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Greenbug Management in Winter Wheat with Glance 'n Go: Using the Henson Rule ...

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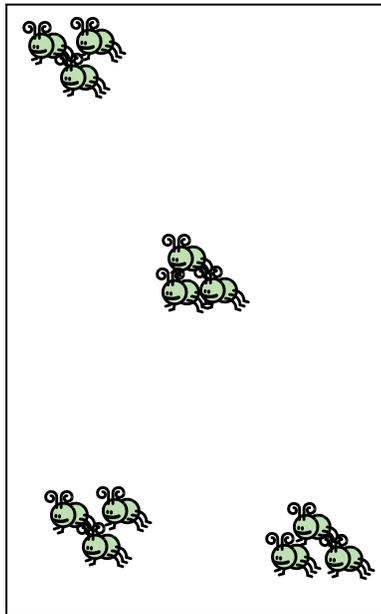
Aaron Henson, Agricultural Extension educator in Tillman county has been checking fields for greenbug infestations recently, and began to think about the differences in sampling decisions that he was seeing between the spring and fall editions of our Glance 'n Go system for greenbug sampling. He saw that there were big differences in the number of infested tillers that were needed to make a treatment decision between the fall form and the spring form. Because much of the wheat had emerged so late

due to dry soil conditions, he thought that most fields resembled a typical field in October versus January (i.e. small plants that had just emerged). Logically then, he thought it would be more appropriate to use the Fall Edition of Glance 'n Go compared to the Spring form.

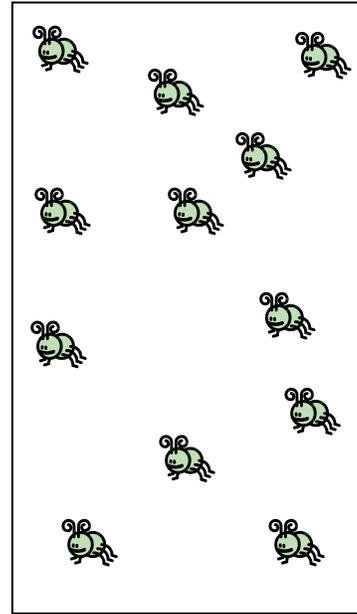
I called and talked with Aaron. After some discussion, I agreed that because the wheat plants were so small, it would be more appropriate to use a Fall form to sample, even though the threshold is the same. Now I would like to explain the rationale behind what I am now calling "The Henson Rule".

Glance 'n Go has a fall and spring edition because, through our research, we found that aphid distribution patterns are different in the spring compared to fall. Why? Because, in the fall, greenbugs become established by migrating winged aphids. When they land, they begin to produce young that live on the same plant as their mother. In spring, greenbugs increase from two sources, migrating aphids and over-wintered aphids that arrived in the fall. Our research showed that their distribution pattern in spring is more uniform, whereas fall distribution patterns are more clumped (See Figure). This means that there are more infested tillers the spring, even though the actual numbers in the field are the same in both fields.

Typical “Fall” field



Typical “Spring” field



The “Henson Rule” is applied when a field is planted late, or when it does not emerge until very late (typical of some fields this year). The only aphids that would be in the field are ones that migrated in during a warm spell. Thus, their spacing pattern would be more clumped, like you would normally see in the fall.

What is the Henson Rule? It states: if the field has very small plants (2-6 leaves) in January and February, use the fall Glance ‘n Go form to sample and make a decision to treat. Remember, the actual treatment threshold is the same; it is just that the spacing pattern is different.

A treatment threshold can be estimated by accessing the Greenbug Expert System which is located on the Entomology and Plant Pathology website at <http://entopl.okstate.edu/>. Just click on “Agricultural Models”, then Cereal Aphids Pest Management, and you will find yourself in the Greenbug Expert System. By following some simple instructions, you can use the Economic Threshold Calculator to determine your treatment threshold.

Before choosing an insecticide, consider the effectiveness, cost of application and grazing restrictions that apply for each chemical. Products registered for greenbug control include Dimethoate 4E at 0.5 to 0.75 pints per acre, Lorsban 4E at 0.5 to 1.0 pints per acre, methyl parathion 4EC at 0.5 to 1.5 pints per acre Mustang MAX at 3.2 to 4 fluid ounces per acre, Proaxis at 3.84 fluid ounces per acre, Prolex at 1.54 fl oz per acre and Warrior at 3.84 fluid ounces per acre. All of these registered products were tested in my greenbug insecticide screening trials over the past few years and were effective at controlling greenbugs.

Grazing and pre-harvest restrictions are as follows: Lorsban - 14 days for grazing, 28 days for harvest; dimethoate - 14 days for grazing, 35 days for harvest; methyl parathion - 15 days for grazing or harvest; Mustang MAX - 14 days for grazing or harvest; Proaxis/Prolex - 30 days for grazing or harvest; Warrior – 7 days for grazing, 30 days for harvest.

It is very important to follow these grazing restrictions. In 1994, several cattle poisonings occurred in Western Oklahoma that were associated with dimethoate applications. In most cases, the poisonings occurred because the cattle were released into the field early, while the dimethoate residues were still high. However, in a few cases, the residual dimethoate remained

at higher than desirable levels for use as feed, even after the grazing restriction had passed. Observations suggested that dimethoate did not degrade as quickly as expected under that set of field conditions (dry and cold, with plants under extreme water stress). The best way to avoid cattle poisonings is to follow these steps:

- spray only when greenbugs exceed treatment thresholds
- apply at the lowest labeled rate to obtain adequate control
- make sure spray equipment is calibrated and in proper working order
- obey grazing restrictions
- use something other than dimethoate if wheat plants are under extreme water stress and temperatures are predicted to remain cold for a long time period.

A final reminder is to **“always read and follow the label for application directions and use restrictions”**.

Dr. Richard Grantham
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