

PLINAZOLIN® technology

# For Management of Foliar Pests in Bulb Vegetables, Cotton, Peanuts and Soybeans

Technical Overview

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# What is the Technology?

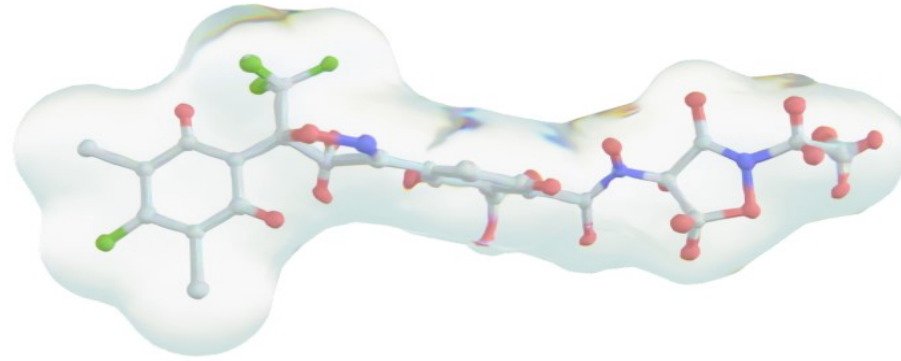
PLINAZOLIN<sup>®</sup> technology is the trademark of a new active ingredient from Syngenta. The active ingredient, isocycloseram, is an insecticide that will offer a new mode of action and will protect against a broad spectrum of agricultural pests, including mites, thrips, true bugs, beetles, certain lepidopteran pests, as well as other insect pests.

It is anticipated to receive registration for use in numerous crops and crop groups.

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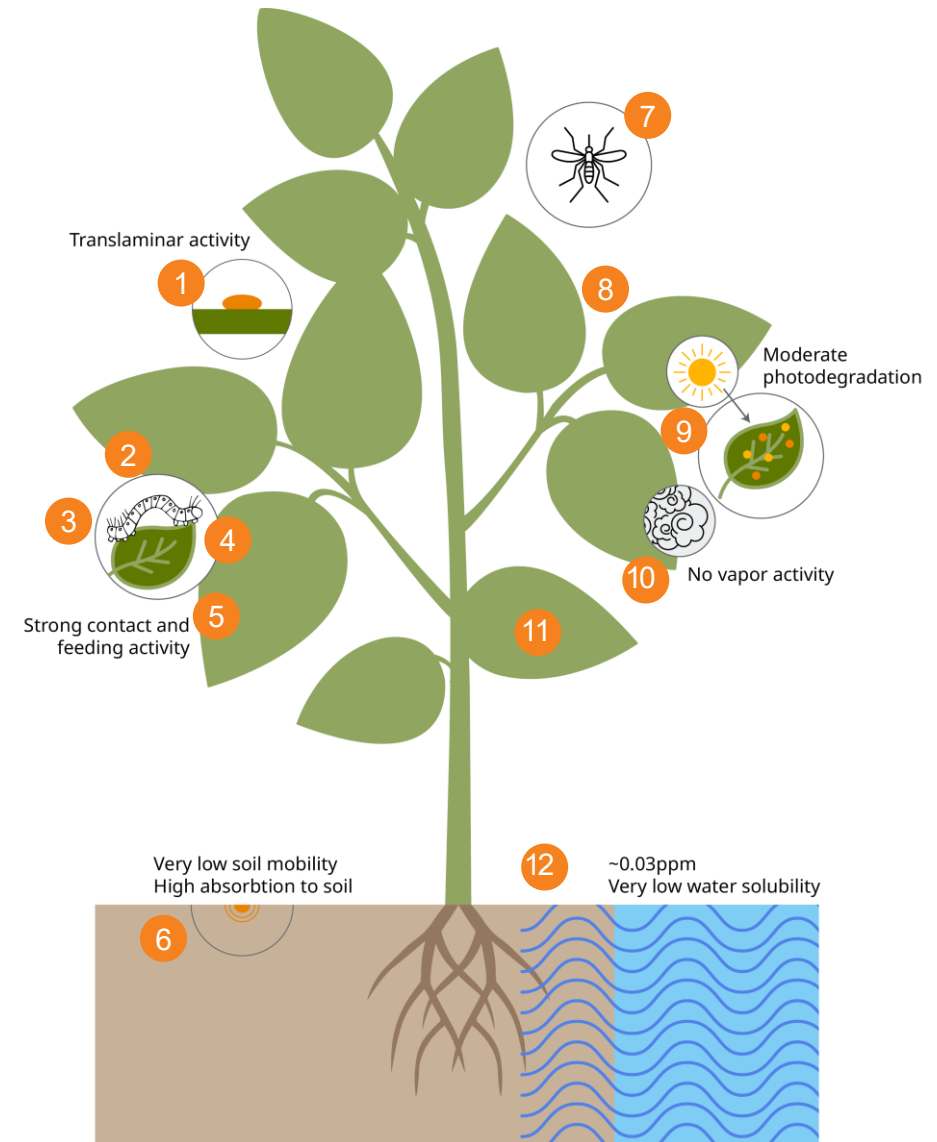
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# Summary of Properties

