Sugarcane Aphid: Insecticides and Best Management Practices

Sugarcane Aphid Update
Weslaco, TX
April 12, 2016

Robert Bowling, Michael Brewer, John Gordy, and Stephen Biles
OUTLINE:

• Occurrence
• Adjuvants
• Insecticide Efficacy
• BMP
  • Thresholds
  • Decision Making Tool
2015 Sugarcane Aphid, *Melanaphis sacchari*, Occurrence on Sorghum and Johnsongrass
September 30, 2015

At Risk in the U.S.A.:

- 97% (7,405,000 acres) of the sorghum acres
- 98% (560,253,000 bushels) of the total sorghum production

2013:
- 4 States
- 38 Counties

2014:
- 12 States
- 312 Counties

2015:
- 17 States
- 417 Counties

Below threshold (<50 SCA per leaf)

At or above threshold (50 to 125 SCA per leaf)
Sugarcane Aphid Adjuvant Trial - TRANSFORM
Sinton, Texas 2015
Cooperator: Charles Ring

Transform @ 0.5 oz/ac
13 GPA
Sugarcane Aphid Adjuvant Trial - **SIVANTO**
Sinton, Texas 2015
Cooperator: Charles Ring

Pretreatment
7-DAT
14DAT

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Sivanto @ 3.0 oz/ac
13 GPA
Aphids in Transform treatment controlled. No injury to head.

Heads 50% pollen shed when test initiated. Aphids in head when test initiated. Honeydew interfered with pollination. Note heavy sooty mold on head.

56% Yield Reduction
Insecticide Efficacy
Sugarcane Aphid Insecticide Efficacy Trial
Sinton, Texas 2015
Cooperator: Charles Ring

No. Aphids/Leaf

Pretreatment 7-DAT 14DAT

Sivanto (4 oz/A) Sivanto (7 oz/A) Transform (1 oz/A) Centric (2 oz/A) Nufos (1 qt/A) Baythroid (2.4 oz/A) UTC
Sugarcane Aphid Insecticide Efficacy Trial
Harvest - Yield
Sinton, Texas 2015
Cooperator: Charles Ring

Yield (lbs/A)

Sivanto (4 oz/A)
Sivanto (7 oz/A)
Transform (1 oz/A)
Centric (2.0 oz/A)
Nufos (1 qt/A)
Baythroid (2.4 oz/A)
UTC
Don’t become complacent in 2016!

Transform Treatment
No apparent aphid injury

Untreated Check
Severe plant injury caused by SCA
Delayed maturity
Sugarcane Aphid Insecticide Efficacy Trial
Rosenberg, Texas 2015
Average No. of Aphids per Leaf
Cooperator: Mark Wleczyk

No. Aphids/Leaf
Threshold exceeded
Follow-up trt needed

Transform (1 oz/A)  Sivanto (4 oz/A)  Endigo (5 oz/A)  Baythroid (2.4 oz/A)  UTC

Threshold exceeded
Follow-up trt needed
Sugarcane Aphid Insecticide Efficacy Trial
Rosenberg, Texas 2015
Cooperator: Mark Wleczyk

UTC – no winged aphids – mix of instars

Sivanto – Winged aphids – first instar SCA
Sugarcane Aphid Insecticide Efficacy Trial
Rosenberg, Texas 2015
Cooperator: Mark Wleczyk

Treatment

43 Days Post Treatment with a single application of each insecticide!
SCA Insecticide
Efficacy Trial
Rosenberg TX
October 20, 2015
43 DPT!
Mark Wleczyk
• Label is the same as previous 2 years with one exception
  ▪ \( \leq 3 \text{ days prior to bloom until seed set} \)

• Time frame?
  ▪ Bloom occurs 5 to 7 days after panicle exertion
  ▪ Lasts 5 to 7 days
  ▪ When is seed set?
  ▪ Seed is set \( \sim 10 \text{ days after flowering (kernels reach their maximum size)} \)
  ▪ Window is \( \sim 2 \text{ to 3 weeks} \)
Best Management Practices:
Sugarcane Aphid Threshold
- 50 to 125 Aphids per leaf
  - Detection – winged and first instar upper leaves
  - Not colonized
  - Weekly scouting
  - Colonization – Colonies on underside of lower leaves
    - Honeydew present
    - Twice weekly scouting recommended
Sugarcane Aphid Treatment Decision Tool for Grain Sorghum

- Chemical Cost ($/ac): $9.00
- Application Cost ($/ac): $6.00
- Sorghum Price ($/bu): $3.75
- Harvest Cost ($/bu): $0.28
- Transportation Cost ($/bu): $0.20
- Yield Loss per 100 Aphids (bu/ac): 3.325
- Expected Yield without Sugarcane Aphid Damage (bu/ac): 70

$15.00 Treatment Cost ($/Ac)

Treatment cost includes cost of chemical, application, and repairs.

- **Treatment Decision Based on Yield Potential and Sugarcane Aphid Count per Leaf**

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Expected Grain Sorghum Yield (bu/ac) without Sugarcane Aphid Damage:

- 55 bu/ac
- 60 bu/ac
- 65 bu/ac
- 70 bu/ac
- 75 bu/ac
- 80 bu/ac
- 85 bu/ac
Thanks for your attention!

Questions?