

WHITMIRE MICRO-GEN
PRESCRIPTION TREATMENT®

PT Quarterly

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swarming ANTS

**Understanding
Ant Swarms and
What Causes Them**

 WHITMIRE MICRO-GEN
Prescription Treatment
Making pest management more affordable

Photo Credit: Gene White

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Swarming Ants – Essential to Colony Reproduction

The timing of ant swarms, on a seasonal and diurnal/ nocturnal basis, differs among species. By Dr. Steven Sims

During the 1970s, hundreds of news stories reported on “killer bees” moving north from Central America and told of the bees imminent threat to the United States. In 1979, Hollywood producer Irwin Allen, the so-called “Master of Disaster” movies (*Airport*, *Towering Inferno*), was looking for another disaster to exploit and so he focused on “killer bees.”

Allen purchased the rights to Arthur Herzog’s novel *The Swarm* and in 1979, a movie version of “The Swarm” was produced with an all-star cast including Henry Fonda, Katherine Ross, Richard Widmark and Michael Caine as “the entomologist.”

Unfortunately, even for the genres of killer insect movies, or the specialty area of killer bee movies, this was a monumentally bad effort, i.e. it was a bee movie but not a B-movie.

Perhaps even worse, Hollywood’s treatment of swarm-

ing behavior did not adequately reflect the importance of this phenomenon in the lives of social insects. For PMPs, “the swarm” has an entirely different practical meaning. But let’s discuss the biological aspect of swarming and, to keep the topic manageable, we’ll focus on ants.

Ant Swarms

Swarming is an essential component of colony reproduction in ants. Swarming (the mass exodus of reproductive forms from the nest) represents the beginning of the “founding stage” of ant colony growth. After establishment, a colony enters an “ergonomic” or growth stage in which the number of workers increases. Eventually, surviving colonies grow to “reproductive stage” size and begin production of new queens and males.

Some ant species lack the more dramatic “nuptial flights” where winged reproductives of both sexes burst from colonies by the thousands to initiate mating activi-

ties. For example, the pharaoh and Argentine ant both exhibit “budding” in which groups of workers, along with a queen or queens, quietly leave the main colony and establish a new colony.

Nuptial flights, however, generate the most human attention (and PMP business) and are synonymous with the term “swarm” in ant biology. Hundreds or even thousands of winged males and females can be released

It turns out that weather conditions play a major role in nuptial flight timing.


from individual ant colonies within periods of less than one hour. Leaf cutter ants (*Atta* sp) and fire ants (*Solenopsis* sp) provide good examples of these large-scale flights.

Male Aggregation Syndrome

The red imported fire ant also provides a good example of a mating pattern called the “male aggregation syndrome.” In this case, winged queens and males from many colonies fly to heights of 300 to 800 feet to mate. Mated females descend to the ground, up to 12 miles away, break off their wings, and search for a place to dig the founding nest, a vertical tunnel two to five inches deep. They seal themselves off to lay eggs and rear their first brood of workers. The ability of the red imported fire ant to disperse so widely from a single mating site is a major reason why long-term red imported fire ant control is so difficult.

Weather and Nuptial Flights

What prevents unfortunate situations like a bunch of male ants milling around, enjoying some honeydew, and asking each other, “Hey, where are all the girls?” In other words, how are ants so good at synchronizing nuptial flight activity both within and between conspecific colonies? Each species that displays the “male-aggregation syndrome” swarms at a precise time during the 24-hour daily light-dark cycle with the exact time differing among species. Photoperiod “sets” a circadian rhythm of activity and behavior patterns which includes, but is not limited to, mating activity. So, the time of day that flights occur is programmed by a species-specific diel rhythm. But what factors determine the specific day on which the flights take place? It turns out that weather conditions play a major role in nuptial flight timing. The most common timing stimulus is rain. Rain is especially important for those species that occur in dry habitats such as deserts, grasslands and open fields. Rain also provides conditions (soft, moist soil and high humidity) favorable for successful nest establishment among the mated females.

The cornfield ant (*Lasius neoniger*) is a good example of rain-cued mating behavior. It is a common species in fields and open areas in eastern North America. Mating swarms of the cornfield ant occur within 24 hours or so of moderate to heavy rainfall on warm humid, low-wind days. This happens from mid-August to early September and huge numbers of winged ants can participate in these flights. 