1. Stays on leaf surface
  - Some translaminar movement
2. Contact and ingestion
  - Acts via contact as well as via ingestion
3. New mode of action
  - Resistance breaker IRAC Group 30
4. Rapid feeding cessation
  - Insect mortality in 1-4 days
5. Control
  - Reliable residual effect
6. Protection in the root zone
  - Strong binding to soil particles
7. Broad spectrum
  - Controls many different insects and mites
8. Crop safety
  - None of the formulations showed phytotoxicity
9. UV stability
  - Slow degradation on the leaf surface
10. Low volatility
  - No vapor effect
11. Resist rain washing
  - All formulations stick well to leaf and are not washed off
12. Low water solubility
  - No systemic uptake into the roots or movement within the leaf when applied to the foliage



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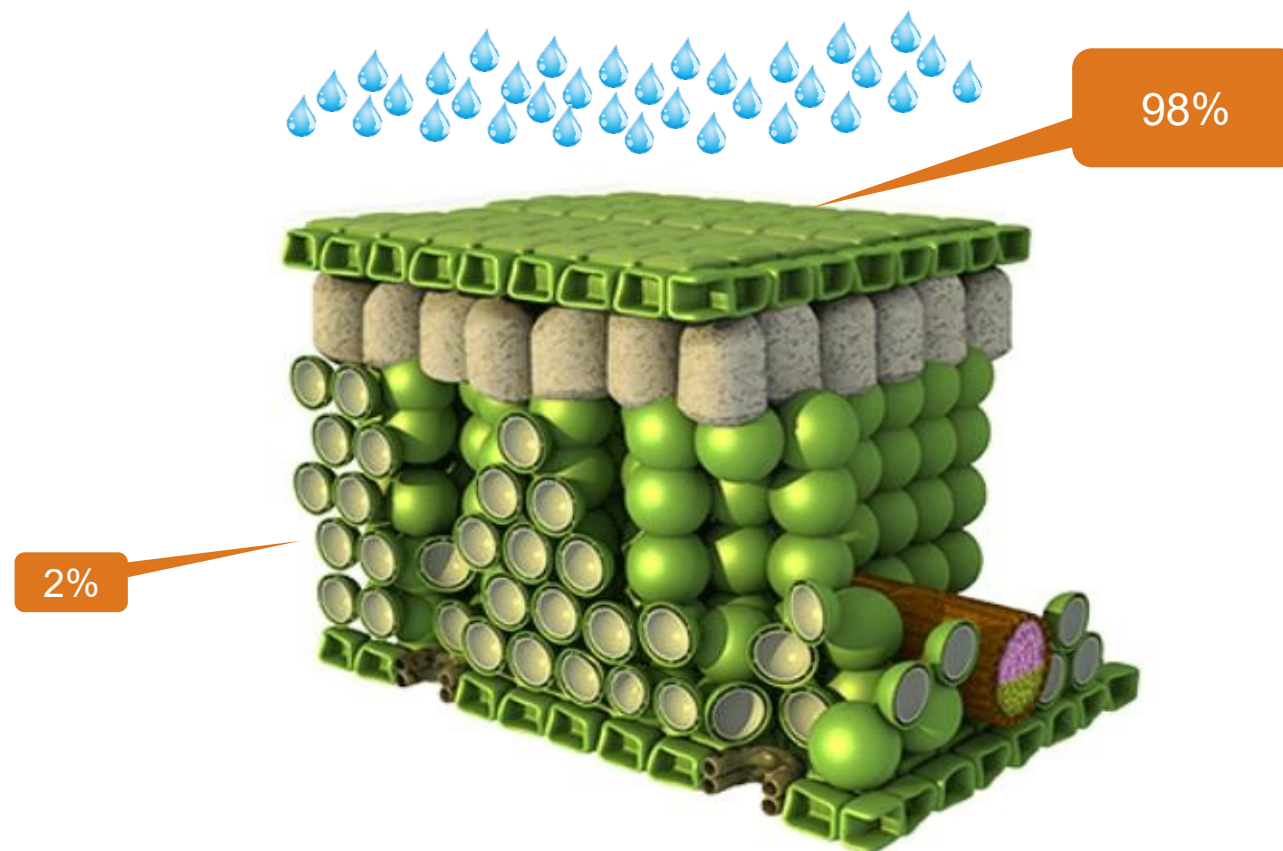
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# Properties of PLINAZOLIN Technology

