

Highlights of 1995 National Turfgrass Entomology Workshop and Book Review

by Wendy Gelernter, Ph.D.

The National Turfgrass Entomology Workshop is held once a year for researchers from industry, consulting firms and universities to exchange their results and experiences during the past year. This year's workshop, which was held in Omaha, Nebraska from October 22 - 24, was attended by 35 university and private researchers and 17 representatives from industry. Unfortunately, the only other researchers present from the West (besides me!) were from New Mexico State and Texas A and M.

New insect pests:

- The Oriental beetle, *Exomala orientalis* is a growing problem in the mid-Atlantic and mid-West, but is not a problem in the West. Researchers believe that the increase in these pests may be due to the fact that chlorinated hydrocarbon insecticides such as DDT have finally degraded to low enough levels in the soil that they are no longer insecticidal.
- Ants and the mounds they build on greens are also a growing problem in many states.
- Mole crickets are a huge problem in the southeast, with superintendents typically spending \$1,000 per fairway per year for their control. These are not a pest of turf in California.
- Fall armyworms and chinch bugs are continuing to cause problems in the southeast. The fall armyworm appears to prefer fescues and ryes. Although



present in California, neither insect causes significant damage to turf here.

- Compared to our colleagues in the East, we are relatively lucky in California to have so few new insect pests on turf to deal with. The newest significant pest for us is the black turfgrass ataenius, which first appeared in California in the early 1980s.

Black cutworm research: David Shetlar of Ohio State University has been studying the feeding behavior of starlings on greens. His graduate student has found that black cutworms are only a small part of the starling diet. Their preferred diet includes black turfgrass ataenius adults, sod webworms, ground beetles and rove beetles. Mike Villani of Cornell University has a graduate student studying bird behavior to find out how birds know where the insects are. Chris Williamson (Kentucky State University) conducted a study to determine whether cutworms preferred aerified and/or top dressed greens. Contrary to popular wisdom, he found that cutworms have no preference for aerified greens, but they do like to hide and feed in the aerification holes, making their damage more obvious. Top dressing following aerification appeared to reduce the number of cutworms present on greens.

New insecticide products: Many of the newer products for turf insect control have lower toxicities to mammals and non-target organisms than previous generations of insecticides. Some of these "softer" products are on the market now, or should be introduced in California during the next 2 -3 years. They include:

- Condor (Ecogen, Langhorne, PA) is a strain of *Bacillus thuringiensis* (Bt) that is targeted against sod webworms. This product is currently being marketed in California. Theoretically, it has higher levels of activity against webworms than other Bt products.
- Cruiser Bioinsecticide (Ecogen, Langhorne, PA) is based on a new strain of nematode (*Heterorhabditis bacteriophora*) that is active on cutworms and grubs, and is currently marketed in California. This insect pathogenic nematode strain is considered to be more active on grubs than the strain marketed by Ciba in 1992 and 1993.

Ecogen has contacted PTRI to discuss evaluation of these products during the 1996 season. If you are interested in participating in this research, please let us know.



- M-Press Bioinsecticide from Mycogen (San Diego, CA) will be introduced in 1996 for control of Japanese beetle and chafer grubs. It is based on a grub active strain of *Bt*. Unfortunately, this material does not appear to be active on black turfgrass ataenius grubs, but for those of you who had problems with masked chafer grubs this year, this product should be of some interest.
- RH-0345 is an insect growth hormone that is under development through a joint venture between Rohm and Haas and American Cyanamid (the joint venture company will be known as RohMid). The material is active on both beetle and caterpillar larvae, has high levels of residual activity and acts by interfering with the insect molting process. Based on its low toxicity, the

company expects EPA registration by 1997.

- Dow Elanco will introduce products based on new chemistry called macrocylic lactones (or spinosyns). These materials are produced during fermentation of the microorganism *Saccharopolyspora spinosa*. They are low in toxicity to mammals and non-target organisms, but very active on cutworms and sod webworms.
- Bayer's grub active product Merit will be available soon impregnated on fertilizer. Bayer is also interested in conducting research during 1996 to look more intensively at timing and split applications for Merit. If you are interested in participating in this research, please let us know.
- Trichlorfon (known as Dylox or Proxol) is an older product that has been very effective for control of cutworms and black turfgrass ataenius. There was some discussion that this material may be in short supply next year, however. If you depend on this product, you may want to check with your distributor regarding supply.

The John Seaton Anderson Turfgrass Research Facility is the University of Nebraska's field research farm, and I was lucky enough to get a guided tour of it. With 55 acres devoted exclusively to turf experiments, it is the country's largest university research turfgrass facility. The facility, which was truly impressive, houses 15 research and extension pathologists, entomologists, agronomists and agricultural engineers. Buffalograss variety research on over 1,000 varieties selected from the Plains states is one of the most important ongoing projects here. Insect black light trapping studies on a regional pest, the Southern masked chafer, are conducted here to help superintendents

determine optimum timing for insecticide applications.

Book Review

Handbook of Turfgrass Insect Pests. 1995
R.L. Brandenburg and M.G. Villani, eds.
Published by the Entomological Society of
America, Lanham, MD. 140 pp., illus.
\$30.00 (\$25.00 if ordered in bulk).

The ability to accurately identify insect pests is the first step in any insect pest management strategy. Unfortunately, there have been few publications available for turf managers for this purpose. With the publication of the Handbook of Turfgrass Insect Pests however, an important new tool for golf course superintendents is now available.

The manual reviews the biology, distribution, appearance, pest status, life cycle and management of 31 insect and mite pests of turf -- from the bluegrass weevil to the two lined spittlebug. In addition, two excellent pictorial keys that help you determine which insect(s) is present based on the type of injury observed and/or the appearance of the pest, are included. A good glossary and a listing of U.S. Entomology Departments (with addresses and phone numbers) is good reference information. The most valuable part of the manual, in my opinion, are the excellent photographs (60 color photos in all) of the different life stages of each insect. Additional illustrations of each

pest, drawn to their actual size, are also very useful since photos often mislead the viewer into thinking that the insect is much larger than it really is.

There are some limitations to the manual, the bulk of which stem from the fact that so little turfgrass entomology research has been conducted in the West. For this reason, some of the information presented is more accurate for the eastern U.S. than for the West. For example, for each of the 31 insects and mites covered, there is a map that illustrates the distribution of the pest. Unfortunately, the sod webworm which frequently occurs on California golf courses is shown on the map as absent from California. Similarly, the calendars which were developed for each insect do not necessarily take into account Western weather regimes. For example, the black turfgrass ataenius is shown as having one to two generations (based on data developed in Ohio and Massachusetts), but PTRI research conducted in Southern California shows that the ataenius has three or more generations per year.

Despite these flaws, the manual is a good addition to your reference library and will be very useful in insect pest identification. I encourage you to consider purchasing it. If you are interested in taking advantage of a reduced bulk price, please contact me at PACE. If you wish to order directly from the ESA, call 301-731-4535.

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