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 Steve Sims is senior research entomologist at Whitmire Micro-Gen.


NEW EMPLOYEE

Dr. James H. Cink joins Whitmire Micro-Gen Research Laboratories, Inc.

Whitmire Micro-Gen announces the addition of Dr. Jim Cink to its Research & Development team. Dr. Cink will focus on furthering the development of Whitmire Micro-Gen’s emerging termite technologies and other new product initiatives. He will assume lead research responsibilities for continuing data development in support of our current termite products and oversee laboratory and field evaluations of new Whitmire Micro-Gen termite developments.

Dr. Cink, a graduate of Iowa State University’s Entomology Department, is a well-recognized and highly respected industry leader with more than 20

years experience in product development and market introduction. He recently served as Coordinator, Product and Technical Support for Bayer Corporation in their Environmental Science Division.

Dr. Cink’s addition represents a significant augmentation to Whitmire Micro-Gen’s research efforts and is a strong indication of the dedication to new product innovation, and long-term commitment to the area of termite control products. 



Dr. Jim Cink

Transatlantic Alliance with Sorex International

Whitmire Micro-Gen working with Sorex International, one of Europe's most respected pest control businesses.

The objective of Whitmire Micro-Gen's transatlantic alliance with Sorex International is to introduce Whitmire Micro-Gen's Prescription Treatment® brand products and support services to Europe and provide access to the U.S. market of selected Sorex technologies.

This major transatlantic alliance was announced at the September 2002 Institute of Technology in Toronto, Canada.

This partnership, and the product potential for the U.S. and European markets, is very positive. Like Whitmire Micro-Gen, Sorex International is a manufacturing and marketing specialist focused strongly on the global urban pest control market. They speak to their customers in their own language and strive to have a good understanding of the local culture.

Both Whitmire Micro-Gen and Sorex International have similar emphasis on quality, customer service, education and training. By working together, they will benefit from each other's market expertise and technological advances. This means bringing Whitmire Micro-Gen's current products and technology to an

Both Whitmire Micro-Gen and Sorex International have similar emphasis on quality, customer service, education and training.


expanded European customer base and, in turn, bringing new products and technology to an established U.S. customer base. It's a great opportunity for both companies and will allow Whitmire Micro-Gen to continue to make "pest management more profitable" for their customers.



Representatives from Whitmire Micro-Gen, Sorex International and the European pest management industry.

Sorex International may be a new name to many in the U.S., but they are well respected in Europe.

They are an international business with their main manufacturing and distribution based in England - which makes them different in their outlook and approach.

Both companies have a broad product range and are dedicated to the pest management industry. In Europe, Sorex International is synonymous with rodent control. The company pioneered the anticoagulants and invented the second-generation active substances difenacoum and brodifacoum and has more than 50 years of experience in rodenticides. To complete their package of rodent control, Sorex International markets the Roguard brand of rat and mouse boxes. Under the Network brand name, Sorex International has a wide range of bird control products and a strong interest in insect control. Sorex International places great emphasis on formulation expertise and is currently evaluating its new patented dry gel insect control technology on a wide range of pests. 



RAY BRANZ

ANGRY CUSTOMERS

Most angry customers just want to be heard, understood, respected and have their problems corrected as soon as possible. Be sure to treat the customer, not just the problem.

They call. They rant and rave. They complain. And, if they are really angry, they threaten never to do business with you again. You told them what you could do, so why don't they seem happy with your solution? The answer is simple – you offered your solution too early.

Stop for a moment and step into your customer's shoes. Although you

Stop for a moment and step into your “customer’s” shoes. Although you may be in the business of customer care, it’s easy to forget that everyone is a customer – every day.

may be in the business of customer care, it's easy to forget that everyone is a customer – everyday. We go to lunch, purchase gas, pick up dry cleaning, or buy a newspaper and sometimes we receive inadequate service.

Next, think of the last time you were angry about a problem with a product or service. Now think about it in detail. What did you want or expect from the employee “handling” your concern? Odds are you wanted more than just an answer or solution.

According to Great Connections, a customer relations firm, there are seven things most angry people want.

1. TO BE HEARD - They want you to listen to them and know why they are unhappy. No interruptions. No attempts to control the conversation. They want to vent and blow off steam.

