



The Square Fountain Garden shows that the quality of horticulture displays hasn't been reduced due to the IPM program.

AN ALTERNATIVE

Integrated pest management is drawing raves from Longwood Gardens in Kennett Square, Pa., where some 350 acres are being effectively managed.

by Donald R. Buma, Longwood Gardens

Integrated pest management (IPM) is a current and often-discussed approach to controlling pests.

IPM is a program consisting of:

(1) closely monitoring plants and insects to determine their stage of development and pest severity;

(2) if necessary, implementing a correctly timed plan of action to control the pest with a biological or least-toxic chemical and;

(3) evaluating whether the desired results were achieved and readjusting the control plan if appropriate.

IPM has worked for several commercial landscape/arborist firms and has been used successfully with a number of agronomic crops.

Longwood Gardens in Kennett Square, Pa., has instituted a landscape management plan of pest control management based on an in-house



Low level pest populations were treated in areas such as the Hillside Garden with short-lived pesticides.

staffed IPM program.

Goal: no quality loss

Longwood Gardens consists of 1,000 acres, 350 of which are intensively managed as horticultural display gardens and conservatories. These displays attract more than 700,000 visitors each year.

A reduction in the amount of the more toxic pesticides was of primary concern, both from a visitor safety and environmental standpoint. It was imperative that there be no reduction in the horticultural excellence of the displays when pesticide use was reduced.

In short, the goal was to use fewer pesticides while maintaining or improving the quality of the garden displays.

To accomplish this goal, we needed to find a person highly trained in the principles of integrated pest management and familiar with the

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Comparison of some chemicals used

	1984 (Pre IPM)	1985	Difference
Insecticide A	120 lb.	0	- 120 lb.
Insecticide B	83 gal.	17 gal.	- 67 gal.
Fungicide A	126 lb.	45 lb.	- 52 lb.
Miticide A*	50 gal.	5 gal.	- 45 gal.
Insecticide C	28 lb.	0 lb.	- 28 lb.
Insecticide D*	19 gal.	5 gal.	- 14 gal.
Insecticide E*	34 gal.	21 gal.	- 13 gal.
Insecticidal Soap	0	75 gal.	+ 75 gal.
Horticultural Oil (Dormant and Summer)	285 gal.	973 gal.	+ 607 gal.

*These chemicals used in areas not completely included in IPM program

practices of pest control. A pest manager had to be present in order to identify pests and plan, coordinate, and ensure proper follow-up of control procedures.

Prior to IPM implementation, the spray crew consisted of two on-the-job-trained employees who applied cover sprays based on calendar date and general plant examination. It now consists of a spray applicator and the pest manager.

The pest manager position developed through the upgrading of a vacated post. There was no increase in personnel.

With the addition of the pest manager, a regular inspection (scouting) schedule was established. We now apply pesticides based on need rather than calendar date and past records.

Pesticides are used only if population levels warrant application.

The pest manager scouts all garden areas once every one or two weeks. By checking individual areas regularly, low level pest populations are detected early and are treatable with relatively non-toxic, short-lived pesticides, such as insecticidal soaps and horticultural oils.

In addition to the positive environmental and human benefits of less-toxic pesticides, a major pest management-related advantage exists: insecticidal soap and horticultural oil do not have as harmful an effect on beneficial insect predators as do the more toxic chemicals.

The resulting increases in beneficial insect populations, which control insect pests, may significantly reduce the need for applying additional toxic chemical controls in the future.

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Pests down, quality up

To date, the IPM program is meeting the originally stated goal of using fewer toxic pesticides (see table above) while not reducing the quality of the horticultural displays.

We have actually increased the quality of the horticultural displays. This is because regular scouting enables sprays to be applied at the optimum times for best coverage and control.

Also, scouting identifies many potential pest problems before any significant damage occurs. There has been additional indirect cost with the IPM program but with the improved displays, it has been more than recovered.

The additional cost was incurred because scouting and pest control were expanded into areas not previously covered by the two-person spray crew.

This made it necessary to augment the pest manager's position on the spray crew on certain days in order for the pest manager to cover the expanded scouting and spot application demands.

Experience at Longwood Gardens has shown the landscapes can be attractively maintained by changing from cover sprays to an in-house program of integrated pest management.

Success depends first of all on having a trained, knowledgeable pest manager to do regular landscape inspections that are followed by timely and correct pest control measures.

It also depends on proper plant care and cultural practices that promote good plant health and reduces the likelihood of pest problems that need to be managed. **WT&T**



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