



Department of Pesticide Regulation



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MEMORANDUM

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TO: John Sanders, Ph.D.
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DATE: May 1, 2001

SUBJECT: PRELIMINARY MONITORING RESULTS OF IMIDACLOPRID
APPLICATIONS FOR GLASSY-WINGED SHARPSHOOTER CONTROL IN
RESIDENTIAL AREAS OF SACRAMENTO COUNTY (STUDY 197)

Summary

During March 2001, the Sacramento County Department of Agriculture's contract applicator applied imidacloprid to control the glassy-winged sharpshooter (GWSS), *Homalodisca coagulata*, in Rancho Cordova, California. During this time, the Department of Pesticide Regulation (DPR) took soil and tank samples at several sites in the treatment area. Soil samples had detections ranging from 2.95 to 46.4 parts per million (ppm). A tank sample showed a concentration of imidacloprid of 0.089 % active ingredient versus nominal expected concentration of 0.093%.

Introduction

The County Department of Agriculture used soil drench and injection of imidacloprid to control infestations of the GWSS. The GWSS is a serious agricultural pest in California. When feeding it can transmit Pierce's disease, caused by the bacterium *Xylella fastidiosa*, to grapevines and other diseases to almond trees, alfalfa, citrus, and oleander. First found in the state in 1990, GWSS has spread throughout Southern California and into areas of the San Joaquin and Sacramento Valleys.

The Environmental Hazards Assessment Program (EHAP) of DPR has been monitoring selected treatments in residential areas to provide information on the concentrations of imidacloprid and carbaryl in air, surface water, leaves, soil, and representative backyard fruits and vegetables. Additionally, tank samples are taken when samples are collected. Results reported here are from applications made in March 22, 2001, Rancho Cordova, Sacramento County. Sampling results and related GWSS monitoring reports are also available at DPR's website <www.cdpr.ca.gov/docs/gwss>.



Materials and Methods

Pesticide Application- In Rancho Cordova approximately 700 meters of oleander and acacia trees along the southern and western edges of the Country Club Mobile Home Park were sprayed. One application was made over the course of two days, March 22 and 23, 2001. Applications of Merit WSP®, with a 75% active ingredient of imidacloprid, were made by a private pest control operator. Pesticide was mixed in water at a rate of 1.6 ounces of Merit WSP® in 10 gallons of water and delivered through a Lesco® lawn gun with a shower nozzle at a flow rate of 4 gallons per minute. The spray gun was attached to a 300-foot hose from a truck mounted power rig (consisting of a tank, motor, pressure gun, and pump). Pressure was maintained around 110 pounds per square inch at the spray nozzle.

Soil Sampling- Soil samples were taken from three different locations along the spray zone. Each sample consisted of three 2-cm plugs. Plugs were collected by pounding a stainless steel tube into the soil to a depth of about 2 centimeters. Plugs were combined in glass pint jars and total sample weight was recorded. Samples were stored on dry ice until delivery to the lab for analysis. Soil samples are extracted with methylene chloride and analyzed using HPLC with an ultra violet detector with reporting limit of 0.01 ppm.

Tank Sampling- One tank sample was collected from the pest control operator. Sample was taken from one of the soil monitoring sites. Sample was taken from the hose nozzle into a plastic 500-mL container and stored separate from other samples on wet ice until delivery to the lab for analysis. Tank samples are extracted with methanol and analyzed using HPLC with an ultra violet detector.

Weather- On March 22 temperatures ranged from 50 to 71 degrees and the daily average wind speed was 5 miles-per-hour (mph) from the south, skies were mostly clear. Weather data are from CIMIS station #131, Fair Oaks. (www.ipm.ucdavis.edu/WEATHER/wxretrieve.html)

Results and Discussion

Soil Sampling- Three background soil samples were taken approximately one hour prior to applications in Rancho Cordova. No imidacloprid was detected in any of the background samples. Three post application samples were taken approximately twenty minutes after application to the properties. Samples were collected from the backyards of mobile homes, from soil sprayed directly with the imidacloprid drench. Imidacloprid was detected at 46.4, 2.95, and 10.6 ppm at 433, 452, and 458 Royal Crest Drive, respectively. The variability in soil concentration is largely due to the differences in the amount of leaf litter or groundcover plants on the soil surface.

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Tank Mix- Tank sample contained 0.089% active ingredient of imidacloprid. The nominal tank concentration used for the application in Sacramento County based on 1.6 oz Merit per 10 gallons of water is 0.093%. This showed high accuracy in mixing the correct amount of material. Label rates for Merit 75 WSP®, active ingredient of 75%, for trees, shrubs, and ground covers range from 1.6 oz Merit 75 WSP per 24 to 48 inches of cumulative trunk diameter or feet of cumulative shrub height to 1.6 oz per 8,250 to 11,000 square feet for ground covers.

Imidacloprid Monitoring Sites in the Glassy-winged Sharpshooter Treatment Area, Rancho Cordova, Sacramento County, Calif., 2001