2. UNDERSTANDING - They expect empathy and concern. This requires listening with the “third” ear. The two on your face are obvious,

but the third ear is your heart, along with some compassion.

3. RESPECT- They want to be treated as the valuable customers they believe they are. They want to be respected as an individual and not treated as an account number or, worse, a nuisance.

4. AN APOLOGY-They want someone to apologize for what happened. They want a sincere apology, specific to their situation, and at the appropriate time in the interaction.

5. EMPOWERED AND KNOWLEDGEABLE STAFF - They want

someone who knows what they are talking about and who doesn't have to escalate or talk to a supervisor to solve the problem.

6. INFORMATION AND/OR EXPLANATION - They want to know why something occurred (or didn't as the case may be). They want an explanation that makes sense. And they don't want the explanation to be “it's our policy.”

7. ACTION (ASAP)-They want you to correct their problem and they want you to do it immediately.

Some people want more and some want less, but the above seven wants appear consistently.

Next Time

When your customer rants and raves, and complains and is really angry, don't try to solve the problem instantly. First, try to listen and understand what he/she is saying, show respect, offer an apology, be empowered and knowledgeable and then (and only then) provide information, explanations and/or solutions.

Simply put – fix the customer, then fix the problem. 🙏

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Ray Branz is customer service manager at Whitmire Micro-Gen.

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MARY ELLEN WILSON



TERMITE MONITORING

The Prescription Treatment® brand Termite Monitoring System equips Schendel Pest Services with the tools for a perimeter monitoring program that works 24/7 and adds value to their bottom line.

Over the years, many PMPs have expanded their services to include, in addition to pest management, lawn care, snow removal, installation and removal of outdoor Christmas lights and other services. With pest management, or any field for that matter, the value of contracted services becomes the deciding factor in a company's selection process.

Termite Monitoring

One value added service that is often overlooked is a proactive program for termite monitoring around a home to reduce the potential for termite infestation and costly repairs from damage.

The PT® brand Termite Monitoring System offers PMPs the tools for a complete perimeter termite monitoring program.

Schendel Pest Services in Topeka, Kansas knows firsthand the value of the PT brand Termite Monitoring System. Jim Luck, technical and training manager for Schendel has been in the pest management industry for more than 19 years and was recently looking for new products that would fit in with Schendel's current services.

"We were looking at our current services and wanted to develop a couple of new service programs," Jim said. "The value of the program would be a direct reflection of incorporating this product into our new service program."

Jim wanted to evaluate the potential for success vs. Schendel's financial investment and performed field trials to evaluate product effectiveness, program standards, procedures and price with marketing material.

For Schendel, the PT brand Termite Monitoring System has significantly impacted their pest management and termite control markets.

"We now can package a program that includes pest management and termite control," Jim said. "If the customer has a pest management program, now they can have a system that detects the presence of termites or if the customer has a termite program, then we have a tool that detects termite presence on the property. With either program, it gives Schendel the knowledge to understand what is happening on that customer's property."

Program Customization

An important option of the PT brand Termite Monitoring System is the customization of the station with a company's brand name. The PT 701 and PT 706 stations can be injection molded and/or ink pad printed on the surface of the station with a company's brand name, logo or company name.

A complete customization and marketing program will enhance the value of a company's service to the homeowner, instill trust and help grow

business by keeping their name "top of mind" to current as well as future accounts.


Schendel Pest Services felt there was a perceived value with the customization option and wanted to market their program and the Schendel brand.

"There will always be value in putting our name on any of our products," Jim said. "When we can go out and offer the customer a product that provides benefits for both general insect control and termite control with a familiar brand, then we have built value. We certainly have seen sales increase with potentially long-term customer care."

"These new programs are just a year old, but have been a positive



PT brand Termite Monitoring System

venture to date," Jim said. "I hope that the stations are constantly being reviewed to include the newest and latest technology and innovative ideas. It benefits everyone using the product by constantly improving an already good product." 

Mary Ellen Wilson is communication specialist at Whitmire Micro-Gen.



TOM BRYDON

NEW PRODUCTS

From Prescription Treatment® brand 388B Advance ant gel baits to Prescription Treatment Pest Management bulletins, Whitmire Micro-Gen is providing PMPs with new and updated information to help them succeed in their businesses.

