

## **Stop 11. Remote Sensing & GIS Unmanned Aerial Systems (UAS)**

Robert Goodwin, Joe Welsh, and Dr. Dave Lusch

Please see report on pg. 8.

## **Stop 12. MSUTurfInsects.net**

Terry Davis and Dr. David Smitley

The Turf Insect ID website ([www.msuturfingsects.net](http://www.msuturfingsects.net)) is up and running. It can be used to identify turf pests via entering turf damage symptoms or comparing descriptions and pictures of the damage and insects. Pictures, descriptions, life history and general control measures can be found on this website for all of the major turf insect pests in Michigan. This is the companion website to the turf disease and weed websites.

## **Stop 13. A Bee-Friendly Approach to Home Lawn Grub Control**

Dr. David Smitley

Imidacloprid, clothianidin, and thiomethoxam are the neonicotinoid insecticides used on on home lawns and golf courses for grub control. These insecticides and many other insecticides can be toxic to bees when bee-attractive flowers are sprayed. However, because bees only feed on the nectar and pollen they will not visit turfgrass in home lawns unless flowering weeds like clover are present. If a lawn does not have any flowering weeds there will be no adverse effects on bees when an insecticide is applied for grubs. Let's say that your lawn care company usually treats lawns for grubs, billbugs and chinch bugs in early June. Customer lawns can be divided into two categories with the following bee-friendly grub control options:

- 1. Old customers, no flowering weeds present.**

Standard grub control practices will not harm bees because your outstanding weed control program has eliminated flowering weeds.

- 2. New customers, flowering weeds are present.**

If the lawn is mowed immediately before it is treated with an insecticide for grub control, weed flowers will be removed and the insecticide application will not be harmful to bees. Also, in a recent study in Kentucky, Dr. Dan Potter found no adverse effects to bumble bees visiting clover in a lawn sprayed with chlorantraniliprole (Acelepryn or GrubEx). So, if flowering weeds are present, chlorantraniliprole can be used.

What if linden trees or other flowering trees are present in the lawn? We do not know at this point if the grub control rate of imidacloprid, thiomethoxam or clothianidin applied to turfgrass under flowering trees will be harmful to bees. The trees will absorb some of the neonicotinoid insecticide through their roots and some of the insecticide will be systemically moved