summer transition should be prioritized and assessed, Green said.

UCR's two-year research project at the Desert Horizons Country Club in Indian Wells tests four chemical treatments, two scalping levels, and two overseeding rates to determine which combination of these treatments applied during the fall will result in the fastest bermudagrass coverage during the spring-summer transition, without compromising putting green quality during the resort season.

Since cleat traffic can affect the competitive relationship among turf species, UCR's new putting green traffic simulator is being used on the research plots to yield representative wear during the study.

Visual estimates of bermudagrass and overseed perennial ryegrass and *Poa trivialis* coverage are being measured on key dates throughout the two-year study, Green said.

Soil and air temperature measurements, taken from on-site remote data loggers, are being correlated with bermudagrass green-up, which will clarify plant growth response to important environmental variables and research treatments and facilitate comparing data from multiple years, Green said.

The project is supported by the Hi-Lo Desert Golf Course Superintendents Association. Green's

cooperators are Grant Klein, Mike Henry, Steve Cockerham, and Francisco Merino.

Overseeding Pretreatments: An Evaluation

Pre-overseed chemical treatments do not offer any advantage in overseed success in Coachella Valley fairways, roughs, parks, and greenbelt areas during germination and early establishment of perennial rye, but a PGR pretreatment coupled with a second application one month after overseeding significantly reduces clipping yields.

There is no advantage to applying pre-overseed chemicals (plant growth regulators [PGR] and contact herbicides) to retard the regrowth of common bermudagrass in the Coachella Valley during germination and early establishment of perennial rye in the overseeding process, says a UC turf researcher who recently completed a two-year investigation at Desert Princess and Indian Wells Country Clubs.

However, a PGR pretreatment coupled with a second application 4 weeks after overseeding significantly reduced clipping yields during the subsequent 5-week period.

"Our objective was to evaluate common overseeding pretreatments being used by turfgrass managers to improve the speed, density, and uniformity of ryegrass seed establishment overseeded into bermudagrass fairways, roughs, parks, and greenbelt areas," said Mike Henry, UC Cooperative Extension Environmental Horticulture Advisor in Riverside County.

The UC study attempted to duplicate the normal practices used by golf course superintendents in the Coachella Valley during the overseeding period from late summer to late October. Standard golf course spray equipment was used, and the study was conducted on a research plot area comparable in maintenance quality to a golf course rough, but it was just out of play and adjacent to the course maintained by the golf course crew, Henry said.

Henry presented the results of this study in July, at the International Turfgrass Society Meeting in Sydney, Australia.

"Scythe," a new contact herbicide, and Primo, a PGR, were tested and compared with a "check" treatment (slow "dry-down" of the bermudagrass prior to renovation and planting of the overseed species without any chemical pretreatments) to determine (1) if the two chemicals offered benefits in obtaining a high quality stand of overseeded ryegrass in the short time frame before the areas open for play and (2) if these chemical treatments maintain turf quality through the fall and winter.

- There did not appear to be any difference in the initial establishment of the check plots and those treated with any of the pre-overseeding chemicals.
- There was no difference in color ratings between the treatments in November and December.
- The percent cover, an indicator of the establishment of the ryegrass vs. the regrowth of the bermudagrass showed no differences except in the first month after overseeding when the check had significantly better ryegrass cover than the treated plots, but this difference did not persist.
- Comparing the PGR treatments (Primo) with the contact herbicide-treated plots (Scythe) showed no significant differences at any time.
- By 7 weeks after overseeding, the differences in clipping weights were significant between the check (highest) and the chemically treated plots and between the plots treated once with Primo and those treated a second time with Primo (lowest).

This study was partially supported by a gift from the Hi-Lo Desert Chapter of the Golf Course Superintendents Association.