PRESCRIPTION TREATMENT BRAND 388B ADVANCE ANT GEL BAIT

PT® brand 388B Advance ant gel bait debuted at the 2002 NPMA convention and exposition in Orlando, Florida. Not only did attendees experiment with this exciting new ant gel bait with its PT brand 345 applicator, they also saw a variety of ants quickly consume it in a recently taped Jeff Tucker video production.

PT brand 388B Advance ant gel bait is designed with a patented inert material that keeps the complex sugar-based liquid readily ac-

cessible for ants' consumption and transportation of the active ingredient (5.4 percent borax) back to their colony. The thick liquid can be easily placed in areas where conventional gels are used with phenomenal results. PT brand 388B is available in a 30-gram reservoir and packaged with four reservoirs and plungers per case. Contact Whitmire Micro-Gen or your local distributor for more details about PT brand 388B Advance ant gel bait and make it a part of your ant control program.

PRESCRIPTION TREATMENT BRAND 381B ADVANCE LIQUID ANT BAIT

In addition to Whitmire Micro-Gen's extensive ant bait products, coming soon to the PMP market is PT brand 381B Advance liquid ant bait with a 1.3 percent borax formula that uses a sugar attractant to keep ants feeding for days. Over the past few years, we have seen how liquid ant baits can save accounts and now PT brand 381B Advance liquid ant bait gives you the consistent results you have been looking

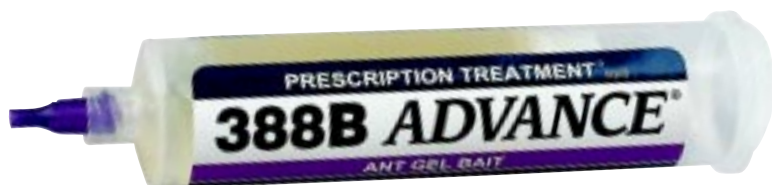
for in liquid baits. Look for PT 381B Advance liquid ant bait on your distributor's shelves on March 3, 2003.

COMING SOON - IMPROVED GRANULAR ANT BAIT

New and improved PT brand Advance granular ant bait will soon be available from your local distributor. We have enhanced the performance and reduced clumping with a slight modification of the corn meal matrix of this special bait. The larger particle size is more attractive to ant species and therefore more rapidly transported back to the colony. It is also easier for technicians to spread than the previous formulation. PT brand Advance granular ant bait will still be available in a 12-ounce shaker bottle and a 6-pound bucket.

PRESCRIPTION TREATMENT BRAND PEST MANAGEMENT BULLETINS

Prescription Treatment brand pest management has been taught for more than 20 years. The concept



is simple—a structured, integrated approach to pest management. Though it may be a new concept for some, Whitmire Micro-Gen has stayed committed, and continues to stay committed to the Prescription Treatment brand pest management, and has been successful in shaping the ever-evolving pest management industry.

We are continuing to support our Prescription Treatment effort with the introduction of our new Prescription Treatment Pest Management Bulletins. We are trying to keep it simple, straightforward and relevant.

Each bulletin reviews the Prescription Treatment process highlighting the five components:

- Inspect
- Prescribe
- Communicate
- Treat
- Follow-up

Volume 2 concentrated on bedbug infestations in hotel rooms. Volume 3 took a good look at German cockroaches in dishwashing areas of commercial kitchens. We will continue with many more frequently encountered pest management problems over the next year.

The goal—to get PMPs to think through each pest control situation, make the right choices and take action for a successful and profitable pest management business.

For additional information and bedbug/cockroach photos visit: www.pt-u.com/bedbugs or www.pt-u.com/cockroach. For your FREE Prescription Treatment Pest Management binder call (800) 777-8570 or request a binder on-line at www.wmmg.com.

Tom Brydon is marketing director at Whitmire Micro-Gen.

Though it may be a new concept for some, Whitmire Micro-Gen has stayed committed, and continues to stay committed to the Prescription Treatment brand pest management, and has been successful in shaping the ever-evolving pest management industry.



JOHN FLORES

ANT BAITS

Because of ant variables such as species and behavioral traits, finding the perfect insecticide can be a real challenge for PMPs. Whitmire Micro-Gen has a complete line of ant baits that appeal to the most challenging ants.


