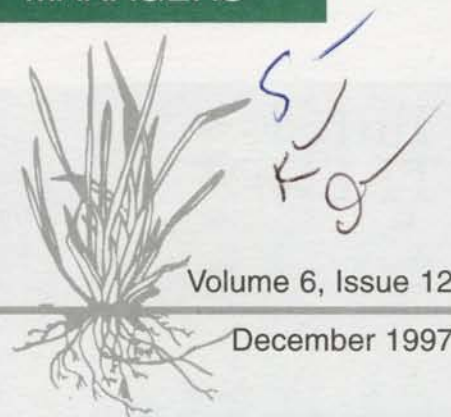


TurfGrass TRENDS



Volume 6, Issue 12

December 1997

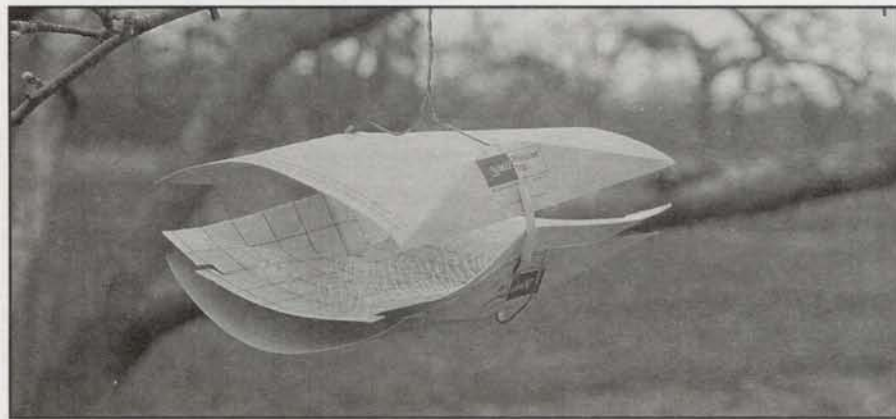
Use of Pheromones in Turfgrass IPM Programs

By *Michael G. Villani*
Cornell University

There is hardly a turfgrass manager in a state east of the Mississippi River who has not seen a Japanese beetle pheromone trap hanging from a tree or post in mid-summer. These traps are often overflowing with adult Japanese beetles, and for this reason turf managers, landscapers and homeowners are often convinced that these traps helped to reduce feeding damage of the adult beetles on their ornamental plantings and also help to reduce the number of Japanese beetle grubs that will invade and damage their lawns in the fall of the year. Is this a reasonable assumption? My goal in this article is to address this question. I will describe what pheromones are and why they are important to the insects that produce them, next I will outline possible uses (and misuses) of pheromones in turfgrass pest management programs, and finally, I will review the steps required to develop a synthetic pheromone for commercialization.

What Are Pheromones?

Pheromones are chemical signals that are released by one individual of a species and stimulate a reaction in other individuals of the same species. Insects of the same species can communicate with one another by emitting



Wing trap used for many moth species, including black cutworm adults.

IN THIS ISSUE

■ Use of Pheromones in Turfgrass IPM Programs...1

What Are Pheromones?

Uses of Pheromones in Turf Pest
Management

Direct Control of Insect Pests

Pheromone Research

Conclusions

■ 1997 Article Index.....7

■ Insecticide Series, Part VII: Insect Monitoring Techniques And Setting Thresholds...8

Soil Sample

Soapy Flush (Irritating Drench)

Flotation (Flooding)

Area Count

Visual Inspection

Pheromone Traps

Black Light Traps

Berlese Funnel

Pitfall Traps

Setting Tolerance Levels