LANDSCAPE LINGO

by Dennis R. Pittenger

REDUCING TREE-SIDEWALK CONFLICTS IN CALIFORNIA CITIES

There are approximately six million street trees in California. These trees make our cities more attractive, enhance property values, and improve local environments. Because of our state's largely urban population, street trees have major, direct impacts on the quality of life for the vast majority of Californians. According to the 1992 report on the State of Urban Forestry in California, 80% of all California cities have tree programs and on average, each resident contributes about \$4.36 each year for municipal tree management. Recent research indicates that a typical tree in Sacramento produces benefits valued at about \$11 per year.

Although street trees provide a host of environmental, social, economic, and aesthetic benefits, costs for planting, pruning, and removal can be substantial. In addition, Californians are spending millions of dollars each year due to conflicts between tree roots and sidewalks. In San Jose alone, the cost of repairing all damaged sidewalks is \$21 million. Statewide, cities are spending \$62 million per year (\$2.36 per capita) on sidewalk, curb and gutter repair, tree removal and replacement, prevention methods, and legal/liability costs (Fig. 1). Some cities spend as little as \$0.75 per capita while others spend \$6.98 per resident. These figures are for street trees only and do not include repair costs for damaged sewer lines, building foundations, parking lots, and various other hardscape elements. When these additional expenditures are included, the total cost of root-sidewalk conflicts in California is well over \$62 million per year. Dwindling budgets are forcing an increasing number of cities to shift the costs of sidewalk repair to residents. This shift especially impacts residents in older areas, where trees are larger, infrastructure had deteriorated, and tree root-sidewalk conflicts are most severe.

According to the State of Urban Forestry in California report, the consequences of efforts to control these costs are having alarming effects on California's urban forests:

- Cities are continuing to "downsize" their urban forests by planting far more small statured than large-statured trees. Compared to small trees, large trees are more effective at providing shade, absorbing air pollutants, and intercepting rainfall.
- 18% of the responding cities are removing more trees than they plant.
- Sidewalk damage is the second most common reason that street and park trees are removed. We lose thousands of healthy urban trees and forgo their benefits each year because of this problem.

Collectively, this is a lose-lose situation. Californians lose in many ways: economically, environmentally, aesthetically, and socially. There is need for cost-effective strategies to retain benefits from large street trees while reducing costs associated with root-sidewalk conflicts.

Presently, the USDA Forest Service Western Center for Urban Forest Research and Education, the Department of Environmental Horticulture at UC Davis, and UC Cooperative Extension have proposed to conduct a broad-spectrum and well-coordinated research and education program to reduce damage caused by tree-sidewalk conflicts in California cities. Success will be measured by monitoring adoption rates, customer satisfaction, and the long-term cost effectiveness of implementation.

More information on this proposed project can be obtained by contacting Dr. Greg McPherson at the USDA Forest Service, UC Davis, (916) 752-5897; Dr. David Burger, Environmental Horticulture Dept., UC Davis, (916) 752-0398; or Dr. Larry Costello, UC Cooperative Extension, San Mateo and San Francisco Counties, (415) 726-9059.

GARDENING INFORMATION ON THE INTERNET

Source: National Garden Bureau, June 1997.

Not that many years ago, futurists talked about how modern day workers would counterbalance their "high-tech, low touch" lives at work with "high-touch, low-tech" activities such as gardening. The opportunity to be involved in an activity such as gardening, where people are personally involved in touching, feeling, planning, smelling and creating a whole, would be a natural balance to the impersonal use of computers and being involved in only a small part of a project. The futurists were right—gardening continues to be one of American's favorite activities.

But it is no surprise that the "high-tech" world of the computer Internet has met up with the "high-touch" world of gardening. There are a growing number of gardening information sites on the Internet that can provide answers to gardening questions, display color illustrations of plants, help with garden planning, and sell you a wide variety of garden supplies and tools.

The National Garden Bureau has put together a list of web sites for its members and others that can help one get started.

Many of these sites include many more features than can be listed here. Some are loaded with photos and graphics that can take a little while to appear on your computer screen, while others are straightforward and simple, but by no means less useful.

The following companies offer gardening advice, seed, and other products for sale via their web sites. Many offer an on-line request for catalogs.

