Halosulfuron and prodiamine crop safety; IGR vs. azalea lacebug

Research and News on the latest pest management techniques

GROWERTALKS MAGAZINE greenPROFIT MAGAZINE

WEDNESDAY, NOVEMBER 11, 2020

Pest Talks

COMING UP THIS WEEK:

Halosulfuron Crop Safety Summary
Prodiamine Crop Safety Summary
IGR vs. Azalea Lacebug
Spotted Lanternfly Webinar

Halosulfuron crop safety summary

IR-4 published its halosulfuron crop safety summary in late October. Halosulfuron or halosulfuron-methyl (WSSA 2) is the active ingredient in Prosedge and Sedgehammer. These post-emergent herbicides are registered for use on turf and around established woody ornamental plants in landscapes. I usually think of them as herbicides for nutsedges and kyllinga, but they're also registered for some broadleaf weeds, such as horsetail, pigweed and ragweed. Oddly, y'all won't see a list of tolerant ornamental plants when you examine the labels of Prosedge and Sedgehammer. It's clearly stated, however, the products should be applied only to ornamental plants that had been transplanted at least three months prior to treatment.

seed farms, sports fields, landscaped areas with established woody ornamentals, fairgrounds, race tracks, tennis courts, campgrounds and rights-of-way).

ACTIVE INGREDIENT:

Halosulfuron-methyl 75%
OTHER INGREDIENTS: 25%
TOTAL: 100%

KEEP OUT OF REACH OF CHILDREN

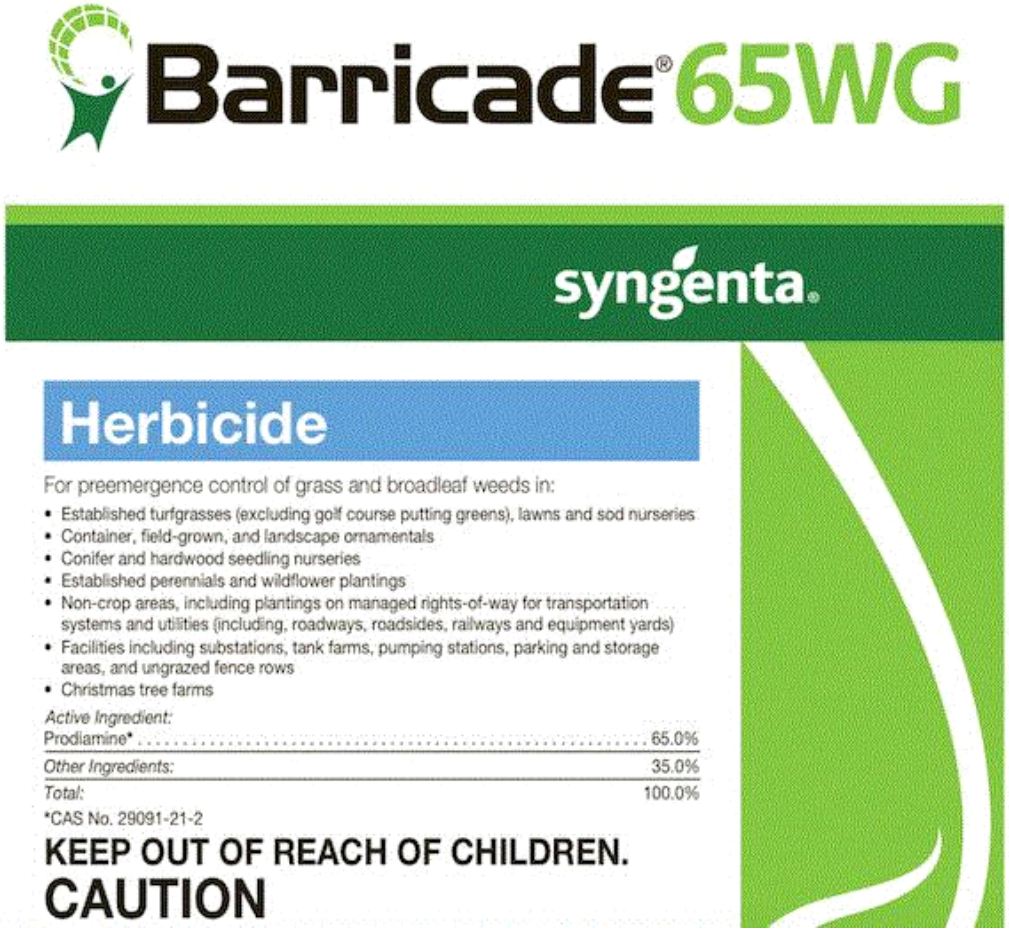
CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail)

