

Analysis of Carbon and Nitrogen for Natal Host Determination of *Lygus lineolaris*

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INTRODUCTION:

Tarnished plant bug *Lygus lineolaris* is the most damaging insect pest of cotton in the mid south. Economic damage is typically caused by direct feeding on developing flower buds, flowers, or immature bolls (Bariola 1969). The primary control tactic for tarnished plant bug in cotton is use of foliar applications of synthetic insecticides. Tarnished plant bug control ranged from \$18-57 per acre, in part because of their abundance and widespread development of resistance to various classes of insecticides. Chemical control had become more difficult for this pest and management efforts became focused on plant bug populations that were developing on non-cotton host. These efforts required knowledge of the primary host plants of tarnished plant bug as well as plant distribution across the landscape. Estimating the most important plant host of this insect pest was challenging because of difficulty associated with sampling inability to compare sample data from one plant host to another, and the time and energy required to collect data.

MATERIALS AND METHODS:

1. Nymphs
2. Mustard Blooms
3. Seed pods
4. Incubator

We collected late instar nymphs from mustard plots growing on the SIMRU research farm (4th/5th) and the nymphs were then placed on mustard blooms and seed pods brought back to the lab. The nymphs were reared on the mustard plant material until the nymphs reached the adult stage. They were removed from the mustard and frozen at -80 degrees Celsius for carbon nitrogen analysis later.



Tarnished plant bug nymph. Copyright Bugwood.org



Mustard Crop. Photo copyright Howard F. Schwartz, Colorado State University, Bugwood.org

RESULTS AND DISCUSSION:

Due to the fact that the tarnished plant bug is the major pest of cotton, analytical techniques useful to identify the origin of adults that move into cotton fields are important in a effort to utilize control tactics outside of cotton. Bugs collected this summer will be analyzed for carbon/nitrogen analysis during the upcoming fall.

REFERENCES:

Jackson, R.E., Snodgrass, G.L., Allen, K.C., Perera, O.P., Price, L. 2012. Analysis of Carbon and Nitrogen Isotopes for Natal Determination of Tarnished Plant Bug (Hemiptera: Miridae) Adults. *Southwestern Entomologist*. 37 02: 123, 124, 127

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