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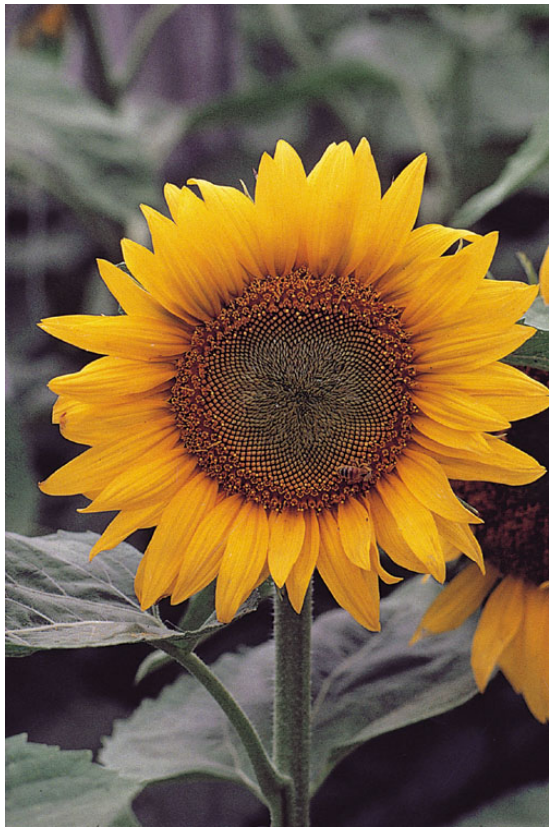

Sunflower Moth Control Using Dupont Prevathon (Chlorantraniliprole) vs. Common Insecticides—Preliminary Results of Early Timing

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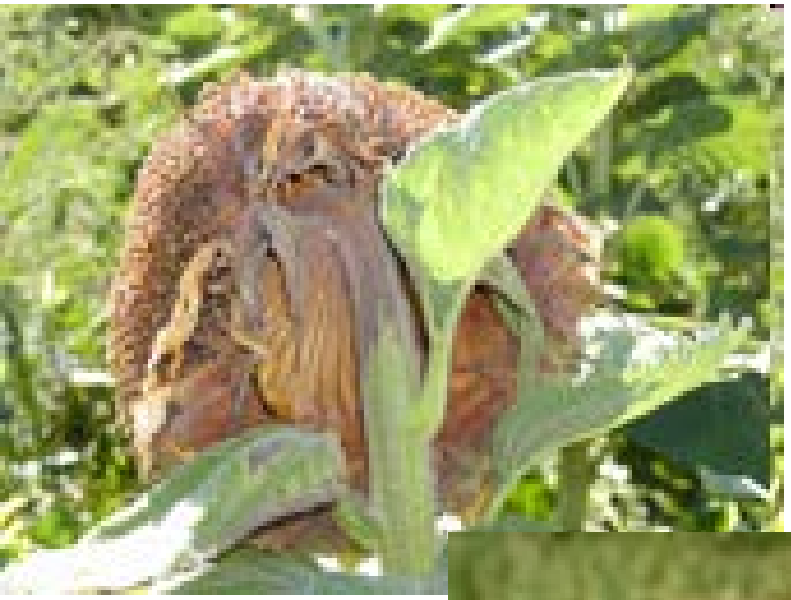
Sunflower (Head) Moth

- Threat for 7-10 days (if uniform stand) beginning with initial bloom when pollen becomes available
  - Second spray when needed 5-7 days later (but not for low yields in dryland)
- Don’t get caught!—Hybrids bloom fast, from 5% to 75% bloom in 2-3 days if warm
  - Don’t wait until 2-5% bloom to contact your applicator; get on the spray schedule
- Uncontrolled larvae eventually burrow into head destroying seed—increasing susceptibility to *Rhizopus* head rot

Sunflower Moth Larval Damage

This is especially detrimental to confectionary.

And Ultimately *Rhizopus* Headrot



"Styrofoam Bricks!"

Sunflower Moth Spraying

- Current "By the Book" (Texas AgriLife Extension's sunflower insect guide)
  - Spray at 15-25% bloom 'when moths are in the field', count any head as blooming when any of the ray flowers are opening and disk flowers are exposed.
  - Based on pyrethroids
  - No statement on how many moths—threshold is presence, not number
  - Downside: Still no room for error; moths still have 1-2 days to freely lay eggs on many heads
  - Result: Still have potential damage if late

New Insecticide, New Approach—Prevathon, 2013 I.

- Active ingredient, chlorantraniliprole (Rynaxypyr), from Dupont
- “Softer” chemical; does not affect honeybees and other beneficials

Sunflower Early Bloom Stages

Upper left: Pre-R4, no ray petals showing yet on face.

