



# Carbaryl Monitoring Report

Environmental Monitoring and Pest Management Branch  
 Department of Pesticide Regulation  
 P.O. Box 4015  
 Sacramento, CA 95812-4015

Newsletter Issue VI

December 2000

## Environmental Monitoring of Carbaryl in Glassy-Winged Sharpshooter Treatment Areas in Chico, Calif.

This is a brief update of monitoring results of carbaryl (7® Insecticide) in various environmental samples collected by the Department of Pesticide Regulation (DPR). Detailed report will be provided once treatment is completed.

The County Departments of Agriculture, under the guidance of the California Department of Food and Agriculture has been treating glassy-winged sharpshooter infested properties with carbaryl in Chico, Butte County, Calif. DPR monitors selected treatment in urban residential areas (see map) for carbaryl residues. Samples were taken for spray mixture in tank, air, foliage, and surface water

### Spray Tank Samples

Samples were collected from the hose-end of a spray tank

### Concentration of carbaryl in tank samples

Location	Date Sampled	Concentration %
Whitman Ave	11/5/00	0.142
Chico Mall	"	0.151

Calculated theoretical tank concentrations at label rates from 1 to 4 teaspoons per gallon of water are 0.05 to 0.21 percent, respectively.

### Surface Water Samples

Water samples collected on 11/4/00 were prior to treatment. All other samples were taken following completion of treatment; samples on 11/13/00 were taken during the first rain event following application.

### Concentration of carbaryl in surface water samples

Location	Date Sampled	Carbaryl Conc. (ppb)
Little Chico Creek; Comanche Creek	11/4/00	ND; ND
"	11/5/00	ND; ND
"	11/13/00	ND; ND

LC<sub>50</sub> for *Daphnia magna*, a waterflea, is 18.6 ppb for carbaryl.



DPR scientist Dave Kim samples Comanche Creek

### Leaf Samples

Forty one-inch diameter leaf punch samples were taken one hour after treatment. Samples were analyzed for dislodgeable foliar residue.

Location	Date Sampled	Carbaryl (ug/cm <sup>2</sup> )
Community Park	11/5/00	2.14
Chico Mall	11/5/00	3.79

Iwata et al. (1979) reported carbaryl foliar residues ranging from 2.4 to 5.6 ug/cm<sup>2</sup> at time of harvest.

### Air Samples

Samples collected at four intervals: for approximately 12 hours before application, during application plus one hour, for 24 hours after application, another 24 hours. All samples were collected using XAD-4 resin tube with personnel air sampler at 3 liters per minute.



**Location of air sampler and carbaryl application**

Concentration of carbaryl in air before, during and after application.

Location	Date Sampled	Before Spray (ppt)	During Application	Post Application 24 hours	Post Application 48 hours
Whitman Ave	11/5/00	ND	ND	ND	ND

ND= none detected

The preliminary health screening level for acute exposure to carbaryl is 3,053 parts per trillion (ppt).

This project is funded by the California Department of Food and Agriculture, glassy-winged sharpshooter project special appropriation. For a detailed study protocol and other updates, visit <http://www.cdpr.ca.gov/docs/gwss> or contact Kean S. Goh at (916) 324-4072 or email at [kgoh@cdpr.ca.gov](mailto:kgoh@cdpr.ca.gov).