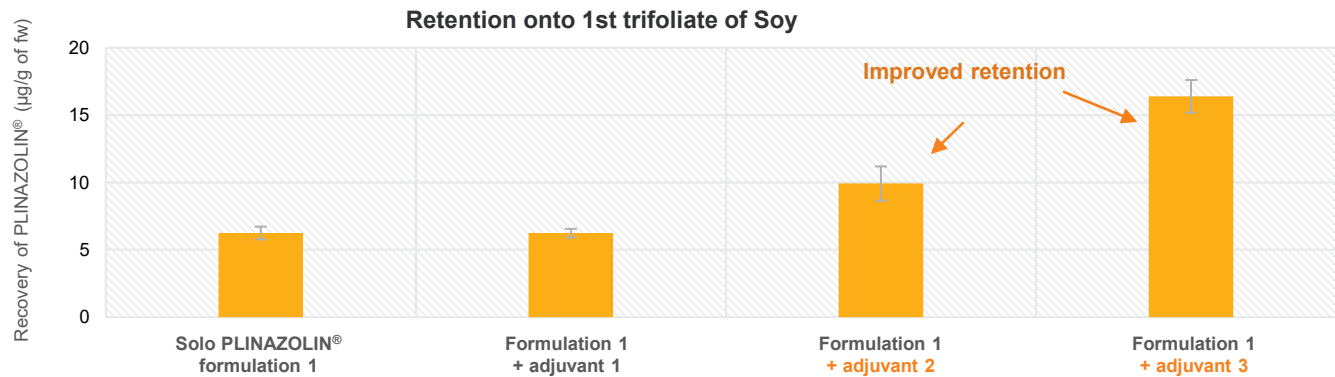
## Product stays on the leaf surface

- Low penetration into the leaf
  - 98% remains on the leaf surface
  - Deposit remains on surface for several weeks
  - Some translaminar movement - effect on mites
  - No phytotoxicity reported in trials
- UV stability
  - Long residual effect
- Adjuvants
  - Improved leaf retention and uptake
- Rainfastness



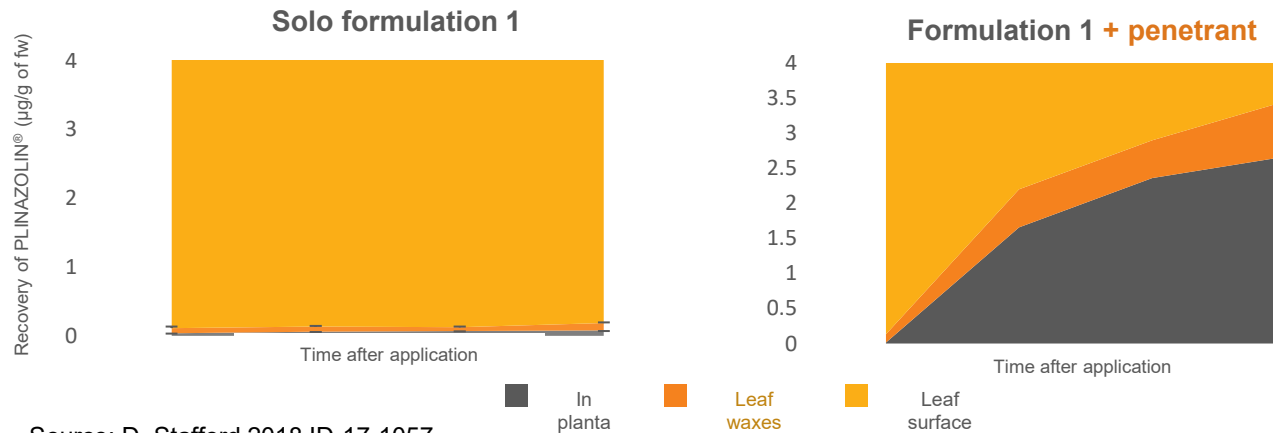
# Retention and Uptake Can Be Improved Through Optimal Adjuvant Partnering

Improved retention



Tank mixing with optimal adjuvant partners can improve the retention and coverage on waxy leaf surfaces

Improved uptake



Tank mixing with a penetrant can improve the uptake into the leaf, improving control of sucking pests (e.g. mites)