Upper right: Mid R4, bracts pulled back, ray petals visible.

Lower left: R5.0, some ray petals now erect and part of face exposed. One floret (disk flower) in bloom just above thumb tip.

Lower right: R5.1, disk flowers in bloom all around outer edge, about 10% of total area of the face of the sunflower.

New Insecticide, New Approach—Prevathon, 2013 III.

- Earlier first spray (initial bloom) than pyrethroid alone (5-20% bloom)
- Initial data compared to pyrethroid, which kills beneficials, demonstrates lower head larval counts
- First impression from Texas A&M AgriLife entomologists: good results, mixed thoughts on excluding pyrethroid until more data is collected
  - Besiege, from Syngenta, is a mix of chlorantraniliprole and pyrethroid

Prevathon Label & Sunflower

- Banded Moth, Sunflower Moth: "Apply when moth populations reach local established treatment thresholds and as blooms begin to open (R5.0-R5.1) to prevent crop damage.
- Applications may be required at 5-7 day intervals when moth pressure is heavy.
- Minimum 2 gal/A by air, 10 gal/A by ground rig.

New Insecticide, New Approach—Besiege, 2013

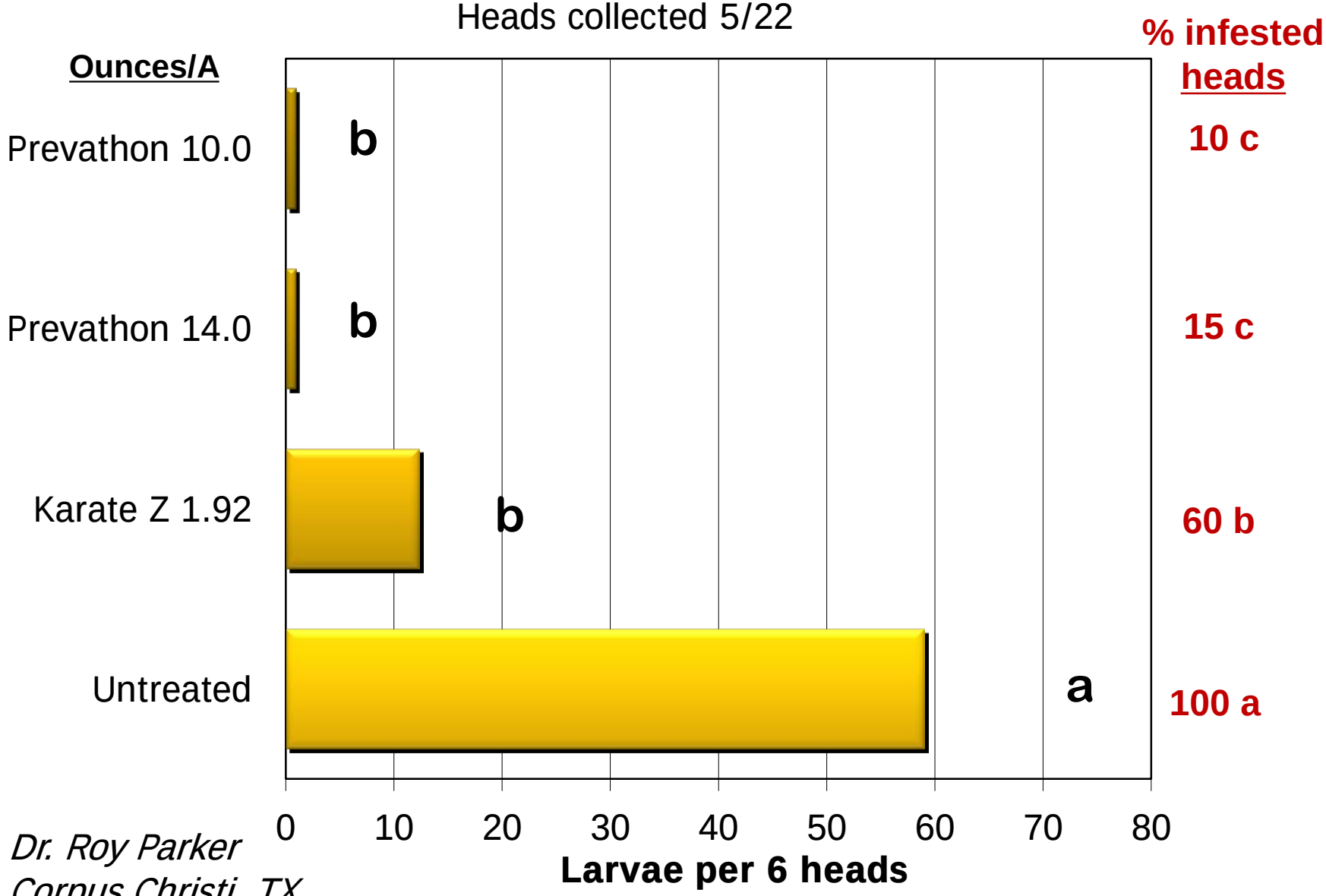
- Syngenta—mix of chlorantraniliprole and pyrethroid (Lambda-cyhalothrin), 6-10 oz/A
- See the special label for sunflower at http://www.cdms.net
- First spray “before pests reach damaging levels”
- Chlorantraniliprole in Prevathon: 14 oz./A rate of Prevathon = 7.6 oz/A for Besiege
  - A 14 oz./A rate of chlorantraniliprole would be 10.6 oz./A of Besiege, which is high
  - This rate of Besiege @ 7.6 oz./A includes 1.54 oz/A of Warrior II/λ-cyhalothrin (labeled range for sunflower, 1.28-1.92 oz./A)