IR-4 conducted 391 trials with products containing halosulfuron since 1995. Crop safety of halosulfuron, sprayed at one, two and four times the label rates, was evaluated on 137 in-ground or container-grown plant genera or species. Of these, 36 taxa exhibited no or minimal injury at all rates; these include crape myrtles, and several juniper, holly, oak and pine species. Some plant taxa exhibited no injury at the label rate, but showed injury at higher rates; these include maple, rhododendron, and several oak species. Twenty-four taxa exhibited injury even at the lowest label rates. Download a copy of the crop safety summary by clicking HERE, to see what taxa are on the list.

Prodiamine crop safety summary

IR-4 also released its prodiamine crop safety summary in late October. Prodiamine (WSSA 3) is one of the oldest pre-emergent herbicides that has been widely used for the control of annual grasses and some broadleaf weeds in turf, nurseries, landscapes and Christmas tree farms. Products that contain only prodiamine include Barricade, Prodiamine, Regalkade, and many more. There are also combination products, such as Gemini (isoxaben + prodiamine), Fuerte (flumioxazin + prodiamine) and Biathlon (oxyfluorfen + prodiamine). These herbicides come in various formulations—4FL, 4SC, 65WDG, 0.4G, etc.



Because of its long history, the crop safety evaluation of prodiamine has been conducted by IR-4 since 1977. There are 568 trials evaluating the crop safety of granular (G), wettable powder (WP), wettable dry granule (WDG) and emulsifiable concentrate (EC) formulations. Prodiamine WDG, WP or EC formulations exhibited no or minimal injury on 132 plant taxa. Twenty-three taxa exhibited some injury at higher label rates. Bugleweed, Pennsylvania sedge, blue holly, statice, petunia, Caucasian stonecrop, pansy, and zinnia exhibited significant injury and should not be exposed to prodiamine EC, WDG and WP.

Sixty plant taxa exhibited no injury after treatment with prodiamine G formulation. Only two taxa showed injury: pampas grass and Shasta daisy.

The crop safety summary reported that plants might outgrow small injury if the plants are allowed several weeks to months to recover.

Click HERE for a copy of the prodiamine crop safety summary.

IGR vs. azalea lacebug

It confused some of my wife's otherwise very learned relatives when I told them that I'm a university professor but I don't teach. With a puzzled look, they're probably thinking, "How can a professor not teach?" Perhaps I should just tell them I'm a slacker?

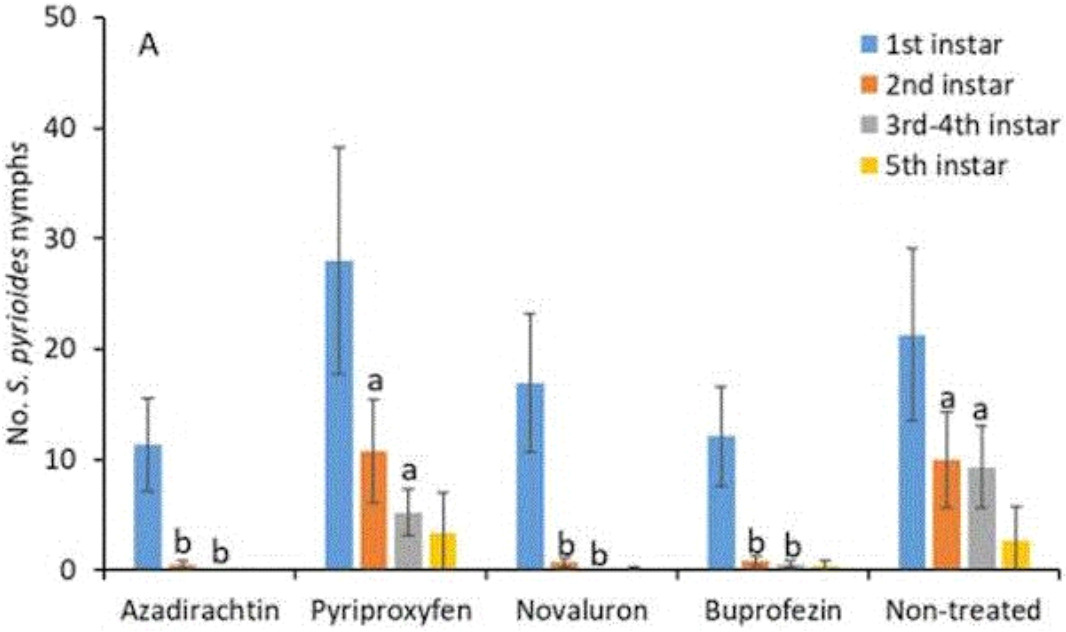
Anyhow, I do teach an undergraduate course on insects and diseases of turfgrass even though I don't have a teaching appointment. I'm in charge of organizing our departmental seminar this semester, which is perhaps the easiest teaching job I've had. Our seminar speaker last week was Shimat Joseph, who is an assistant professor at the University of Georgia (UGA), my extension counterpart in the state of Georgia, and a fellow graduate of the UGA Entomology program. A series of experiments on azalea lacebugs Shimat had presented in his seminar were very interesting and applicable to what we do. I'll share a couple of the most interesting ones here.

