

# New Products for Common Summer Pests

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A difficulty in growing and managing ornamental plants is the number and diversity of arthropod pests. To make matters worse arthropod pests need attention nearly year round. From ambrosia beetles and cool season mites in early spring to caterpillars and, yes, more cool season mites in the fall, growers and landscape professional rarely get a break. In this article we will catch up on three pests that will keep you busy mid-summer.

Japanese beetles can make short work of ornamental trees and shrubs leading to dissatisfied clients and unsalable plants. No doubt by the time this is published you are already battling these voracious feeders. Unlike many pests we deal with Japanese beetles are big and easy to identify. Thus, monitoring with commercial Japanese beetle traps makes it easy to determine when beetles are active. Deciding if and when to spray comes down to plant susceptibility, the level of damage that can be tolerated, and beetle abundance in your area. Susceptible plants include roses, rosaceous trees and shrubs such as crab apple and cherry, lindens, crape-myrtle, and some 200 other plants. Thus, if these plants are featured prominently in a landscape that typically has high levels of beetle activity insecticide treatment is probably warranted. Likewise, nursery crops that need to be sound this season may also require insecticides to reduce the amount of damage incurred.

Before we get to chemical interventions to reduce damage it is important to clear up a couple myths about Japanese beetle management. First, research has shown that Japanese beetle traps are useful for monitoring purposes but will not reduce damage to landscape or nursery plants. So although it feels good to empty hundreds of beetles a day from that smelly plastic bag don't rely on it as a management tactic. Second, killing Japanese beetle grubs on a property will not reduce beetle abundance or damage on that property. Remember, these beetles are strong fliers that are attracted to plant cues and aggregation pheromones from great distances. If you have susceptible plants, beetles from next door or the other side of town will have no trouble finding them.

So what can you do? Traditional management has entailed weekly applications of carbaryl (Sevin) or pyrethroids such as bifenthrin. These products are highly toxic to natural enemies which can result in secondary pest outbreaks. In addition, weekly visits to a property in order to apply these chemicals is time consuming and expensive. Other products, primarily neonicotinoids, have been shown to give longer control via systemic activity and can be applied by drench or foliar sprays. For instance, a single imidacloprid drench can reduce defoliation to near zero which is comparable to weekly appli-



Figure 1. Japanese beetle adult. Photo by David Cappaert, MSU.

cations of carbaryl. Other systemic neonicotinoids include dinotefuran (Safari) and acetamiprid (Tri-Star). A complete list is available on an updated insect note about Japanese beetle biology and management at <http://www.ces.ncsu.edu/depts/ent/notes/O&T/flowers/note44/note44.html>.

Management of bagworms has several parallels to management of Japanese beetles. Like Japanese

beetles, bagworms are large and easy to identify so scouting and monitoring is a breeze. Bagworms are even easier because the adult female does not fly. She lays eggs within her bag and they hatch in the spring. Therefore, if you had bagworms on a plant last year and there are bags present this year, you are guaranteed 500-1000 bagworms per bag come spring. Thus, an ounce of prevention goes a long way with bagworms. Before eggs hatch in May or June the bags can be picked off to reduce or eliminate the population. Alternatively, bags can be monitored so baby caterpillars can be treated immediately upon emergence when they are small, easy to kill, and haven't defoliated your plants.

After reading this you may think back to plants on which you remember seeing bags over the winter or in early spring. Go check those plants and be prepared to take action. What complicates bagworm control is that they are protected from contact insecticides by a waterproof bag. Therefore, a product with translaminar or systemic activity would provide more opportunity for the caterpillars to ingest the toxins. Unfortunately, almost no systemic products, such as neonicotinoids, are labeled for caterpillars. However, new systemic product that just became available last year is Acelepryn (chlorantraniliprole) by Dupont. Acelepryn is unique in that it has an extremely low vertebrate toxicity. It also has less negative effect on beneficial insects than broad spectrum contact insecticides such as carbaryl and pyrethroids. It also has a unique mode of action that makes it useful in resistance management rotations. Acelepryn is labeled for use in landscapes but not nurseries. Other options for management of bagworms can be found on an updated insect note at <http://www.ces.ncsu.edu/depts/ent/notes/O&T/trees/ort081e/ort081e.htm>.

Of course the list of arthropod pests that could be active right now is pretty long. However, I would like to end by reminding everyone about spider mites. In a previous article (March/April 2009) we talked about an IPM approach to cool season mites. Now it is time for the two-spotted spider mite which loves it hot and dry.

Ornamental host plants include arborvitae, azalea, camellia, hollies, ligustrum, pittosporum, pyracantha, rose, and viburnum. They also are a pest of ornamental trees such as maple, elm, and redbud. Two-spotted spider mites cause stippling damage to

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Figure 2. Late instar bagworm.  
Photo by Pennsylvania Department of Conservation and Natural Resources.

leaves and needles which may drop prematurely. Deciduous plants have the opportunity to grow new undamaged leaves the following year. However, damage to leaves and needles of evergreens could be present for more than one season resulting in long term reduction in aesthetic quality.

If you notice mite damage be sure to confirm the presence of mites. Remember damage from cool season mites tends to show up in the summer when plants have grown and are stressed. However, the mites are long gone so applying pesticides will waste money and time. You can scout for mites by beating foliage on a paper plate to see if mites are present. If mites are present consider using a miticide rather than an insecticide that also kills mites such as bifenthrin (e.g. Talstar, Onyx). Insecticides will kill many natural enemies that would otherwise clean up the mites you miss (and you will miss some). This leaves a small population that will outbreak again in a week or two.

Recently a number of miticides have come on the market that target spider mites but preserve natural enemies including predatory mites. Many of these such as spiromesifen (Forbid, Judo), acequinocyl (Shuttle), and bifenazate (Floramite) give long residual control and kill egg, immature, and adult life stages. A complete list of products and more information on the biology and management of two-spotted spider mite can be found at <http://www.ces.ncsu.edu/depts/ent/notes/O&T/flow ers/note25/note25.html>.

These are just three of the many pests active in nurseries and landscapes at this time. However, they are also some of the most common and damaging pests of ornamental plants. For help with other pests, check the website <http://insect.ncsu.edu> for updated insect notes or contact me at [sdfrank@ncsu.edu](mailto:sdfrank@ncsu.edu).



Figure 3. Twospotted spider mites with webbing, shed skins, and eggs.  
Photo by David Cappaert, MSU.

Recommendations for the use of chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention or listing of commercial products does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products not mentioned. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label.



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