Report on Mosquito Trapping Devices

By Roxanne Rutledge, Ph.D.

As people spend more time outdoors and send kids off camping and swimming, they become more aware of mosquitoes. Along with awareness, people become concerned about how to best protect themselves from mosquito bites.

Currently, the public is inundated with advertisements for several devices that promise to reduce or eliminate mosquito populations. One model generates carbon dioxide (CO₂) that acts to lure the mosquitoes to the device, and then another part of the device collects them into a bag, where they will die. Several spin-offs of this model use other “attractants” such as octenol (another chemical attractant for biting insects), to lure the mosquitoes into the trap. These have recently appeared on the market targeting homeowners. These devices retail for $300 - $1400 for the initial investment. At 21-30 day intervals, the fuel that generates the CO₂ and the octenol must be replaced at the buyers’ expense.

Florida County Cooperative Extension offices are likely to receive phone calls from clientele with questions about the efficacy of these products. Do the devices work? Should they buy one?

Currently, there are no published scientific studies to support the claims from the manufacturers of these products. The CO₂-baited traps will, indeed, catch

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COORDINATOR’S CORNER

Dear Master Gardener,

2002 has again been a very busy year for the Master Gardener Program, between conferences and other volunteer activities. The Florida Master Gardener Program continues to assist more people each year. 2003 has quite a few opportunities available including the Florida School Garden Competition, the 10th Annual Epcot International Flower & Garden Festival, the 2003 International Master Gardener Conference in Northern Kentucky and the 2003 Florida Master Gardener Continued Training Conference in Gainesville. Contact your agent for more information about these opportunities.

The New Year also brings the opportunity to partner with other organizations. Plantadvice.com is a website where Plant Enthusiasts, Interiorscrapers, Home Hobbyists and Master Gardeners can access the environmentally friendly plant nutritional products used successfully by professional plant growers. They want to provide some funding for the Master Gardener program by giving the program a portion of the sales from Florida Master Gardeners. Just make sure to enter the promotional code MGFL and a portion of your sale will come back to our program. Visit www.plantadvice.com to check out their line of products.

Keep up the Great Work!!!!

Co-edited by:
Laura Alexander
Genie Cawley
Bart Schutzman

Master Gardner Professorship
Goal $100,000

$90,000
$80,000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000

Tom Wichman

http://hort.ufl.edu
MASTER GARDENER GROW CULTURE OF SERVICE

By Alcestis “Cooky” Oberg

When a husband and wife bought land for their dream house near Crawford, Texas, they wanted to preserve its serene natural landscape. So before turning her husband loose with a chainsaw, the wife called a friend, a master gardener, to identify the important native plants that should be saved, such as native pecan trees, and suggest what should be planted, such as a lawn of drought-resistant native buffalo grass.

This Texas couple — George W. and Laura Bush — are among the legions of American homeowners who call on master gardeners every year for their free assistance. Nationwide, more than 60,000 volunteer master gardeners answer millions of gardening questions annually. In Texas alone, more than 4,000 volunteers provided nearly 220,000 hours of community service in the year 2000. They answered phones, published more than 1,000 articles, aired hundreds of television and radio garden shows, worked on hundreds of community beautification projects and carried out education programs in 1,700 schools.

President Bush, like his predecessors, has exhorted Americans to give back to their communities by volunteering. His newest initiative, the USA Freedom Corps, urges Americans to contribute 4,000 hours to volunteer service during their lifetimes. He calls it a “new culture of responsibility.”

Too many organizations, however, fail to recruit or retain volunteers because they don’t have clear tasks for them, don’t train them or give them needed resources, or don’t treat them well. In this respect, the master gardener program can serve as a unique model — a formula for not only growing a volunteer population, but also for building and expanding on volunteers’ talents.

Seeds in Seattle

The master gardener program started in 1972, when area agent David Gibby was assigned the job of answering homeowner gardening questions for two counties around Seattle. Gibby begged for an assistant to help him, but there was no budget for that. So Gibby recruited 300 experienced gardeners and brought in horticulture professors to teach their specialties. After graduation, the newly certified master gardeners answered 5,000 questions that season alone. When the media spread word of the program, Gibby and his colleagues were flooded by calls from other counties in Washington, then Oregon and ultimately, all of the other states.