For those of you not familiar with the azalea lacebug, it's perhaps the most common pest of azaleas. If you want to see them, grow some azaleas under blazing hot sun. Boom! There they are! Feeding by azalea lacebugs, through their piercing-sucking mouthparts, causes stippling and necrosis on most azalea cultivars. Growers of azalea in the southern United States often use granular and spray applications of neonicotinoids and other systemic insecticides against azalea lacebugs. The most tricky life stage to manage is the egg, which is on the underside of the leaves, and covered (and thus protected) under a layer of black droppings produced by the females. Shimat conducted a series of studies with the goal of evaluating if insect growth regulators (IGR), specifically azadirachtin, buprofezin, novaluron and pyriproxyfen are effective tools for managing azalea lacebug eggs.

Nymphs and black droppings of azalea lacebugs. (Photo credit: James Castner, University of Florida)

In the first study, Shimat sprayed water and IGR solution on plants infested with eggs. Seven days later, Shimat counted the numbers of lacebug nymphs on the sprayed plants. Shimat found that the numbers of first-instar nymphs were not different statistically among the treatments, suggesting that the IGR didn't have direct influence on the viability of the eggs. But, the numbers of second- to fourth-instar nymphs were significantly reduced on plants treated with azadirachtin, buprofezin and novaluron, when compared to those on plants treated with water and pyriproxyfen. This result suggests that the residues of azadirachtin, buprofezin and novaluron were effective in killing the young nymphs, thus reducing the numbers of older nymphs. Azadirachtin, buprofezin and novaluron are, therefore, effective for managing azalea lacebugs.

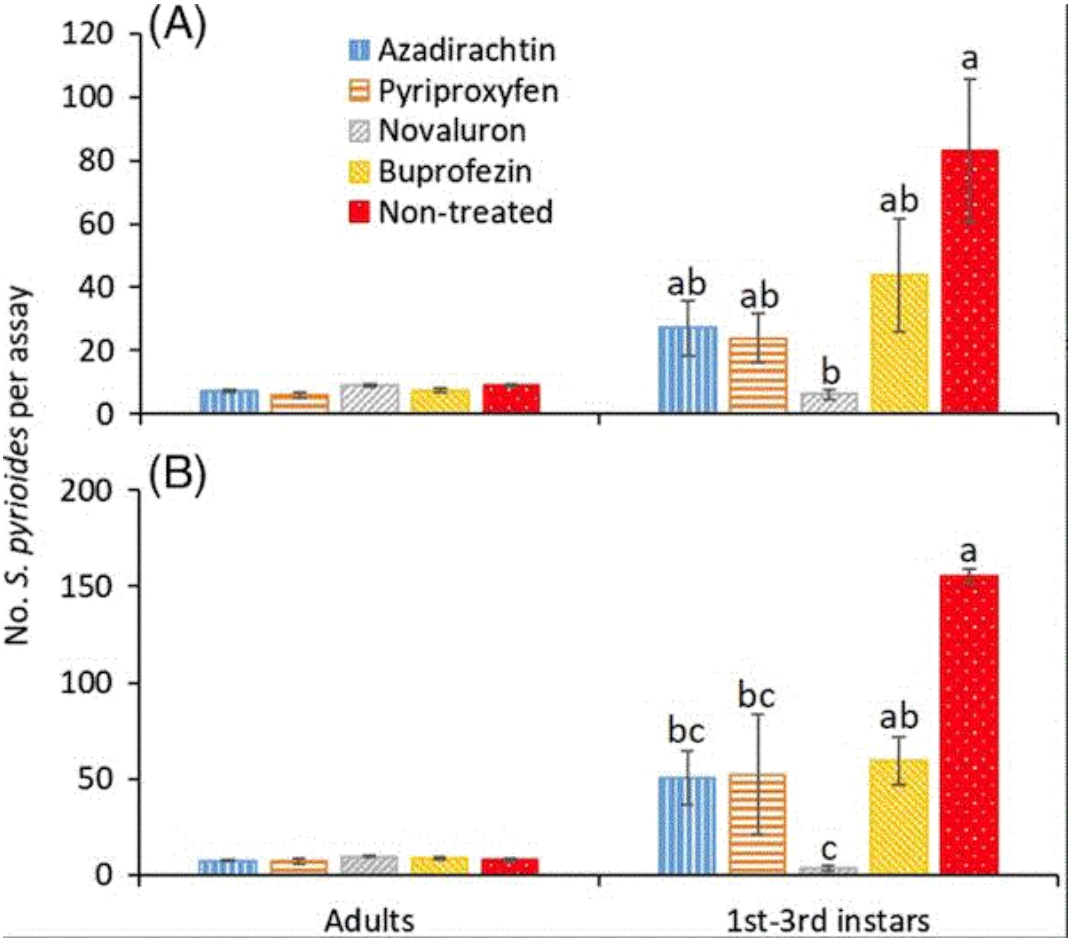
This study is published in the scientific journal *Insects*. Click HERE for a free copy.