W. Atlee Burpee Co.: (<http://garden.burpee.com>). Order a catalog, order seeds, plants and supplies, and hook up with other sites.

The Cook's Garden: (<http://www.cooksgarden.com>). Order a catalog, seeds, and supplies for the American kitchen garden.

Advance Seed Co./Ferry Morse: (<http://www.trine.com/gardennet/ferrymorse/>). Order a catalog; join a garden club, read articles, find seed suppliers.

Flowers of Tomorrow: (<http://www.flowerseed.com>). Specializes in wildflower and "heirloom" flower and vegetable seeds. Get advice. Link to other sites.

Harris Seeds: (<http://trine.com/gardennet/harris-seeds>). Get information on Harris, order a catalog.

Johnny's Selected Seeds: (<http://www.johnnyseeds.com>). Order a catalog, order flower, herb and vegetable seeds, get growing advice, see photos of some varieties.

Nichols Garden Nursery: (<http://www.pacificharbor.com/Nichols/>). Features herbs and rare seeds. Order a catalog, seeds, and supplies, plus get recipes and a garden tip of the week.

Park Seed Co.: (<http://www.parkseed.com>). Order seeds and supplies, e-mail customer service, growing advice, and links to other sites.

Territorial Seed: (<http://www.territorial-seed.com>). Order a catalog, order flower, vegetable and herb seeds, and garden supplies.

Vesey's Seed Co.: (<http://www.veseys.com>). Order a catalog, order flower and vegetable seeds, read gardening tips, link to other sites.

Commercial Sites

The following sites have been established mainly for serving professional growers. However, some contain new variety information, photos, links to other informative sites, and more. Check them out to see what's of interest to you.

Ball Seed Company: (<http://www.ballseed.com>). A site for commercial growers, but you can see pictures of products.

Goldsmith Seeds: (<http://www.goldseed.com>).

New variety photos, growing information, supplier listings, and links to other gardening sites.

Hammer Litho: (<http://www.hammerlitho.com>). Producers of colorful seed packets for the seed industry.

Promo Seeds Inc.: (<http://www.promoseeds.com>). Information on customized seed packets for promotions and retailers.

Seed Print Inc.: (<http://www.nova.co.at>). Sales of horticultural photos.

Other Sites Worth the Trip

The Virtual Garden: (<http://www.pathfinder.com/vg>). Magazine-type articles, regional growing tips, lots of photos, and a plant selection guide.

Garden Escape: (<http://www.garden.com>). An online magazine. Orders seeds, plants and supplies, read gardening articles, get advice, and design your garden.

Garden Web: (<http://www.gardenweb.com>). Read articles, link to other sites, exchange questions and answers on a bulletin board.

Garden Gate: (<http://www.prairienet.org/ag/garden/homepage.htm>). Helpful articles, links to other sites, garden "tours" via photos and text.

The Neighborhood's Gardening Launch Pad: (<http://www.tpoint.net/neighbor>). Links, links and more links to all types of sites of interest to gardeners.

Ashland High School, Ashland, Ohio: (<http://www.tccsa.ohio.gov/ashc/dan2.htm>). See what high school teens are doing in horticulture.

Coming Attractions

These sites are expected to be up and running soon. If you try and can't connect, wait a week and try again.

Chrised: (<http://www.alfseed.com>).

Liberty Seed Co.: (<http://www.libertyseed.com>).

S & S Seeds: (<http://www.ss-seeds.com>).

PESTICIDE INFORMATION SERVICE TO THE PUBLIC AND PROFESSIONALS

Source: Terry L. Miller, Extension Pesticide Coordinator and Director, National Pesticide Telecommunications Network, Ag Chemistry Extension, Oregon State University, 333 Weniger, Corvallis, OR 97331-6502

Have you ever wanted a source of objective pesticide information or a place to refer your clients? Have you ever wondered or been asked the following questions: Is it dangerous to use pesticides for insect control if I am pregnant or have small children? What is the persistence of the chemicals used on my lawn for weed control? Will they contaminate my well? Could this old bottle of liquid I found in the garage be a pesticide? If you have had these questions and longed for a place to call, the National Pesticide Telecommunications Network (NPTN) may be a useful source for you!