Grassroots Programs Flourish

The key to the program’s success has to do with its sustained grassroots nature. It has always been neighbor helping neighbor. There is no federal mandate or budget and no national bureaucracy. Training is funded primarily through states or counties.

Instructors are horticulture professors at land-grant state universities. One state coordinator oversees the program, and county extension agents do all of the local recruiting, management and scheduling, sometimes with a master gardener’s help. Volunteers pay for their own books.

Recruitment is never a problem. Gardening is a top national pastime, and volunteers are eager to pass their knowledge on to others.

The key to the growth of the program is its flexibility. At first, master gardeners just answered questions on the phone or held clinics. But as the groups grew, some developed school programs and community beautification projects. Others set up gardens for nursing homes. As the Internet grew, the technically talented ones developed local gardening Web pages, giving homeowners instant, round-the-clock information. As horticultural science grew to understand homeowners’ role in larger environmental issues, professionally trained master gardeners helped their neighbors with water conservation, recycling and the cautious use of chemicals.

Master gardeners are certified only after completing their volunteer hours and are forbidden to use the affiliation for commercial gain. To maintain certification, a volunteer must attend continuing education activities every year.

At a time when volunteerism, conservation and the environment are top priorities for so many Americans, the master gardener program is a perfect model for other organizations to follow.

Alcestis “Cooky” Oberg, a Houston freelance science and technology writer, is a member of USA TODAY’s board of contributors.

DEET REPELLENT

The repellent DEET (N, N-diethyl-3-methylbenzamide) provides greater protection against biting and stinging insects and ticks than herbal oils, according to a study in the July 4th issue of the New England Journal of Medicine.

University of Florida researchers tested 17 repellents on volunteers and found DEET, marketed since the 1950’s, to be the best choice for reliable protection from mosquito- or tick-borne infections such as West Nile virus, malaria or Lyme disease. Access the abstract at: http://content.nejm.org (CropLife America Spotlight, 7/12/02)

Chemically Speaking, August 2002

http://hort.ufl.edu
CRACKED POTS

By Sonya Robinson

A water bearer in India had two large pots, each hung on the ends of a pole which he carried across his neck. One of the pots had a crack in it, while the other pot was perfect and always delivered a full portion of water. At the end of the long walk from the stream to the house, the cracked pot arrived only half full. For a full two years this went on daily, the bearer delivering only one and a half pots full of water to his house. Of course, the perfect pot was proud of its accomplishments, perfect for which it was made. But the poor cracked pot was ashamed of its own imperfection, and miserable that it was able to accomplish only half of what it had been made to do. After two years of what it perceived to be a bitter failure, it spoke to the water bearer one day by the stream. “I am ashamed of myself, and I want to apologize to you. I have been able to deliver only half my load because this crack in my side causes water to leak out all the way back to your house. Because of my flaws, you have to do all of this work, and you don’t get full value from your efforts,” the pot said. The bearer said to the pot, “Did you notice that there were flowers only on your side of the path, but not on the other pot’s side? That’s because I have always known about your flaw, and I planted flower seeds on your side of the path, and every day while we walk back, you’ve watered them. For two years I have been able to pick these beautiful flowers to decorate the table. Without you being just the way you are, there would not be this beauty to grace the house.”

Moral: Each of us has our own unique flaws. We’re all cracked pots. But it’s the cracks and flaws we each have that make our lives together so very interesting and rewarding. You’ve just got to take each person for what they are, and look for the good in them. Blessed are the flexible, for they shall not be bent out of shape. Remember to appreciate all the different people in your life!

Earthworm Volume 7, Issue 4

A ROBOT THAT THRIVES ON SLUGS

By Michelle Green

For centuries, the humble slug has eaten its way through the world’s vegetable patches, frustrating farmers and gardeners alike, but thanks to British scientists the great plant muncher is about to be munched.

Scientists at Britain’s University of West England have developed the “SlugBot”, a prototype robot capable of hunting down more than 100 slugs an hour.

It operates after dark when slugs are most active and uses their rotting bodies to generate the electricity it needs to power itself.

The SlugBot is the brainchild of engineers at the University’s Intelligent Autonomous Systems Laboratory who wanted to build the world’s first fully autonomous robot.

