



# Grasshoppers and RAATs? They're a great combination

By Scott Schell

Did grasshoppers strip your pastures and yards bare last summer?

Maybe you can use RAATs to manage them this year. I didn't misspell and mean the beady-eyed rodents. I am referring to Reduced Agent and Area Treatments, an integrated pest management (IPM) strategy developed at the University of Wyoming to provide a low cost, effective means of reducing grasshopper infestations to non-damaging levels on rangeland and around farmsteads.

## Insecticides Reduced

RAATs is a simple concept, in which the rate of insecticide is reduced from label levels suitable for adult grasshoppers to lower rates that work well on the little nymphs. The amount of insecticide

is also reduced as treated swaths are alternated with untreated swaths to take advantage of the grasshopper's mobility.

RAATs work through *chemical control*, meaning grasshoppers are killed in treated swaths and as they move out of untreated swaths, and *conservation biological control*, which allows insect predators and parasites preserved in untreated swaths to continue to prey on grasshoppers.

This integrated pest management (IPM) approach can reduce the cost of control and the amount of insecticide as compared to traditional blanket treatments by more than 50 percent. Eradication of grasshoppers is not the goal of RAATs as leaving some grasshoppers after treatment as a food source for other animals keeps the environment healthier and more in balance in the long-term. Less insecticide in the environment lowers the risk to non-target species like fish, wildlife, and humans.

The untreated swaths provide a refuge for organisms with lower mobility than grasshoppers, and even those insects that move into



the treated swaths will be largely unaffected unless they feed on treated foliage.

## Treat the Nymphs

The key to success with RAATs is determining when pest grasshoppers start to hatch in the spring and then treating them while the nymphs are still less than ½-inch long. RAATs can be done by air, ground, and with sprays

and bait. Of the current products registered for grasshopper control, Dimilin 2L has ideal properties for successful RAATs programs and reducing impacts on non-target animals. It only kills immature insects that eat the treated foliage by interfering with the production of chitin. Chitin is only found in insects and other arthropod exoskeletons.

Dimilin 2L is the least toxic of currently registered compounds and is applied at the lowest dose to take advantage of grasshopper nymphs' gluttony.

Early planning, organization, and survey is critical to preventing the devastating late-summer damage grasshoppers can inflict.

Joining with neighbors and visiting with local University of Wyoming Cooperative Extension Service (UW CES) educators, county weed and pest control district officials, and licensed applicators about planning and applying RAATs IPM strategies will be the best way to prevent grasshopper problems from happening.

UW CES county contact information is at <http://ces.uwyo.edu/Counties.asp>.

Wyoming weed and pest control district contact information is at [www.wyoweed.org/addresses.html](http://www.wyoweed.org/addresses.html).

Scott Schell is the University of Wyoming assistant extension entomologist and can be reached at (307) 766-2508 or [sschell@uwyo.edu](mailto:sschell@uwyo.edu).

**For more information,  
please visit:**

[www.uwyo.edu/grasshopper/](http://www.uwyo.edu/grasshopper/)  
[www.uwyo.edu/grasshopper  
support/Html\\_pages/raats.htm](http://www.uwyo.edu/grasshopper/support/Html_pages/raats.htm)

**Disclaimer:** This information is provided as a public service and for educational purposes only. All efforts have been made to ensure the material is accurate and up-to-date; however, the University of Wyoming Cooperative Extension Service cannot be held responsible for any circumstances resulting from its use, unavailability, or possible inaccuracy. Also, references to any specific commercial products, process, service, manufacturer, or company does not constitute its endorsement or recommendation.

**Originally published in the Barnyards & Backyards April 2010 newspaper insert. Found at <http://insuringsuccess.org>**