Source: D. Stafford 2018 ID-17-1057

# Product Attributes

- Active ingredient: Isocycloseram
- Chemical class: Isoxazoline
- MOA classification: Group 30
- Proposed signal word: Caution
- Proposed REI: 12 hours
- Formulation type: Soluble concentrate (SC)
- Formulation concentrations: 3.33 lbs ai/gal (400 g ai/l)



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# Regulatory Status

- Submitted to the U.S. EPA and Canada's PMRA on June 24, 2021 (joint submission)
- Received reduced risk status for U.S. registration application
- **PLINAZOLIN® technology is not currently approved by the U.S. EPA**
- Concurrent submission to the state of California
- State registrations to follow federal registration

\*A reduced-risk pesticide use is defined as one which "may reasonably be expected to accomplish one or more of the following: (1) reduces pesticide risks to human health; (2) reduces pesticide risks to non-target organisms; (3) reduces the potential for contamination of valued, environmental resources, or (4) broadens adoption of IPM or makes it more effective. PLINAZOLIN® technology qualifies under one or more of the above criteria.



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# COTTON

## Crop Subgroup 20C Proposed Directions For Use\*



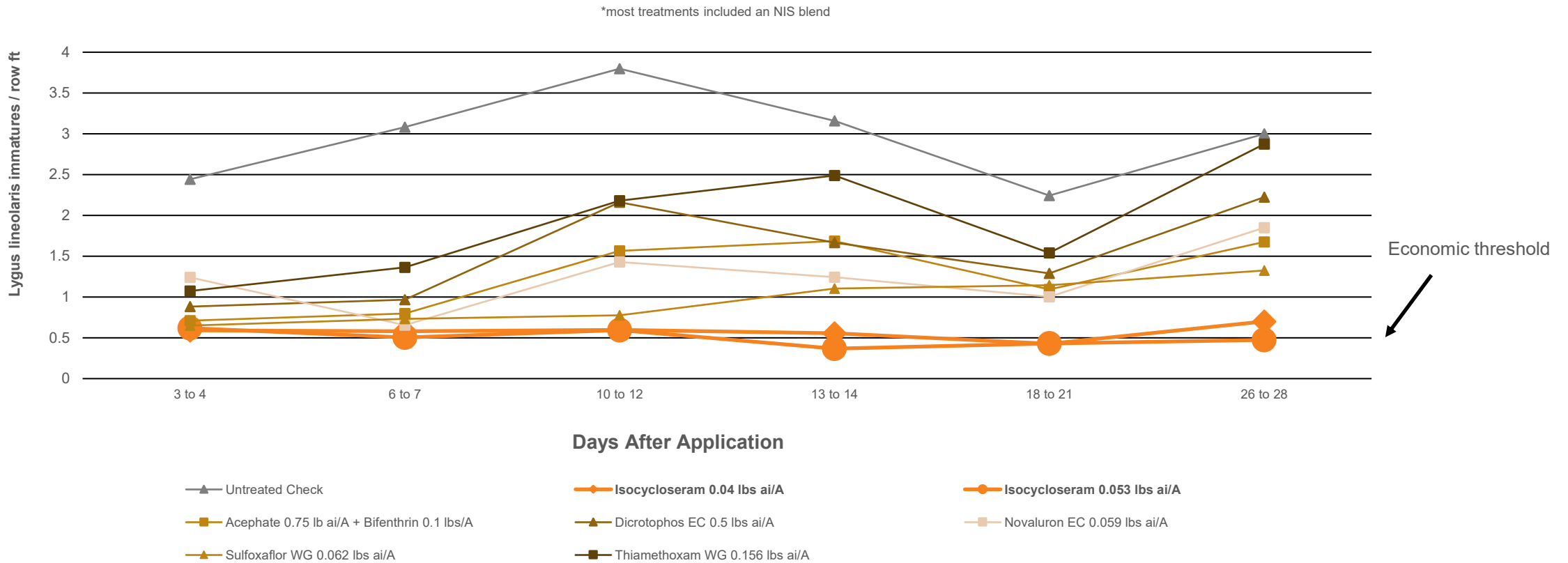
7.5 Cotton, Crop Subgroup 20C			
Crops (Including all cultivars, varieties, and/or hybrids of these)			
Cotton			
Target Pest	Rate (fl oz/A)	Application Timing	Use Directions
Cotton flea hopper Spider mites Tobacco thrips	1.1 – 2.5	Time applications to the most susceptible insect or mite pest life-stage at locally determined action threshold before populations reach damaging levels.  For <b>spider mite</b> control, apply when spider mites are first observed.  For <b>thrips</b> control, begin making applications when populations are low.	Under high pest populations or when using aerial application, apply a higher rate within the labeled rate range.
Brown stink bug Clouded plant bug Green stink bug Southern green stink bug Tarnished plant bug ( <i>Lygus lineolaris</i> ) Western tarnished plant bug ( <i>Lygus hesperus</i> )	1.6 – 2.5		Apply this product, by ground or air, diluted in a minimum volume of 5 gal/A.  Under conditions such as high pest populations, dense foliage, or adverse application conditions (such as high temperatures), use a greater volume of water to ensure adequate coverage.  For best control, apply A21550 CP with ground application equipment. With aerial application, the resulting level and duration of control could be less than with ground application.