Besiege Label & Sunflower

- Apply before pests reach damaging levels. Scout and treat again if populations rebuild to potentially damaging levels.
- Minimum interval 5 days.
- Minimum 5 gal/A by air, 10 gal/A by ground rig. Do not apply as an ultra-low volume spray.

2012 SFM larvae in early planted test

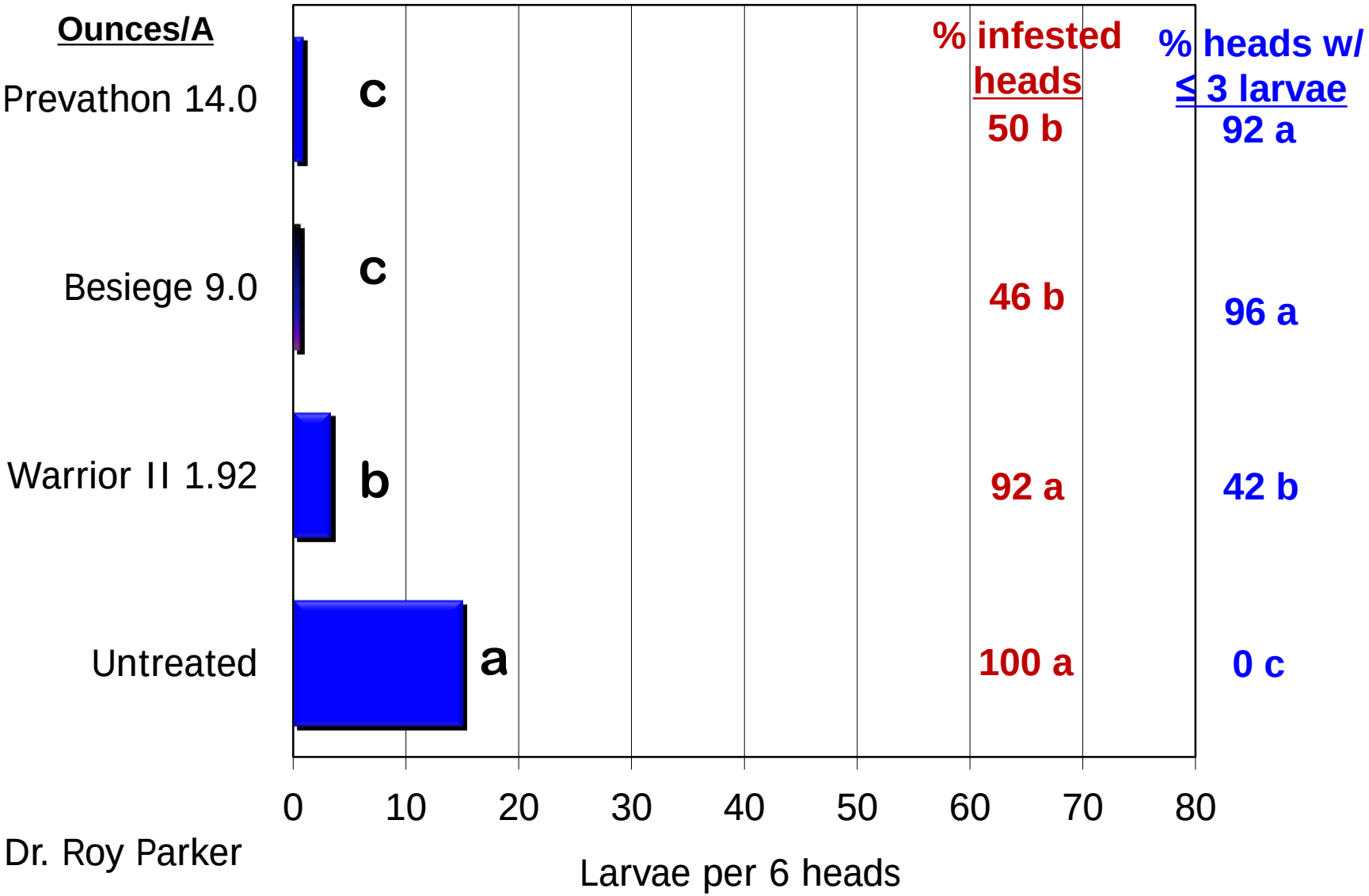
Application #1: 4% bloom (4/25); #2, 20% Bloom (4/30); #3, 100% Bloom (5/8), Heads collected 5/22



