

## **Final Report – November 2006**

**Project title:** Encouraging adoption of trapping and monitoring techniques as a component of IPM practices for managing a key desert turfgrass insect pest.

**Project leader:** Kai Umeda

**Project team members:** Gabriel Towers, David Kopec, Scott Anderson (Raven at South Mountain Golf Course), David Bergstrom (Sun City Grand, Cimarron Golf Course), Shawn Emerson (Desert Mountain Golf Club)

**Location of project:** Maricopa County

### **Situation:**

Golf course superintendents encounter turfgrass insect pests without critical decision-making processes to initiate pest control strategies.

### **Inputs and Outputs:**

Conducted a series of 3 peer-to-peer workshops hosted by cooperating superintendents.

“Turfgrass Insect ID and Monitoring Workshops” were conducted on May 1, 2006 at the Raven at South Mountain Golf Course (Phoenix) hosted by golf course superintendent, Jeff Orr (predecessor was Scott Anderson), May 2 at the Apache Golf Course at Desert Mountain (north Scottsdale) hosted by Director of Agronomy, Shawn Emerson, and on May 3 at Sun City Grand Golf Club, Cimarron Golf Course (Sun City) hosted by David Bergstrom and Scott McCall. Agrichemical industry representatives from Arysta LifeScience, Bayer Environmental Science, DowAgroSciences, and Syngenta participated at each of the workshops. Stephen Kimball, Bayer representative, sponsored the luncheon meals on May 2 and 3.

The objectives of the workshops were to have participating superintendents and their assistants and industry consultants learn:

- 1) to identify the major insect pests in Arizona’s turfgrass.
- 2) to install and monitor black light traps.
- 3) the benefits of trap monitoring to optimize turf insect management.
- 4) from superintendent’s experiences with turf insect pest problems.
- 5) technical information about insecticides for grubs.

### **Outcomes and Impacts:**

Total number of participants attending the workshops were 11 at Phoenix, 17 at Scottsdale, and 14 at Sun City. Results of an exit survey from each of the workshops were representative of about 70% of the total participants. Nearly 100% of the respondents rated as Good to Excellent (scale of poor, fair, good, excellent) for the timeliness and relevance of the topic presented as well as for the locations, timing, and format for the events. Of the respondents, 44% indicated that insects were a problem in their turfgrass every year, 26% encountered problems some years, and 30% rarely had problems but none never had problems. As to why insects were a problem, 56% had visible damage on their turf, 33% had to replace turf, and 10% thought they were a nuisance to people. Nearly all of the respondents, 93%, used

insecticides to control a problem while 64% used insecticides to prevent an anticipated insect problem. When they did use insecticides, 25% based the timing on a calendar, nearly half treated based on observing damage or too many pests, and another 28% monitored populations. For monitoring insect pests, 43% of the respondents used traps. Individuals showed varied levels of pest tolerance as 27% indicated that “few” were required before treating, 58% required a moderate level, and 15% treated when there were “many” pests. Most of the participants were at least somewhat comfortable in being able to identify insect pests before the workshop while only 17% were not. Following the workshop, 93% had learned to identify turf pests at the workshops.

Following demonstrations of assembling the black light traps at the workshops, 62% indicated that they would use traps in the future to monitor pests while another third might use traps and only one person would not use traps. Most of the participants, 81%, indicated that their ability to identify and monitor insect pests would improve insecticide timing and efficiency and 19% felt that it may occur. The respondents, 63%, indicated that economic savings would result from IPM practices, 22% felt that savings may result, and 15% were not optimistic.

The hosts of the workshops, David Bergstrom and Scott McCall at Sun City and Shawn Emerson described the grub pest problems on their respective golf courses. All were satisfied with results from trapping and monitoring for masked chafers that enhanced their timing of applications of insecticides for grub management. Data collected from traps setup at their golf courses were posted on the University of Arizona Turfgrass Research, Education, and Extension website during 2004 through 2006 seasons. (<http://turf.arizona.edu/insectsurvey.htm>) Among the participants at the workshops, 95% were willing to share their data when they set up their traps in the future and 89% indicated that they would use the data presented on the website to monitor pests in their respective areas.

In 2004, the masked chafer trapping and monitoring was initiated and operated by the Maricopa County Cooperative Extension Turfgrass Science program on six golf courses around the Phoenix area. In 2005, an additional three golf courses cooperated in the project. There were another three superintendents conducting their own surveys in 2005. During 2006, following the workshops, it was known that 18 golf courses had set up or planned to trap and monitor masked chafer beetles. Interest in trapping and monitoring had increased three-fold since the start of the project. Nine golf courses tried to voluntarily collect and submit data from black light trap catches on a weekly basis for website dissemination.

The objectives that superintendents learn about turfgrass insect pests and to establish black light traps to monitor masked chafer populations were achieved on less than 10% of the total number of golf courses (~200) in the Phoenix metropolitan region. Personal communication with superintendents indicated that insecticide applications were applied in an improved timely manner based on monitoring. Formal evaluations of actual insecticide use and adoption of the trapping technique remain to be completed. Two golf course facilities that did not conduct trapping and monitoring encountered damaging grub infestations in the fall season and both of the new superintendents vowed to participate in the trapping/monitoring program in 2007. The future goal of the project is to recruit and gain majority participation by golf course superintendents to trap and monitor insect pests as an IPM technique.