NPTN is a toll-free information service—available to any caller in the United States, Puerto Rico, and the Virgin Islands—sponsored cooperatively by Oregon State University and the U.S. Environmental Protection Agency. NPTN provides objective, science-based information about a wide variety of pesticide-related subjects including: pesticide products, pesticide poisonings, toxicology, and environmental chemistry.

NPTN is open to questions from the public and professionals. It is staffed by highly qualified and trained pesticide specialists who have the toxicology and environmental chemistry training needed to provide knowledgeable answers to questions about pesticides. Pesticide specialists can help callers interpret and understand toxicology and environmental chemistry information about pesticides.

NPTN receives more than 2000 calls per month. Most callers are homeowners concerned about their family's health when pesticides are being used in and around their home (e.g. for control of ants, termites, fleas, or garden and lawn pests). NPTN can provide information on the pesticides used in these situations and methods to reduce exposure. While NPTN does not make recommendations about which pesticide to use for control of pests, NPTN can direct callers to local resources for products available in their area.

If people call with pesticide emergencies, NPTN can connect them directly with the Oregon Poison Control Center or the National Animal Poison Control Center. NPTN can also direct callers for pesticide incident investigations, safety practices, clean-up and disposal, and laboratory analyses.

NPTN uses a variety of information sources such as EPA documents, USDA Cooperative Extension publications, the scientific literature, and a pesticide product database. Information is available at no-cost over the phone and non-copyrighted materials can be mailed or faxed for a nominal fee. Information is also available through the NPTN World Wide Web site at: <http://ace.orst.edu/info/nptn/>

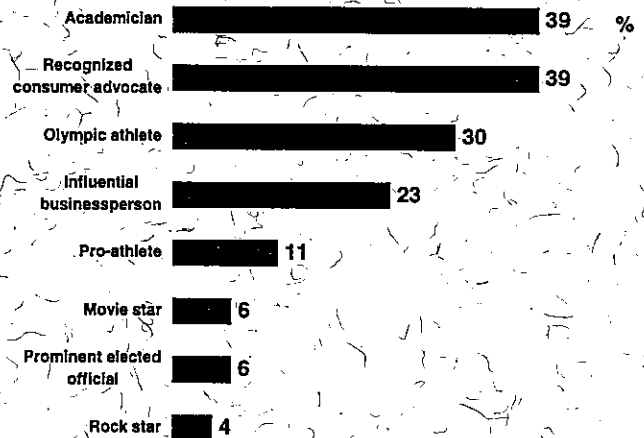
NPTN can be reached 6:30 a.m. to 4:30 p.m. Pacific Time, Monday through Friday, excluding holidays. Saturday and Sunday service will begin in Spring 1997. Telephone: 1-800-858-7378, FAX: 1-541-737-0761. E-mail: nptn@ace.orst.edu.

WHO DOES THE PUBLIC TRUST?

Source: Porter/Novelli Credibility Survey, 1996, as reported in *Stages*, Winter 1997, p. 25, *Fidelity Investments*.

Americans appear to have less faith in government than ever before, and their faith in other institutions considered worthy of respect is equally shaky. In a poll of approximately 1,100 Americans, the believability of various types of spokespersons were rated as reported in the following chart.

Believability of Types of Spokespersons (Percent Receiving Scores of 4 or 5 on a 1 - 5 Scale in which 5 is "Very Believable")



GIANT WHITEFLY PEST STATUS AND CONTROL

Source: *The following text is taken from a special insert that recently appeared with six-color photographs in the trade journal, Pacific Coast Nurserymen. Inquiries concerning additional copies of the original color brochure or the content of the text should be addressed to John Kabashima, (714) 733-3970, e-mail: jnk-abashima@ucdavis.edu.*

BACKGROUND

The giant whitefly, *Aleurodictus dugesii* Cockerell, is native to Mexico. It was first discovered in San Diego County, California in October 1992. It is now found in Southern California, parts of Arizona, Louisiana, Texas, and Florida.