“Slugs were chosen because they are a major pest, are reasonably plentiful, have no hard shell or skeleton, and are reasonably large,” Dr. Ian Kelly, SlugBot’s creator, said in a statement.

The two-foot-high machine uses an image sensor that beams out red light to pinpoint the slugs, which emit a different infrared wavelength from worms and snails. It then uses a carbon fiber arm with a three-fingered claw grabber to pick up the slugs and store them in a tank.

After a hard night of slug busting, the robot returns home and unloads its victims into a fermentation tank. While the SlugBot recharges, the fermentation tank turns the slug sludge into electricity.

But the robot, voted one of the best inventions of the year by Time magazine, has attracted some criticism. One Time reader called the invention “reckless” in a letter to the magazine. “To create robots that devour flesh is to step over a line that we would be insane to cross,” he said.

Gardeners were more welcoming. Adam Pasco, editor of the BBC Gardener’s World magazine, told the Daily Mail: “Anything that would prove a fool-proof method of destroying slugs would be fantastic.”

A spokeswoman for the university told Reuters on Wednesday there were no plans to release the SlugBot on the commercial market. “It was a proof of the concept machine only,” she said.

The news will disappoint Britain’s farmers who spend an average 20 million pounds a year trying to eradicate the slimy creatures.

Reuters December 12, 2001

http://hort.ufl.edu
“LUCKY BAMBOO” - *DRACAENA SANDERIANA*

By Gary Antosh

Numerous questions have come in concerning this novelty plant. There isn’t much on the net dealing directly with the care of this plant... but there is more than you may think.

First of all our eBook “Success with your Dracaena Indoors” covers Dracaena care, which is all you need to care for this plant. You just need to read between the lines.

First of all the name “Lucky Bamboo” is a little confusing. The plant really is a Dracaena, not a bamboo, and specifically it’s *Dracaena sanderiana*.

The “Lucky Bamboo” is marketed and “grown” basically as a hydroponic plant, in a decorative container with rock, marbles or polished stones to keep the plant upright and water in the bottom... no soil. You can order three 12-inch “Lucky Bamboo” canes for about $12.00.

*Dracaena sanderiana* is not a large plant like *Dracaena massangeana* - the corn plant. The canes are harvested and cut into much smaller lengths, just as many Dracaenas are. The tops are waxed off to help stop the entry of fungus or rot.

The plants or canes are then grouped together creating some unique looks. The “Lucky Bamboo” sort-of combines the production methods of *Dracaena massangeana* and the flexibility of *Dracaena marginata*... it’s all in the eBook.

So what can you do, or what should you be aware of in caring for your *Dracaena sanderiana* - “Lucky Bamboo”?

Right off, we know that many Dracaenas can have fluoride problems, and where does most of the fluoride problems come from? Our water... use good clean pure water, try to stay away from tap water. If you’re going to use tap water, let it sit out over night to allow the chlorine to evaporate. This won’t remove the fluoride, but the chlorine can also damage the plants.

Most of the sources recommend changing the water every three to seven days, so you can see good water is important for these plants to do well.

Next, we know that high salts can burn the leaves of Dracaenas. Most of our salt build-ups come from adding fertilizer to the water. You’ll also find salts in your city water. Stay away from fertilizing these plants all together.

Again, you see the importance of a good clean water source.

From all my growing experience and observations, the “Lucky Bamboo” would probably do best in good lighting, but not direct sun. Remember, it’s a novelty plant, not a six foot specimen, and doesn’t have the same demands.

What about when the plant grows too much and you want to take a cutting or cut the cane? Handle cuttings the same way you’re currently growing your “Lucky Bamboo.” Place the new cutting in a small pot with some rock and keep it moist until roots appear.

There are claims that the “Lucky Bamboo” can live for years and I don’t doubt it. Just about any plant can be enjoyed for years with proper care.

In case you’re wondering if “Lucky Bamboo” is much different from the more familiar and commercially grown Dracaenas, other than being a different variety and grown or presented in an unusual way... NO. Consider the canes of “Lucky Tree Logs” (*Dracaena massangeana*) which are marketed in a similar fashion; they are really no different. Most Dracaenas can be produced this same way. Size is the real issue.