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# Tarnished Plant Bug (*Lygus sp.*) in Cotton



<sup>1</sup>Averaged across 4 trials: USSB010252019 (MS); USSB011092019 (MS); USSE013322019 (AR); USSG014512019 (TN)

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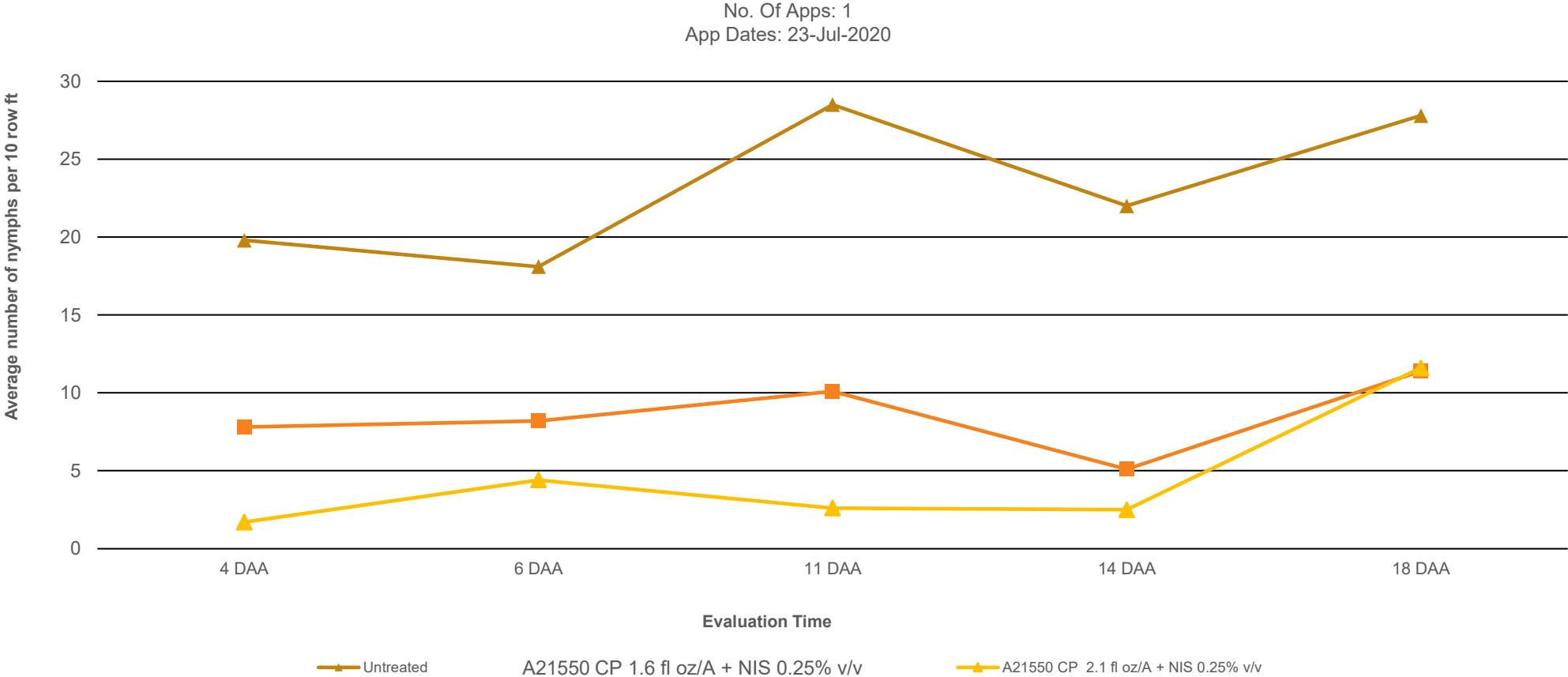
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# Tarnished Plant Bug in Cotton

*Lygus lineolaris* on upland cotton | Location: Glendora, MS | External Cooperator Trial : USSB011042020  
Average number of nymphs - Number per 10 ft