Since the introduction of giant whitefly into southern California, it has spread rapidly northward along the coast and has been found on an ever-increasing number of host plant species (see Table of Host Plants).

PEST DAMAGE

Giant whitefly is causing serious damage to many

ornamental plant species found in nurseries, landscape gardens, and home gardens. The plant species most affected by the giant whitefly are hibiscus, giant bird of paradise, orchid tree, banana, mulberry, xylosma, and aralia. Certain varieties of citrus and avocado are also being affected. At the current high pest levels, the list of host plants (see table) is likely to grow.

Whiteflies cause two types of damage to plants. The first is direct damage. Direct damage is caused by the loss of plant sap. Both nymphal and adult whiteflies feed by inserting their needle-like mouth parts into the vascular tissues or phloem of the leaves and suck out the plant sap. If the numbers of whiteflies per leaf are great enough, the plant will suffer from lack of water and nutrients, resulting in a weakened plant, loss of leaves, and possibly plant death.

The second kind of damage caused by whiteflies is indirect damage. During the feeding process whiteflies excrete a sticky, sugary solution called honeydew. This sticky honeydew accumulates on the leaves and fosters the growth of a black-sooty mold fungus. This sooty mold is not only unsightly but reduces the photosynthetic abilities of the leaves.

PEST BIOLOGY

Whiteflies, like many insects, have immature and adult stages. The immature are called nymphs. Whitefly nymphs have small oval bodies with no wings and no apparent legs or antennae. The adults that emerge from mature nymphs are winged and look like a very tiny moth. Both immature and adult stages occur on the undersides of leaves where they spend their entire life cycle.

Giant whitefly gets its name from its large size (adults up to 3/16 in. (4 mm)) relative to many other whitefly species in North America. This species can also be identified by spirals of wax which are deposited by adults as they walk on leaves. These deposits occur on both upper and lower leaf surfaces. Eggs are often laid amongst these waxy deposits. The nymphs produce long,

hair-like filaments of wax up to 2 in (50 mm) long. This imparts a bearded appearance to affected leaves.

Giant whiteflies exhibit a strong tendency to feed in groups. After adults emerge from their pupal case, they remain on the leaf they emerged from and settle to feed and lay eggs. They will often remain on these leaves clustered together, in large numbers, until death. Even if a leaf itself is dying and falling off the plant, many adult whiteflies will remain with the dying leaf, thus perishing with the leaf.

SANITATION AND CONTROL

The tendency of giant whitefly adults to remain on the leaf where they developed leads to a strongly clustered distribution. This clustering behavior allows the destruction of large numbers of whiteflies with the removal of relatively few leaves. Leaf removal is most effective when populations are restricted to a few plants or leaves. Thus, monitoring to detect early infestations is extremely important in control of giant whitefly. Once the affected leaves or plants have been removed, the removed material should be placed in plastic bags and the bags should be removed from the property. If the infested leaves are left in the open after removal, a portion of the adult whitefly population may migrate to new plants.

A second sanitation strategy is the use of a strong stream of water directed to the undersides of infested leaves (syringing). In University of California studies, side-by-side comparisons with several pesticides indicated that syringing performed as well or better than chemical treatments. With high whitefly populations, syringing is recommended at least once a week. As populations decrease, intervals can be lengthened to once every two or three weeks during warmer weather. Additional advantages of syringing include improved plant appearance. Moreover, water syringing will not have the negative impact on biological control programs that are caused by pesticides.

Leaf removal will work better on some plants than others. Giant whitefly is currently found on many different plant species, and on some of these it reproduces more successfully than on others. On less preferred hosts, such as yellow or white hibiscus, removal of leaves should be sufficient to control populations. On more preferred host plants, such as red hibiscus, giant bird of paradise, and xylosma, control will require early detection, rigorous sanitation, and syringing.