All the information you need to grow “Lucky Bamboo” is in “Success with your Dracaena Indoors.” You just need to read between the lines and apply the growing knowledge.

Try your hand at growing a “Lucky Bamboo” cane by ordering one online.

plant-care.com

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The 2003 International Master Gardener Conference will be hosted by Ohio and Kentucky June 18th to June 21st at the Northern Kentucky Convention Center. Check out their website for a complete listing of Keynote Speakers, Conference Tours, and Workshops available: http://mastergardener.osu.edu/imgc2003
THE DIRT DIGGING MOLES

The Dirt Digging Moles, a Junior Master Gardener group in Seffner, Florida, spent their summer working on a project that would allow them to give back to the community.

The Moles, a summer group made up of kids involved with the Hillsborough County Recreation Center, spent nine weeks building a grape arbor and butterfly garden.

The 22 third through sixth graders met once a week at the recreation center to learn about gardening and insects and to work on building the arbor and planting the butterfly garden.

Master Gardener Cindy Paulhus led the Moles for the second year in a row. She said the program has really caught on at the recreation center. “The kids had a lot of fun doing [the JMG program],” Paulhus said.

Paulhus said that the community’s support of the program was wonderful. “Through the combined efforts of a local nursery man, the parks maintenance people, several parents and a grant from Tampa Bay Estuary program, we were able to accomplish our goal,” Paulhus said.

Paulhus said that the local nursery provided all of the plants and the Parks and Recreation Center donated all of the wood for the arbor. The Tampa Bay Estuary Grant was a $5,000 grant given to all 11 Hillsborough county JMG groups to be used for the their programs.

JMG News, October 2002

A LETTER FROM THE DEAN

First of all, I wanted to once again thank the Master Gardener Committee that presented the first Master Gardener Extension Professorship Award to Beth Bolles during the Master Gardener Conference. I thought that they did a beautiful job of articulating the importance of the Master Gardener program. To quote from their presentation:

“It’s hard to imagine a time when extension did business without the help of dedicated Master Gardeners. These programs reach millions of Floridians annually. People, young and old, benefit from the timely and practical application of the latest research results in environmental horticulture and other key areas. Extension faculty must continually update their experiences and methods for program delivery. New incentives and support are needed to help maintain faculty enthusiasm and commitment for quality programs to meet that current need. The Master Gardener Extension Professorship is designed to encourage continued success and innovation of the Florida Master Gardener program. The Master Gardener program is a faculty recognition program named in honor of the Florida Master Gardeners. It bestows an honorary title for an outstanding extension faculty member contributing to the Master Gardener program and recognizes and rewards outstanding faculty that work with the Master Gardener program through an annual financial and program award.”

I don’t think I could have said it any better than that committee said it at the Master Gardener Conference. I would strongly urge those counties who have heretofore not participated to begin participating and I would strongly urge the counties that are not Friends or a Patron to try to reach these levels. In this way, we can give the reward and recognition to our committed extension professionals who work with the Master Gardener program the reward and recognition that they so richly deserve.

I have three good pieces of news to share with you. First, that we raised $989 toward the Master Gardener Professorship with the auctioning of the quilt. Secondly, we have had Alachua County make their first donation to the Master Gardener Professorship program. I’m so pleased to have Alachua County join our efforts. And third, we have another county that has indicated that they’re going to be sending in a check for the Master Gardener Professorship after the first of the year that is fairly substantial. I also had several individuals that approached me with several great ideas for raising additional money for the Master Gardener program that were new, innovative and exciting. I hope that some of their proposed projects will come to pass.

I do want to indicate that there will be a matching funds program for counties that have dollars to contribute. So far, IFAS has $2,500 here on campus that we will use to provide matches to counties that bring in additional dollars before the end of December. I am pleased to let you know that $1,000 of the match is being provided by Dr. Terril Nell, the department chair of Environmental Horticulture. So, I want to urge you to get your donations in so you can take advantage of the match, which will then count toward your county donation. We successfully raised about $6,000 from this matching program last year. Again, thank you for all that you do for us and thank you for your commitment and enthusiasm for this project.

