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hold the key

BALANCING

Pest Management and Conservation On Ornamental Plants

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A MAJOR challenge plant management professionals face is the increasingly apparent conflict between maintaining a healthy landscape and providing safe habitat for beneficial wildlife like butterflies, bees and birds.

Many common ornamental plants support beneficial wildlife by providing shelter and/or food resources. However, in urban and residential settings, many of these plants are also attacked by key insect pests that can reduce their aesthetic value and health. Although treating these pests with insecticides is often the simplest answer, we are learning more and more about how many insecticides bring

their own host of issues. In this case several common pesticide groups can have negative effects on beneficial insects like bees, butterflies, and nonpest, plant-feeding insects.

So, What Are We To Do?

The first, and perhaps most critical, step to balancing pest management and conservation is proper plant selection. The first principle of Florida-Friendly Landscaping™ and key component of integrated pest management is “right plant, right place.” This means considering a site’s soil, light, water, climate, and local landscape conditions and selecting a plant that will thrive there. Healthy plants are

less likely to have pest outbreaks than stressed plants, and healthy plants can tolerate more feeding damage than unhealthy plants when outbreaks do occur.

Plant selection can determine whether pest outbreaks will occur. Although many common ornamental plants have key pests, there are plenty of ornamental plants that are either resistant to pests or have no known pest problems. The University of Florida’s Institute of Food and Agricultural Sciences has lists of Florida-friendly plants online that can help guide your decisions, and of course there is always your local county Extension agent to consult for advice.



Treatment Threshold And Plan

Of course, plant selection is not always an option. I'm sure we can all readily create a list of desirable and undesirable plants to maintain. Focusing on the plant palette you're dealt, the next course of action is defining a treatment threshold and plan. Not all pests threaten the health of the plant. Not all plants provide wildlife conservation value. And, everyone has a different level of "acceptable." So, become familiar with the relative risks of key pests, conservation value of key plants, and how to walk the line between the two.

A highly visible flowering shrub in a front yard may have a lower threshold for damage than a large, well-established tree in your back yard. Some plants may never need to be treated, especially if they are well-established and mature, or if they are planted specifically for wildlife.

For example, a sago palm, *Cycas revoluta*, may be heavily infested with scale insects. Insecticides are the most effective option for controlling this pest outbreak, and this plant does not provide food for wildlife. Therefore, there is little risk of pulling the trigger on an insecticide program.

In contrast, a scale insect outbreak on a crape myrtle may warrant further thought. Crape myrtle flowers are attractive to a suite of pollinators, and many of the most common insecticides are toxic to flower-visiting insects after application.

Therefore, insecticide selection, application method, application timing, and other management tactics are important considerations.

When in doubt, reach out to your local county Extension agent for guidance.

Scouting

An essential component of IPM is regularly scouting for pests. Make sure you know the key culprits to anticipate on the plants you're managing and how to differentiate between them and nonpest insects. Pest infestations are always easier to manage when caught early, so scouting regularly can save a lot of time and hassle, in addition to achieving any wildlife conservation goals. Look for the presence of pests and their symptoms, then assess the severity of the infestation and damage caused before deciding to use insecticides.

Insecticides And the Food Chain

Insecticides are powerful, useful tools to maintain healthy landscapes, but they also have the potential to be incredibly damaging to nonpest insects. Both lethal effects (killing the insect outright) and sublethal effects (impaired foraging or reproductive ability), are risks of insecticide application.

Beneficial insects like bees can be exposed to insecticides through direct contact with spray droplets in the air or on the plant or drinking contaminated nectar from treated plants. Although bees get the most attention, insects like butterflies and moths actually feed directly on plant tissues as larvae. It is important to consider these insect groups because they make up over 95% of the food diet for animals like birds.

Continued on Page 22



Sago palm:
Not a food source for wildlife



Coontie: Food source
for atala butterfly larvae



Crape myrtle: Nectar source
for many pollinators

Bees

STEWARDSHIP

Before you treat a plant infested with scales or other insects, weigh the consequences to the beneficial insects that might feed on that type of plant.



Butterflies



Moths

Leaf beetles and damage on coreopsis, a flowering plant that attracts pollinators and is a host plant for some caterpillars.



*Ornamental Plants,
Continued from Page 15*

NOT ALL insecticides behave the same way, either. There is a wide spectrum of risk associated with different compounds. Systemic insecticides, which are taken in by the plant and translocated to all parts of the plant, are among the most effective pest management products. However, depending on the product, systemic insecticides can pose the highest long-term risk to beneficial insects because they persist within the plant for months to years.

Contact-toxic insecticides can also harm beneficial insects, but just immediately after insecticide application until residues break down. Translaminar, or locally systemic insecticides, may provide a sweet spot for targeted pest suppression with reduced nontarget impacts. Again, know if your target plant flowers, if those flowers are attractive to pollinators, and if beneficial caterpillars feed on it before making an insecticide decision.

Final Thoughts

In summary, set up yourself and your landscapes for success by choosing the right plant for the right place, and weighing pest control alongside wildlife conservation. Know your plants and their associates, both pest and beneficial. Scout often to catch pests before they reach damaging numbers and make strategic, informed insecticide use decisions. Finally, stay tuned for more resources, educational opportunities, and guidelines from the University of Florida Entomology and Nematology Department to help guide you through these landscape management decisions. **PP**

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More resources associated with insect pest management and conservation in lawn and ornamental systems can be found at <https://dalelab.org>.



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