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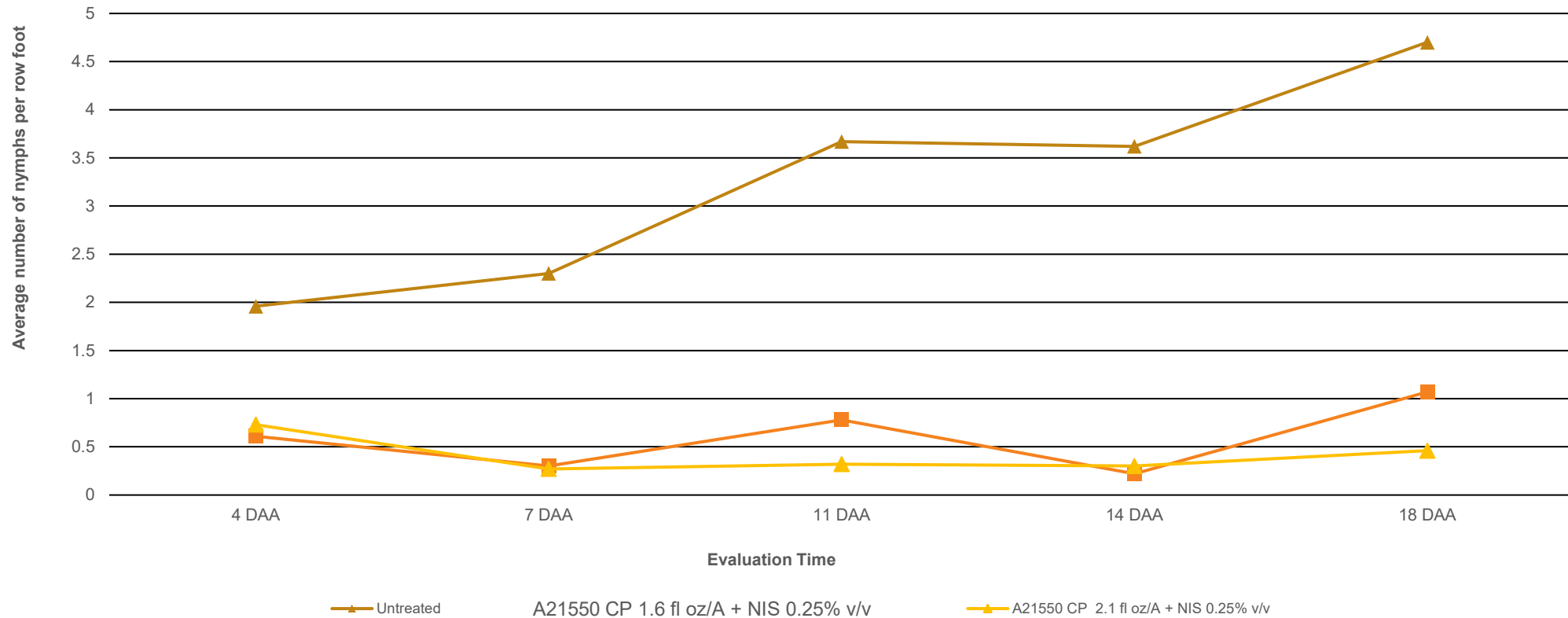
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# Tarnished Plant Bug in Cotton

*Lygus lineolaris* on Cotton | Location: Marianna, AR | External Cooperator Trial: USSE014312020  
Average number of nymphs - Number per 1 row foot

No. Of Apps: 1  
App Dates: 16-Jul-2020



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# Tarnished Plant Bug in Cotton



Untreated



A21550 CP

Sales Support Trial: Syng PB – AR 2022

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**Plinazolin® Technology in Cotton - 2023**  
**Tarnished Plant Bug and Spider Mite Control**  
**Portageville, MO – Dr. Chase Floyd, MU Delta Research Center**