It is common knowledge that for the past few years, ants have been the number one pest challenge for the pest management professional. Species identification, behavioral traits, colony location and size are variables that make ants difficult to control. With those variables in mind, Whitmire Micro-Gen has developed a complete line of ant baits to appeal to the most challenging ant species.

The key to success with ant bait is quick acceptance and recruitment by

ants to provide enough bait to the colony to affect the viability of the ants. The more toxicant shared among members of an ant colony, the better the effectiveness of the application. The end result is less ants and fewer callbacks.

Some ant species may require more than one type of ant bait to effectively control them. In some cases, it's best to offer several baits at once to determine which bait the ants will accept at that particular

time. There are many reasons for using different baits including: colony size, seasonal nutritional needs, application method, competitive food resources and quantity of bait available.

When you encounter a difficult ant job, check the chart below for a quick breakdown of ant baits available from Whitmire Micro-Gen. 

John Flores is technical services manager at Whitmire Micro-Gen.

PRODUCT NAME	ACTIVE INGREDIENT	BAIT FORM	PRIMARY ANT	ADDITIONAL LABEL ANTS
PT® brand Advance® Dual Choice® ant bait stations	0.5% sulfluramid	Disposable bait station containing two different attractants: peanut butter and silkworm pupae within separate trays.	Pharaoh	Cornfield, Argentine and other household ants
PT brand Advance granular ant bait	0.011% abamectin	Corn meal (small grind) containing proprietary ant attractant.	Many small ants	Acrobat, Argentine, bigheaded, carpenter, crazy, field, fire, harvester, little black, pavement, pharaoh, odorous house, thief and other household ants
PT brand Advance 375A Select granular ant bait	0.011% abamectin	Corn grit of variable sizes containing blend of premium proprietary ant attractants for near universal appeal.	Finicky species or all	Acrobat, Argentine, bigheaded, carpenter, crazy, field, fire, harvester, little black, pavement, pharaoh, odorous house, thief and other household ants
PT brand Advance granular carpenter ant bait	0.011% abamectin	Corn grit of large sizes with proprietary carpenter ant attractant.	Carpenter	Acrobat, Argentine, bigheaded, carpenter, crazy, field, fire, harvester, lasius, little black, pavement, pharaoh, odorous house, thief and other household ants
PT brand Ascend® fire ant bait	0.011% abamectin	Corn grit of variable sizes with proprietary fire ant attractant.	Fire	Fire, pharaoh and related ants
PT brand 388B Advance ant gel bait	5.4% borax	Gel containing sugar attractant.	All	Acrobat, allegheny, Argentine, bigheaded, cornfield, crazy, ghost, harvester, little black, odorous house, pavement, pharaoh, pyramid, whitefooted, thief and honey ants
COMING SOON PT brand 381B Advance liquid ant bait	1.3% borax	Liquid containing sugar attractant.	All	Acrobat, allegheny, Argentine, bigheaded, cornfield, crazy, ghost, harvester, little black, odorous house, pavement, pharaoh, pyramid, whitefooted, thief and honey ants

Economics of Fly Systems

Economically speaking – Prescription Treatment® brand Vector® fly systems are light years ahead. By Melissa Bachman

Why should a PMP use PT® brand Vector fly systems rather than competitive products?" This is the most common question the Whitmire Micro-Gen technical group encounters regarding the PT brand Vector product line. In an industry that strives for greater efficiency, standardization, and convenience, the PT brand Vector fly systems are light years ahead of the competition. The following points outline the potential savings you can expect by using PT brand Vector fly systems:

Economical

Four of our Vector fly systems (PT brand Vector Classic, Vector Nova, Vector Super Nova and Vector Super Nova Plus) use standard 15-watt bulbs that have been tested to be efficient and attractive by PMPs nationwide. The 15-watt UV bulbs are economical because they are, on average, the least expensive UV bulbs available and reduce electrical bills for your customers. You will also benefit by consolidating the number of SKUs in your inventory and on your service vehicles.

Easy, Fast, Convenient

The PT brand Vector Classic has been the industry standard for more than 10 years. Their advantages include easy inspection and fast and convenient glue board/UV bulb replacement. No tools are required. Technicians can service the PT brand Vector Classic FAST.