BIOLOGICAL CONTROL

Natural Enemies

Very few native natural enemies have been found in California attacking giant whitefly. One native ladybird beetle, *Delphastus catalinae*, is sometimes found with colonies of the whitefly. This beetle seems to have very little impact on the populations. No native parasitoids have been found attacking this whitefly.

Natural enemies of the related spiraling whitefly were tested against giant whitefly, but did not reproduce successfully on giant whitefly in quarantine.

Biological Control Program at UC Riverside

A research program at UC Riverside has been developed to seek new natural enemies of this whitefly from its native home. An exploration trip to Mexico was conducted to obtain natural enemies. The exploration was initiated in Guadalajara because of its extensive ornamental plantings and good ecological match to southern California. The whitefly was rare, and apparently under excellent natural control. Collections showed that 80% of the whitefly nymphs were parasitized by two different species of natural enemy. One is *Idioporus affinis* LaSalle & Polaszek (Pteromalidae). The other is *Encarsijella noyesii* Hayat (Aphelinidae). The adults of these parasites are ca. 1/16 in. (1.5 mm) long. Both of these parasitoids lay eggs directly into whitefly nymphs. These natural enemies were brought to the quarantine facilities at UCR. Separate colonies have been started for each new parasitoid. The first field releases of these wasps were made in August 1997. These releases will

be monitored for establishment and effectiveness, and the natural enemies that prove effective will be distributed throughout the infested region.

ACKNOWLEDGMENTS

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PARTIAL HOST PLANT LIST FOR GIANT WHITEFLY

<i>Acacia longifolia</i>	Lantana
<i>Acacia saligna</i>	Liquidambar
<i>Aralia</i>	Mandevilla
Avocado	<i>Morus alba</i>
Bamboo	<i>Murraya paniculata</i>
<i>Bauhinia galpinni</i>	Musa
<i>Begonia</i>	<i>Myoporum</i>
<i>Bischofia javanica</i>	Nandina
<i>Bombax</i> sp.	Nasturtium
<i>Bougainvillea variegata</i>	Orchids
Boxwood	<i>Osteospermum</i>
<i>Brachychiton</i> spp.	<i>Passiflora</i> sp. (passion flower)
<i>Buxus japonica</i> (Boxwood)	<i>Pelargonium</i> sp. (geranium)
<i>Calliandra</i>	<i>Philodendron</i> sp.
<i>Canna</i> spp.	<i>Pittosporum undulatum</i>
Castor Bean	<i>Plectranthus</i> sp.
<i>Citrus</i> spp.	<i>Plumeria</i> sp.
<i>Colocasia</i> (elephant ear, taro)	Poinsettia
<i>Cyperus papyrus</i> (papyrus)	<i>Schefflera</i> sp.
<i>Erythrina</i> sp.	<i>Schinus terebinthifolius</i>
<i>Eucalyptus</i> sp.	<i>Solandra</i> spp.
<i>Eugenia</i> sp.	<i>Solanum</i> sp.
<i>Ficus</i> spp.	<i>Strelitzia nicolai</i>
Fuchsia	<i>Strelitzia reginae</i>
Ginger	Taro
Gladiolus	<i>Tupidanthus</i> sp.
<i>Hedera helix</i>	<i>Vitex lucens</i>
<i>Heliconia</i> sp.	Water lily
<i>Hibiscus</i> sp.	Willow
<i>Hoya</i> sp.	<i>Xylosma compacta</i>
Kentia Palm	

AUTHORS

Thomas S. Bellows, David Headrick, Carol Meisenbacher, Department of Entomology, University of California, Riverside, CA 92521

John Kabashima, UC Cooperative Extension, Orange/Los Angeles Counties
Karen Robb, UC Cooperative Extension, San Diego County

UPCOMING EVENTS

The Landscape Below Ground II Conference

The Second International Conference on Tree Root Development in Urban Soils will be held March 5 - 6, 1998, in San Francisco, CA, at the Palace of Fine Arts Theatre. At this conference over 20 experts from around the world will be speaking on a variety of subjects pertaining to the half of the landscape that cannot easily be seen or studied. The first Landscape Below Ground was a tremendous success. The second promises to be even better. The proceedings will again be published by the International Society of Arboriculture (ISA) and is expected to be available in late 1998.