**Competitor, 2.0 oz 7/11 and 7/28**  
**1400 Lbs. Lint/A**



**Untreated Check\***  
**850 Lbs. Lint/A**



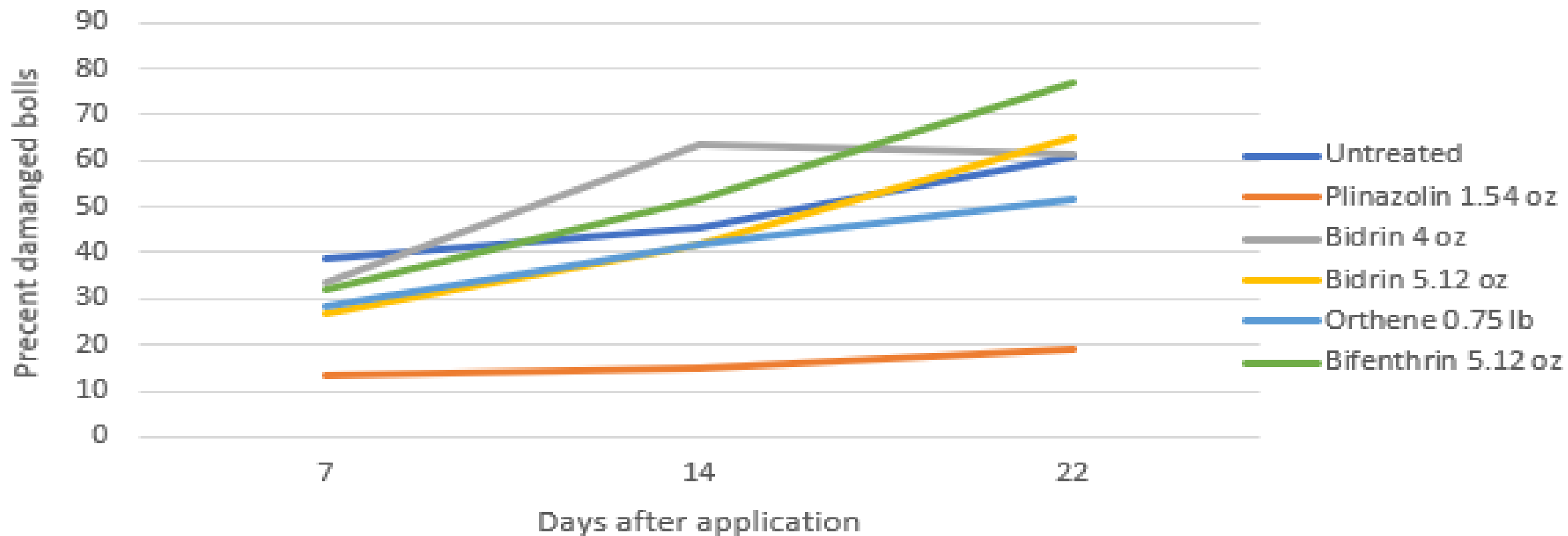
**ISM-555, 2.0 oz 7/11 and 7/28**  
**1650 Lbs. Lint/A**

\* No blooming TPB applications. PLINAZOLIN technology is not currently registered for sale or use in the U.S. and is not being offered for sale. DP 2038 B3XF Cotton

# Stinkbug control in cotton with Plinazolin Technology

*Scott Graham, cooperator*

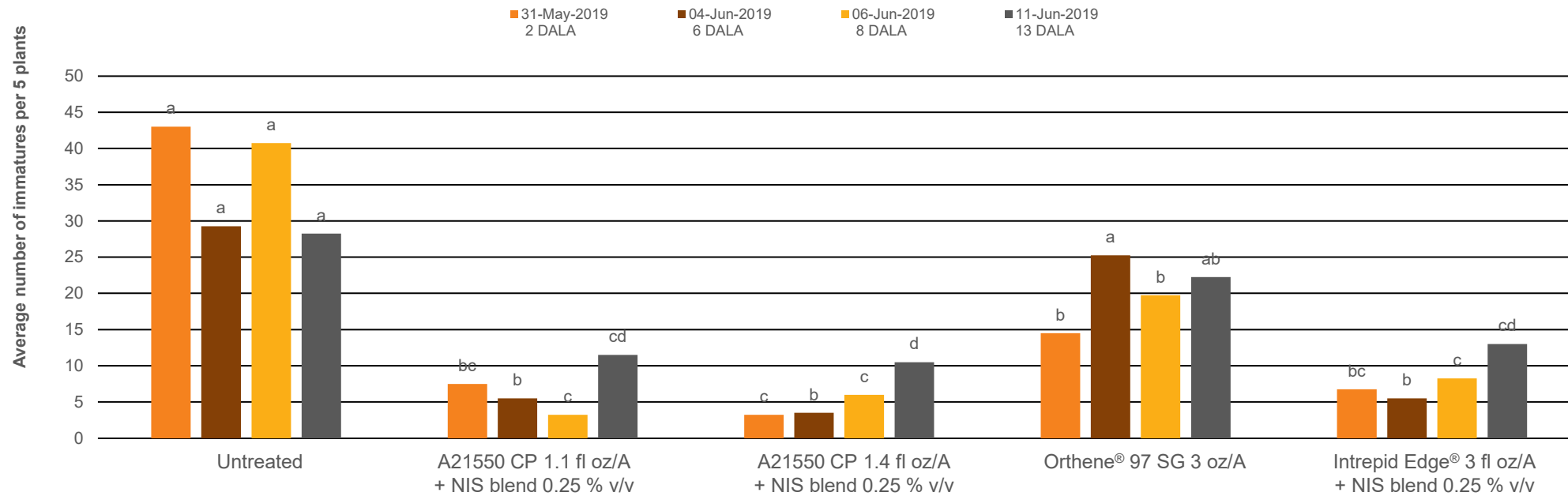
*Prattville, AL*



# Tobacco Thrips in Cotton

*Frankliniella fusca* on Cotton | Location: Jackson, TN | External Cooperator Trial: USSG014502019  
**Average number of immatures - Number per 5 plants**