Translucent

Food processing plants and restaurants are always challenging accounts due to competition from bright lights and food sources. That is why the patented trans-

lucent technology was designed. The PT brand Vector Super Nova and PT brand Vector Discreet use translucent components that enhance and evenly distribute the UV light in the appropriate insect attraction range of 374 nanometers. The translucent components allow the 15- and 26-watt bulbs to attract and compete head-to-head with the larger, more expensive industrial units on the market today.

Universal Glue boards

Insect light traps and their glue boards come in all shapes, sizes and prices. At the 2002 NPMA convention, attendees glimpsed Whitmire Micro-Gen's newest addition to the PT brand Vector product line – the Prescription

Treatment® brand 907 universal glue board. The PT brand 907 universal glue board can be used as a back and/or bottom glue board and is designed to fit into our PT brand Vector Classic, Nova, Super Nova and Super Nova Plus fly systems, as well as many of the competitive units on the market today.

Not only does it have universal

appeal, it's also easy to use and costs less than competitive glue boards. The PT brand 907 is now the most versatile glue board on the market.

Economically speaking, PT brand Vector fly systems save you money associated with service and labor costs while reducing your inventory by consolidating SKUs.

For more information on the economics of using PT brand Vector fly systems contact us at 1-800-777-8570. If you want to make pest management more profitable, you can't go wrong using PT brand Vector fly systems. 🦋

Melissa Bachman is commercial marketing manager at Whitmire Micro-Gen.



German Cockroaches Avoiding Gel Baits

PMPs may need to take a new approach to control German cockroaches. By Dave Naffziger

A common PMP seminar and training topic used to be German cockroach resistance to traditional crack and crevice residuals like diazinon, chlorpyrifos, propoxur and cypermethrin. With the introduction of crack and crevice baiting, successful cockroach control has become a routine procedure.

Now, there are scattered reports of German cockroaches' reluctance to feed on gel baits. This may be a

It is time to review your German cockroach control program to make sure you have not overused gel baits and neglected the use of other effective methods and products.

warning for PMPs to seriously review their German cockroach treatment techniques.

Questions to Ask

You need to ask yourself some questions if you are having recurring German cockroach infestation problems in an account:

- Is the German cockroach infestation a continuous problem?
- Is the account properly baited with appropriate placement and quantities?
- Is it unlikely that new cockroaches are continuously introduced into this account?
- Are sanitation and repair issues addressed?
- Are cockroaches living in cracks that are baited with gel?
- Is it unlikely that your bait placements are contaminated by cleaners or pesticides?

If you answered "yes" to all these questions, you may have a German cockroach population that is reluctant to feed on gel bait formulations and should consider alternate treatment approaches.

Treatments that Work

1. The first and most important component to Prescription Treatment Pest Management was, and still is, inspection. Go back to your account and conduct a comprehensive inspection and then do a conventional "clean out."


2. Flush all suspected harborages with a directed contact application of a pyrethrin based product such as: PT® brand 565 Plus XLO® pressurized contact insecticide, PT brand P.I.® contact insecticide or PT brand ULD® BP-300 contact insecticide with a PT brand Micro-Injector®. Next, treat cracks and crevices where roaches were found with a residual product.

3. In food preparation areas, use crack and crevice aerosols such as PT brand CyKick® crack and crevice® pressurized residual and PT brand Orthene* (acephate) crack and crevice pressurized residual. After years of use, there have been no reports of acephate resistance in German cockroaches.

4. The use of PT brand dusts should also be an integral part of any German cockroach control program especially around equipment, counters and void areas. Use PT brand Perma-Dust® pressurized boric acid dust in damp areas or use PT brand Tri-Die® pressurized silica and pyrethrum dust (or bulk dust) in dry voids.

5. Another, often overlooked option, is to use PT brand Avert® dry flowable cockroach bait in homes and non-food areas of your accounts. Because PT brand Avert dry flowable cockroach bait has a dual action effect, it is

proven to effectively control populations of German cockroaches with an aversion to gel bait. The dual action in PT brand Avert dry flowable cockroach bait relates to its attraction to cockroaches as an attractive bait and as cockroach tracking powder that they may pick up as they travel through treated areas and ingest later when preening. Remember, at this time, there appears to be no resistance to the active ingredients in gel baits, but there is speculation about some food avoidance with gel formulations.