Program and registration information can be obtained from the ISA Western Chapter office, phone and fax (916) 649-8487.

Best of the West Summit: Urban and Community Forestry Conference

The Steering Committee of the Best of the West Summit invites you to submit a proposal to present your "story" at the regional conference (*The Best of the West Summit: Common Challenges and Shared Solutions in Urban and Community Forestry*). This conference will be held September 16 - 18, 1998 at the Presidio's Golden Gate Club in San Francisco, CA.

The goal of the conference is to bring together leaders from across the Western states to address prominent issues impacting urban and community forestry. Central to the program will be the presentation of several "success stories" that exemplify leadership, innovation, and practical solutions in response to serious urban forestry challenges. By sharing your success story you will help to broaden the agenda of urban forestry, becoming an important player in our search for shared solutions. We are looking for success stories that either have broad application to the

Western region, or exemplify unique problem solving, partnerships, and innovation in a particular state.

Potential topics of interest include (but are not limited to):

- Using trained volunteers to assist researchers in the documentation or monitoring of tree problems (e.g. disease, invasion of exotics, root problems, infrastructure conflicts);
- Groups that have worked closely with government officials to implement change in their city's/ region's urban forest (e.g. state-wide legislation, tree ordinances, funding opportunities);
- Native American and environmental justice groups working with local people to plant trees in a barren landscape to promote healing, unity, and shared decision making;
- Urban forestry programs that work with citizen foresters to curb the effects of urbanization on the region;
- Youth groups working to reforest a local habitat area.

Selection Criteria

The conference program subcommittee will select presentations that demonstrate success and innovation. Although we hesitate to limit our criteria, we will be looking for solutions that:

- Cross traditional boundaries (e.g. site, neighborhood, city, region);
- Are multi-disciplinary in scope;
- Have wide-reaching impacts (e.g. health, habitat, social/economic well being);
- Integrate conflicting or competing needs (e.g. recreation, biodiversity, development); and
- Have long term impacts on sustainability (e.g. resource conservation, job training, and restoration).

We are requesting proposals for success stories that provide information on how to make your success work in other locations. Your presentation should be as interactive as possible—we encourage you to think creatively, and to explore

options other than the traditional lecture/slide format.

Reimbursement and Recognition for Success Story Presenters

All success story groups will receive a \$250 stipend to help cover the cost of travel. In addition, presenters will have an opportunity to interact with a number of different groups, individuals and leaders in urban forestry as we all work together to help set the agenda for urban forestry in the West. Program exposure, discussion of new techniques, and networking opportunities are among the many benefits success story groups/presenters will receive.

Review and Notification Timeline

Proposals postmarked by January 9, 1998
Notification of selection February 15, 1998
or rejection

Instructions for Submitting Your Proposal

Please include in your proposal:

- Success Story title, organization name, contact person, address, phone, fax, and e-mail.
- Abstract of your story (500 words minimum)—a final manuscript for the proceedings will be due one month prior to the Summit.
- How your success story fits into the above "selection criteria."
- A brief explanation of what sets your project apart.
- Format of presentation (e.g. video, panel, lecture, group activities, and slides).

Send your proposal by November 14, 1997 to:

Martha Ozonoff, Summit Coordinator
Western Center for Urban Forest Research
& Education
c/o Department of Environmental Horticulture
University of California
Davis, CA 95616
Phone (916) 752-5897
Fax (916) 752-6634



Victor A. Gibeault
Extension Environmental Horticulturist
Department of Botany and Plant Sciences
University of California, Riverside



Dennis R. Pittenger
Area Environmental Horticulturist
Southern Region and Los Angeles County
University of California

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