Azadirachtin, buprofezin and novaluron were effective in reducing the numbers of azalea lacebug nymphs. (Source: Joseph 2019; *Insects* 10(7): 189.)

The second study looked specifically at whether exposure to IGR can reduce the number of offspring produced by female azalea lacebugs. Shimat sprayed water and IGR solutions directly on adult lacebugs, then he reintroduced them back to untreated plants. He checked on the population 21 days later, and found that the IGR didn't reduce adult numbers (which is not a surprise since IGR only reduces nymph survival), but azadirachtin, pyriproxyfen and (especially) novaluron significantly reduced the numbers of nymphs on the plants. Adults treated with buprofezin also produced fewer nymphs, but the difference was not statistically significant when compared to the untreated adults. This result suggests that azadirachtin, pyriproxyfen and novaluron sprays can reduce the numbers of nymphs the treated adult lacebugs produced.

The second study was published in *Pest Management Science*. Click HERE for a free copy.



Azadirachtin, novaluron and pyriproxyfen significantly reduced the numbers of offspring that treated adult azalea lacebugs produced. (Source: Joseph 2019; *Pest Management Science* 75(8): 2182-2187.)

Both studies point to the value of IGR, particularly novaluron (Pedestal), as effective management tools against the azalea lacebug. Not only did novaluron reduce the survival of nymphs, it also reduced the number of offspring produced by adults exposed to the solution directly or to dried residue. In fact, in an experiment I didn't talk about here, Shimat showed that novaluron was effective even when it's applied at one-fourth its label rate. I would be wary of reducing application rates, however, because I would want to make sure the insecticide is working at its best, and to not allow more lacebugs to survive a low dose, which can increase the chance of developing insecticide resistance.

Spotted lanternfly webinar

Spotted lanternfly (SLF) seems to be a hot topic on the news. In August, the Pennsylvania Department of Agriculture received 33,015 reported sightings of them through the end of July, which was a 500% increase compared to the same time last year. In late September, the Maine Department of Agriculture, Conservation and Forestry reported the detection of SLF egg masses on newly planted trees shipped in from Pennsylvania.

All these reports point to an expansion of SLF population and range. If y'all are getting any materials from the infested areas, you should have a close look and make sure they don't harbor any unwelcome "guests."

If you're looking for more information about SLF, particularly their management and impact on ornamental plants, you should sign up for a free webinar on the topic hosted by the Horticultural Research Institute (HRI) on November 17, 11 a.m. EST. The webinar, "Spotted lanternfly: Impacts and strategies for ornamental plants," will be presented by Brian Walsh of Pennsylvania State University Extension. Brian has been working with SLF ever since its introduction. He will be sharing his experience and perspectives on the status, impacts and management of SLF. Click HERE to register for the free webinar.

See y'all next time!

JC Chong
Professor of Entomology at Clemson University

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