No. Of Apps: 1  
 App Dates: 29-May-2019



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# Soybean

## Proposed Directions For Use\* (cont.)



7.11 Soybean			
Target Pest	Rate (fl oz/A)	Application Timing	Use Directions
Redbanded stink bug  <b>Suppression:</b> Corn earworm Japanese beetle (adult)	2.1 – 2.5	Time applications to the most susceptible insect or mite pest life-stage at locally determined action threshold before populations reach damaging levels.	<p>Under conditions such as high pest populations, dense foliage, or adverse application conditions (such as high temperatures), use a greater volume of water to ensure adequate coverage.</p> <p>For best control, apply A21550 CP with ground application equipment. With aerial application, the resulting level and duration of control could be less than with ground application.</p>

\*Registration is currently pending at EPA. Proposed DFUs are subject to change prior to approval.

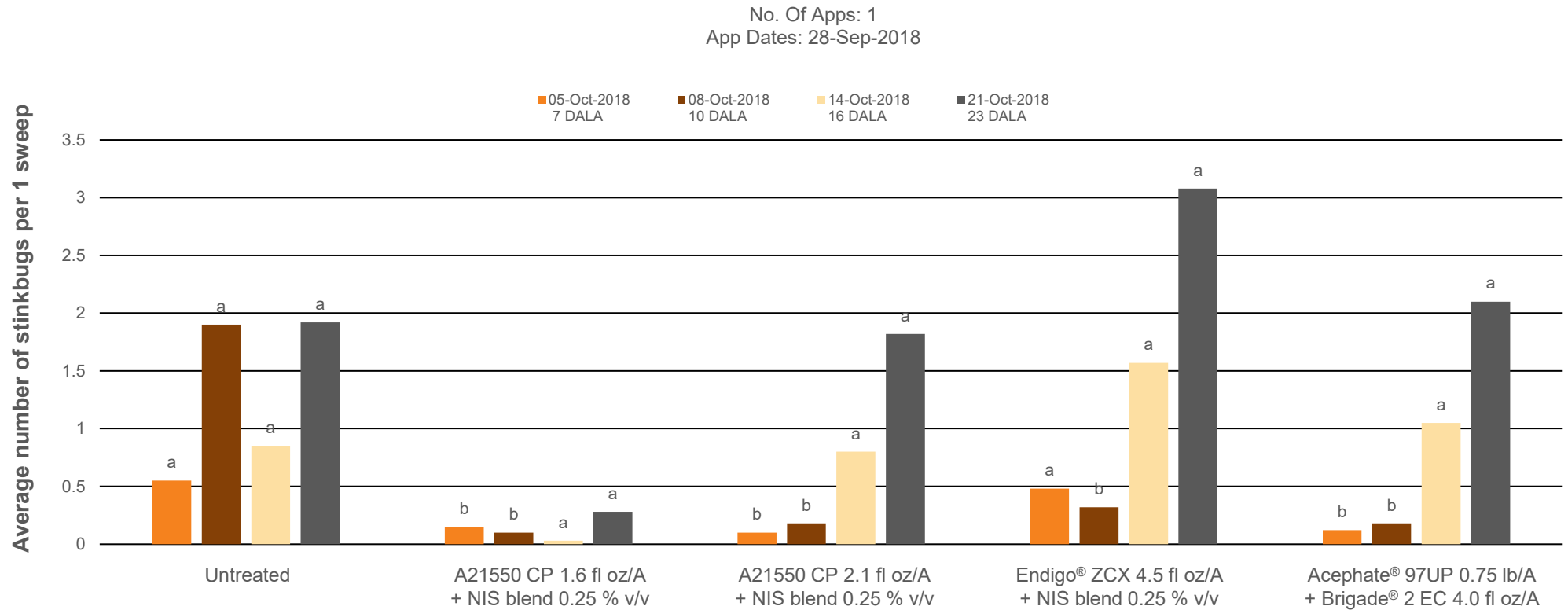
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# Red Banded Stink Bug (Adults + Nymphs) in Soybean

*Piezodorus guildinii* in soybean | Location: Louisiana | Internal Syngenta Trial: USSD017032018  
 Average number of stink bugs (adults+nymphs) – Number per 1 sweep



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