Sincerely yours,

Christine T. Waddill

http://hort.ufl.edu
mosquitoes - a bag full every night in some locations, but can they “decimate a population of mosquitoes” as the advertisements claim? Reduce West Nile virus transmission to humans? Control mosquitoes in an entire acre? Researchers at IFAS/FMEL will be working with local homeowners to study the devices this summer.

For now, I offer the following for you to consider and pass along to your clientele to assist them in making an educated decision about spending money on these products.

- Female mosquitoes are indeed attracted to carbon dioxide (CO₂). This is the cue they follow to find a “host” (blood meal). Entomologists have been using CO₂ as “bait” for years to attract mosquitoes for research purposes. Evaporating dry ice is an excellent mosquito lure. The devices that are on the market take advantage of this known aspect of mosquito behavior and they will capture mosquitoes. When a citizen sees a half-gallon collection bag that is full of mosquitoes, the perception is that the device “works great.” Salt-marsh mosquitoes emerge as adults by the millions. One impressively large collection, a bagful, is a minute percentage of all the host-seeking females and will not likely impact these very large populations.

- There are 77 different species of mosquitoes in Florida. Each species varies in what host they bite, the time of day they feed, and how far they can fly. Not all of the mosquitoes that bite humans are attracted to these traps. An important example of this is Aedes albopictus, the “Asian Tiger Mosquito,” that spends its immature stages in tires, vases, bowls, and other water-holding devices that may be found around the yard. This species is a primary biting pest for homeowners, and one that most citizens in Florida will encounter. This species is not attracted to these advertised traps. The best recommendation for reducing this species is to dump out the water every three to four days or remove the container.

- Advertisements claim that the trap will decimate a mosquito population in four to six weeks. The life span of an adult mosquito varies with species and temperature, but populations of many mosquitoes that are the target of these devices will often begin to decline naturally within a few weeks if left alone, particularly if rainfall is intermittent and sooner if mosquito control is conducted in the area. There is no evidence that these traps can play a noticeable role in the decline of mosquito populations.

Taxpayers who live within a mosquito control district in Florida pay considerably less per year for mosquito control than they would pay for the initial investment and continued attractant supply and maintenance of these traps. For example, in Indian River County, the owner of a home valued at $100,000 would pay about $20 per year for mosquito control.

There may be certain circumstances where the mosquito trapping devices can indeed reduce mosquito-biting activity in a small area for a specific time period. Several factors would have to be optimal for this to be true:

- There should be little wind to disrupt the attractive CO₂ cloud
- The mosquito numbers are manageable to begin with.
- The attractant plume is more substantial than large numbers of people.

As with other such products, the “buyer beware” attitude is still good advice. The only available “results” of how well these devices work are testimonials from those who have purchased them. Such testimonials do not incorporate controlled studies or proper data analysis. Buyer beware. The scientific results of our testing will be communicated to you as soon as they are available. Right now, though, I encourage you to help your clientele make educated decisions concerning these devices.

2002 AWARDS OF EXCELLENCE

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We finally had our first cool day of the fall season here in Gainesville and, after almost a six-month spell of hot and humid weather, it was a refreshing surprise. It seemed to invigorate almost everyone in the Environmental Horticulture Department here at UF to get out and take a walk. After hearing the weather report that the 60 degree temperatures were here for two to three days, I decided that I could not resist taking some annual leave to stay at home and work in my own Florida yard. I spent two relaxing days pretending to weed, mulch and do other yard chores. I really spent more time reflecting on the FYN program and the progress that it had been making this year than doing yardwork. I know this to be true, because my children, sensing my distracted air, took full advantage and planted dandelions (rescued from the lawnmower from another part of the yard) alongside my roses. Not that I mind dandelions, I think they are quite attractive and herbally useful, but next to the roses was not the “Right Plant for the Right Place.” Obviously, I had not worked as hard to teach this concept to my own children and I was amazed that they had not previously learned it by osmosis. After all, I am the FYN state coordinator, aren’t I? Don’t people just blindly accept the nine Basic FYN principles merely on our good word? Herein lies the rub for all of us working in the FYN program; most people have to be convinced of its benefits before they are willing to make major changes in their lawn care practices. If they perceive it as too much work, money or hassle, they are even less likely to make changes, no matter how much water it will save or how much it will reduce nitrates and phosphates in a local water body.