Gel baits have become an important tool in controlling German cockroaches. Whitmire Micro-Gen has a large selection of proven tools and products in controlling cockroaches along with gel baits. It is time to review your German cockroach control program to make sure you have not over used gel baits and neglected the use of other effective methods and products. 

Dave Naffziger is senior research scientist at Whitmire Micro-Gen.

** Orthene is a registered trademark of the Monsanto Company for acephate insecticide.*



2002 Institute of Technology Review

Biology of subterranean termites and international practices highlight topics discussed at WMIT. By Jeff Tucker

If the measure of any training program is the quality, timeliness and relevance of the presentations, then the 2002 Whitmire Micro-Gen Institute of Technology (WMIT) in Toronto was superb. This was the first international WMIT and the presentations touched on every aspect of modern pest management practice. Following are some highlights.



Dr. Roger Gold, Texas A&M University, explains the biology of subterranean termites.

Dr. Roger Gold of Texas A & M University started the technical presentations with a review of his research program at Texas A & M. Among the areas discussed, the biology of subterranean termites offered attendees new insights into "open" colonies, foraging patterns and prediction of swarm dates.

Dr. Ed Vargo of North Carolina State University discussed the social and spatial organization of subterranean termite colonies in North Carolina.

Rob Fryatt, commercial director for the UK based pest control manufacturing and marketing company Sorex International, leading independent supplier to the European pest control industry, talked about the European urban pest control market. His topics included an initial perspective on Europe, some similarities and differences from North America and the size and shape of the

European market. Some key issues affecting the European market he discussed included regulatory environment, environmental taxes, the influence of the "green" consumer and the food supply chain.

Dr. Robert Corrigan, the industry's pre-eminent rodent control expert, gave an eye-opening presentation on practical insights into inspections by food plant auditors. Dr. Robert Strong of Steritech took a look at inspections by lodging and hospitality auditors. Both presenters analyzed their respective environments and gave excellent overviews of the needs of these industries and the level of performance expected for pest management companies to be successful in servicing these industries.

Dr. Ted Granovsky, B.C.E., founder and president of Granovsky Associates, Inc. and International Institute for Urban and Social Insects, discussed pest control in Latin America including key pest problems, pesticide safety and poor exclusionary practices in the food industry.

Dr. Phil Koehler of the University of Florida presented research findings on termite tunneling behavior and the relationship of termites and moisture. The impact of soil compaction on tunneling behavior was investigated. As it turns out, there is more tunneling in low compaction soils and significantly greater mortality of termites in high compaction soils. Also, Phil pointed out that a minimum tunnel size of approximately two millimeters is enough



room to allow two termites to pass one another in the tunnel. Further research by Phil's team has shown that termites require greater than 15 percent wood moisture for survival with

Dr. Theodore Granovsky, B.C.E., Granovsky Associates Inc., speaks about pest control in Latin America.



Attendees Tom Zorka and Chuck Shelf listen during one of the presentations.

or without ground contact and that the optimal moisture level in wood could be as high as 60 percent.

Dr. Dawn Wesson of Tulane University presented an overview of medical entomology and its implications for the pest management industry. She also discussed West Nile Virus and its many mosquito vectors.

Dr. Mike Rust and Don Reiersen presented an overview of their research program at the University of California at Riverside. Mike discussed drywood termites and some new methods for their control using localized treatments. Don reviewed their research on Argentine ants and the development of effective baits for their control.

Dr. Albert Greene of the United States General Services Administration gave a challenging and thought provoking presentation on measuring IPM programs in public buildings. Albert reported on their findings over a 10 year period for 55 separate government buildings operating under an IPM program. Over the 10 year period, they were able to reduce annual tenant service requests from 14,716 to a low of 1,581. Even more remarkable is the fact that they were able to reduce the grams of insecticidal active ingredient used from 4,405 in 1988 to 230 in 1999. As a result, Albert has drawn three primary conclusions:

1. Insecticidal baits have been the "primary enabling agent" for the success of his IPM programs.
2. The most efficient method of monitoring is to rely on customer or client-based monitoring programs. In



Don Reiersen, University of California, reviews research on Argentine ants.

other words, the number of service requests from the customer was the best way to judge program performance.

