

IPM techniques for unique horticultural situations[©]

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INTRODUCTION

This presentation discusses various integrated pest management (IPM) strategies that were developed in response to situations where using conventional pest control practices, or materials were impractical or could be deemed unsafe. I have been a practitioner of IPM for over 35 years now. I use less conventional pest control products than I previously did. My philosophy is and has been to move towards a less or non-toxic solution in my horticultural endeavors.

I will now discuss some of these methods I have come up with to deal with several situations where conventional methods may have been impractical. These methods while admittedly may be unorthodox, could be adapted to your particular horticultural operation, in order for you to deal with a similar situation.

MATERIALS AND METHODS

Dealing with insect pests of flowering perennials can be complicated. The issue of exposing bees and butterflies to chemicals means that treating for insect pests in a flower border limits your options.

Some of the “new tools” I have adapted for IPM methods are sponge and bristle paint brushes. A wet/dry vacuum, power washer, aquarium or laboratory pipe brushes, and rubber and cotton gloves. These days I employ insect traps to monitor and remove as many adults insect pests in a given situation. Then I implement a low toxic or targeted product to treat other life stages of an insect pest. In one example, I have been encountering sunflower moth, *Homoeosoma electellum*, in a number of perennial gardens. This pest typically infests coneflowers (*Echinacea*). Now, while this pest is cyclic, and may or may not reappear the next season, they cause cosmetic damage to flower heads. When I see the typical mounding of excavation and caterpillar frass on the top of the flower heads, I set out traps. I then use pruners to remove the infested flower heads. Then I treat the remaining flowers on that plant, and nearby plants with *Bacillus thuringiensis* var. *kurstaki*.

Bacillus thuringiensis variety *kurstaki* has been shown not to be detrimental to bees. I do however; wait until later in the day or even early evening, when the bees are less likely to be visiting these areas, to apply the product via trigger sprayer. I continue to monitor the traps and flowers to evaluate the population levels for several weeks after this protocol has been implemented.

Water features such as fish ponds and pond less waterfalls have been popular over the years. Often these garden additions feature specimen trees and shrubs to compliment the water feature. These plants are sometimes sited near or right next to the water feature. As they mature, these plants can overhang or come in contact with the water itself. If one of these plants becomes infested with an insect pest, or infected with a particular disease, conventional treatments should not be used. This is especially true if there are fish in the pond or there are birds or amphibians that frequent the water feature. In one instance I had to treat a good sized mugo pine, *Pinus mugo*, that was over hanging a waterfall that connected to a koi pond. This pine was 60% covered with scale insects. I decided to use a power washer to remove the insects with pressurized water. I first had to erect a plastic sheet under and around the branches of the pine that over hung the water. This was done to prevent the water and the needles or insects from washing into the water stream. After washing off a majority of the insects, I carefully applied horticultural oil, by way of a paint brush and a trigger sprayer, to cover the remaining scale insects. The plastic barrier was left in place for several hours. Any oil or water that dripped off, or plant material that was

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knocked loose, was collected with a wet/dry vacuum cleaner. The plastic with any remaining debris was then removed. The pine was evaluated for the next several months. If visible signs of scale insects were detected, the treatment method was repeated.

Mealy bugs and aphids are typical pests of both herbaceous and woody plants. Applying dust to aphids is an effective control method. I have also used a solution of household ammonia and dish soap to remove and reduce aphid populations on a range of herbaceous plants. This combination gives the aphids an "upset stomach." It may not kill them out right, but it does get them to drop off or move off of the treated plant. I combine a tablespoon of each product in 1-gal container and then transfer the product to a trigger sprayer. Then this solution is sprayed over the insects. An alternative method is to use two gloves, one rubber and one cotton or fabric glove to "rub" the insects off of plant stems. The rubber glove is put on first, then the cotton glove over the rubber one. Then you dip your hand with the gloves on, into the ammonia and soap solution. Squeeze your fingers together to remove the excess water, and then use the gloved hand to remove as many of the aphids as possible.

Plant diseases that infect leaves create certain problems. With regards to crab apples in landscape situations, in addition to the disease itself, there is also the problem of removing the fallen leaves. Often time's reinfection can occur when the leaves or even fruit is not removed. Typical beds under these trees usually have some type of processed mulch product over the soil. When raking the leaves, the mulch often is removed as well. This causes double work. When I encounter this situation, I will, with the client's approval, replace the wood mulch, with a decorative stone product. In one project to date, I used tumbled glass, instead of stone, as mulch. This makes clean up easier. The heavier product isn't removed as easily. What I do in addition to the stone is to employ a wet/dry vacuum. I vacuum up the leaves, and if there is fallen fruit, that as well. This eliminates the possibility of reinfection by fungal or bacterial leaf diseases. This would be in addition to a product to treat these diseases, if such a product was used. If you do decide to use a rake, there are rubber headed rakes which are quite handy at collecting the leaves from the top of the stones in the bed.

I have used brushes that are used to clean aquarium pipes or even bird feeders, to remove mealy bugs and scale from intermediate conifers, and deciduous trees and shrubs. These are especially good when the insects get into the secondary branches, and even the crevices of the bark itself.

In certain weed invasion circumstances, spraying a weed control product over the top of a bed or border may not be a good idea. I have used either a bristle or sponge paint brush, along with an organic weed control product, Scythe®, to spot treat various broad leafed weeds that have found their way into beds and borders.

Wilt Pruf®, which is an anti transpirant product, can be used to treat black spot disease of roses. It does not have the resistant issues that typical fungicide products can develop. It is a beta-pinene polymer compound, when combined with water forms a terpene emulsion. This creates a barrier to the fungal hyphae. Of course if there is a heavy rain, or the rose plants are watered overhead, this product must be reapplied. Given its organic polymer nature, it makes an excellent product in an IPM program.

Other types of traps I have used for urban garden pests are fly and wasp traps.

These types of traps are situated away from sitting or eating areas of a garden or landscape; thus collecting these insects away from people. This reduces the risk of food contamination, or people or animals being stung. When the traps are full, the insects are disposed of. I empty the traps into a bucket of hot water to neutralize the insects.

Lastly, with the news these days about mosquitoes and the diseases they carry, municipalities as well as home owners fogging and spray regimes, have come to the fore. While large whole sale spraying is done for urban areas, home owners can use a number of mosquito traps on the market to collect these biting insects instead of constantly putting out various chemicals, which require frequent application. These traps range from a few hundred dollars each, to upwards of \$500 or more. I have used several different configurations, and I can say that they definitely work. These devices reduce mosquitoes in

the area that they are installed in. Most employ a light unit, and some combine the fan, light, and a carbon dioxide canister to further attract the insects to the trap.

While these methods are not typical of usual horticultural protocol, there are instances where chemical exposure to non-target species is not desired. Also exposing people and household pets will cause liability issues. Looking for low or non-toxic methods to reduce or even eliminate pest infestations or infections is worthwhile.