In the FYN program, our job is not only to educate people about the right choices to make based upon research and recommended BMPs, but we also have to convince them that it is the right thing to do. Depending upon the audience that we are speaking to, we need to modify our presentation and demeanor to best fit that particular audience. FYN does not believe in the “one size fits all” concept. Each group of stakeholders has their own agenda and reasons for implementing or not implementing the nine principles of the FYN program. Our facts are still factual and they are based upon university research and the best judgment of our scientists, but stakeholders also need to know how this will benefit them in the short and long run. What we need to decipher beforehand is: what is the angle that we will need to take with this particular stakeholder? We do this by understanding what motivates that particular stakeholder and what is their interest in gardening and landscaping. It is up to us to show them how implementing the principles of an environmentally friendly landscape will change the impact that their lawn or landscape currently demonstrates.

In most of our FYN documentation, we list various groups of stakeholders that play an integral role in our educational programming. A few of these groups are homeowners, landscape professionals, builders & developers, government officials, youth, etc. Each group has to be analyzed individually in order to determine the most effective approach for our educational programming. For example, a landscape professional will be motivated more by a cost-benefit rationale than by the idea that a Florida yard will reduce non-point-source pollution. This last concept is a little abstract and it is difficult to rationalize how this will or will not impact their landscaping business. This approach will not result in behavioral change with regard to their current landscaping practices because we did not illustrate to them how it could benefit them. Their bottom line is usually “how will this help me save or make more money?” They are, after all, business people who are trying to make a living. Knowing this, we educators need to be able to adjust our educational material and presentation techniques so that we are telling the landscape professional what he/she needs to hear (in terms of techniques and practices) but in a way that would illustrate how it can positively impact her/his business. This may sound simple enough, but it is a concept that is difficult to accept for some educators because they have been trained to impart knowledge (teach), and not necessarily to promote behavioral change in their clientele. But that is exactly what our mission in the FYN program is; to achieve a level of behavioral changes in clientele landscaping and maintenance practices that will positively affect our environment and reduce the amount of contamination and pollution in our natural resources. Can you think of other stakeholder groups that we currently work with and what our educational approach for them should be? Each one will be different, and we must keep that in mind when we are preparing to introduce the FYN program to new participants. I hope that you find that this column has prompted you to think a little bit about the FYN educational program and your role as an FYN educator. Have a great holiday season!

Christine Kelly-Begazo
Florida Yards and Neighborhoods
State Coordinator
ckelley@mail.ifas.ufl.edu

Florida Yards & Neighborhoods
University of Florida Extension
Institute of Food and Agricultural Sciences

http://hort.ufl.edu
Here are some interesting things happening in the months of January and February:

January:
- Male cardinals begin territorial singing later in the month.
- Roseate spoonbill nesting activity is in full swing in Florida Bay.
- Other nesting activity can be seen by ospreys, sandhill cranes, hawks, and owls.
- Look for red-tailed hawks perched in trees along highways.
- Huge clouds of tree swallows should be visible around sunset roosting over large marsh areas.
- Don’t forget, now is a great time to watch our over-wintering populations of ducks and geese.
- Gray foxes, bobcats, and raccoons begin breeding this month.
- Deer reach the peak of the rutting season in north Florida.

February:
- Early purple martin scouts will start to appear in Florida this month. Now is the time to raise bird houses or gourds.
- Screech owls begin nesting in the central region of the state.
- South Florida should start seeing wild turkey (the bird) and quail breeding activity.
- Ospreys will begin nesting in North Florida near the end of the month.
- Pileated Woodpeckers begin their mating season and will start announcing territories by drumming on various objects including houses and telephone poles.
- Others who are beginning their nesting season include: Little Blue and Tricolored Herons, Wood and Mottled Ducks, and Snail Kites.
- Wild Turkeys mate in South Florida.
- Swallow-Tailed Kites begin returning to Florida from South America.
- Eastern Moles are breeding this month in tunnels under our lawns.
- Pocket Gophers begin their spring breeding season.
- Look for yellow jessamine in treetops.
- Trilliums and dogtooth violets bloom in Panhandle ravines.

Source: University of Florida, Department of Wildlife Ecology and Conservation
Available at: http://www.wec.ufl.edu/extension