3. IPM programs should be results-based and not necessarily driven by technology or cookbook approaches. If it's safe, effective and economical, then it's an IPM program. It does not have to conform to anyone's preconceived ideas of what an IPM program should be.

Dave Naffziger of Whitmire Micro-Gen did a great presentation on "Pyrethrin." His presentation covered the history of pyrethrin development and a review of its capabilities and place in the future of pest management.

Dr. Brian Forschler of the University of Georgia gave an overview of his household and structural entomology research program. Projects include the genetic characterization of termite species and populations, termite bait matrix research and basic biological research on the process of food choice in subterranean termites.

At this year's symposium, the Cracker Barrel discussions were re-instituted in honor of the late Dan Stout who presided over them for many years. Mike Rust, Austin Frishman, and Jeff Tucker served as the primary resources. More than 50 people attended the discussion and for more than two hours everyone got involved. Topics discussed included cockroach bait failures in restaurants and multi-family dwellings. This phenomenon had been seen by a number of the participants from around the country. Other topics included fungus gnats, resistance in flea populations, fruit fly control programs, carpenter ant baiting and mouse control. Many of the other presenters were also present at the cracker barrel session and shared their insights into these as well as other pest problems and challenges.

All in all, it was an intense and busy two days. If you didn't make it this year, mark your calendar for the 2004 Institute of Technology. You won't be disappointed. 🍷

Jeffrey B. Tucker is president of Entomology Associates and a consultant for Whitmire Micro-Gen.



Dr. Brian Forschler, University of Georgia, discusses termite bait matrix research.

Borates Used As Pesticides

Boric acid, borax and disodium octoborate tetrahydrate pesticides and their differences. By Dave Naffziger

Boron containing compounds have been used as pesticides or as pesticide ingredients since the 19th century. There are currently three boron-containing compounds used in insecticides:

1. Boric acid (most common)
2. Borax (disodium tetraborate decahydrate)
3. Disodium octoborate tetrahydrate

It is interesting to note that one of the first uses for boric acid was in ant baits which is ironic considering the abundance of boron based ant baits in today's market. Borax (20 Mule Team Borax® washing powder) is also widely used in pesticide formulations. The ratio of boron (essential ingredient in borates) in boric acid compared to borax is 1 to 1.3 which means it takes 1.3 times more borax than boric acid in a formulation to obtain the same level of boron.

The other member of this group is disodium octoborate tetrahydrate (DOT) Currently, Whitmire Micro-Gen does not use DOT as an active ingredient. While all three of these compounds (boric acid, borax acid and DOT) can be used interchangeably in most formulations, there are specific uses for each.

Boric Acid

Boric acid is the standard choice for cockroaches. Prescription Treatment® brand Perma-Dust® pressurized boric acid dust is a special boric acid formulation in a pressurized delivery system. This pressurized system allows for the proper rate of application for the dust, since the placement of bulk boric acid must be carefully controlled to avoid over-application.

Borax

Whitmire Micro-Gen's liquid ant gel baits are based on two boron-containing compounds: boric acid and borax. PT® brand Advance® liquid ant bait is based on boric acid

and has been on the market for several years. While this product has proven to be an acceptable ant bait, Whitmire Micro-Gen recently developed an improved version—Prescription Treatment® brand 381B Advance liquid ant bait. While PT brand Advance liquid ant bait was based on boric acid, we learned through scientific research that a formulation based on borax produces a superior product.

While we cannot disclose the "secrets" of PT brand 381B Advance liquid ant bait, in side-by-side ant trials ant acceptance and efficacy was superior. It is based on borax, so the percent active is 1.3% which brings the boron level to the equivalent rate of 1% boron in PT brand Advance liquid ant bait. The level of boron in these products allows for the slow kill of worker ants so the toxicant can be spread throughout the colony to achieve colony kill.

In addition, we recently launched Prescription Treatment brand 388B Advance ant gel bait based on borax. Again, this formulation has proven to be a superior ant gel as an attractant. The 5.4% active level of borax in this product results in quick kill of foraging worker ants, eliminating them from sensitive areas.

Boron containing pesticides have been used for more than 100 years because of their efficacy and versatility. And, it will probably be around for another 100 years. Whitmire Micro-Gen will continue to strive to develop and market superior boron-containing products for the PMP market. 🐜

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Dave Naffziger is senior research scientist at Whitmire Micro-Gen.