Dr. Roy Parker
Corpus Christi, TX

2014 SFM Larvae, TX Gulf Coast

Application #1: 70% Bloom (6/5); #2, 100% Bloom (6/10),
Heads collected 6/17



Dr. Roy Parker

2014 Sunflower Moth Trial – Lubbock

Treatment	Rate	Application Date	Mean No. SFM larvae/6 plants 8/18	8/25	9/2
Prevathon	14 oz/A	Aug. 5 & 15	13.0 ab	5.5 b	4.5 a
Prevathon + Asana	14 oz/A + 7.7 oz/A	Aug. 5 & 15	18.0 ab	9.0 ab	4.0 a
Prevathon	14 oz/A	Aug. 10	9.8 ab	14.0 ab	7.0 a
Prevathon + Asana	14 oz/A + 7.7 oz/A	Aug. 10	10.3 ab	10.8 ab	4.5 a
Prevathon	14 oz/A	Aug. 10 & 18	7.5 b	10.3 ab	9.5 a
Prevathon + Asana	14 oz/A + 7.7 oz/A	Aug. 10 & 18	7.8 b	8.8 ab	4.5 a
Karate	3.8 oz/A	Aug. 5 & 15	35.5 a	12.5 ab	6.8 a
Karate	3.8 oz/A	Aug. 10 & 18	10.5 ab	12.5 ab	4.8 a
Untreated		None	26.0 ab	23.5 a	14.3 a
P>F			0.015	0.082	0.084

Aug. 5 = 2 days before 1% bloom; Aug. 10 = ~10% bloom.

2015 Sunflower Moth Trial – Lubbock

Treatment	Rate	Application Date	Mean No. SFM larvae / 6 plants 8/31	9/7
Prevathon	14 oz/A	Aug. 13 & 22	4.3 ab	1.0
Prevathon + Asana	14 oz/A + 7.7 oz/A	Aug. 13 & 22	3.3 ab	0.0
Prevathon	14 oz/A	Aug. 16	3.8 ab	0.0
Prevathon + Asana	14 oz/A + 7.7 oz/A	Aug. 16	0.3 b	0.0
Prevathon	14 oz/A	Aug. 16 & 24	1.0 b	0.0
Prevathon + Asana	14 oz/A + 7.7 oz/A	Aug. 16 & 24	0.5 b	0.5
Karate	3.8 oz/A	Aug. 13 & 22	3.3 ab	0.75
Karate	3.8 oz/A	Aug. 16 & 24	0.5 b	0.25
Untreated		None	14.5 a	4.0
P>F			0.041	0.128

Aug. 13 = 2 days before 1% bloom; Aug. 16 = ~10% bloom.

Sunflower Early Bloom Stages

Upper left: Pre-R4, no ray petals showing yet on face.

Upper right: Mid R4, bracts pulled back, ray petals visible.

Lower left: R5.0, some ray petals now erect and part of face exposed. One floret (disk flower) in bloom just above thumb tip.

Lower right: R5.1, disk flowers in bloom all around outer edge, about 10% of total area of the face of the sunflower.

Summary on Early Prevathon Application

- Preliminary data suggests no improvement in control
- Can you apply too early?—Yes
- We often say for pyrethroids, “if in doubt, go ahead and spray” (be early rather than be late)
- This is still probably sound advice for Prevathon (and Besiege?)

Summary on Early Prevathon Application

- But what about later applications? Timing the insecticide WHEN larvae are present and feeding?
- You are covered in this regard if you use two applications, but due to cost of Prevathon, growers would like to avoid the second spray if they can
- Will a single spray at low % bloom protect the crop?

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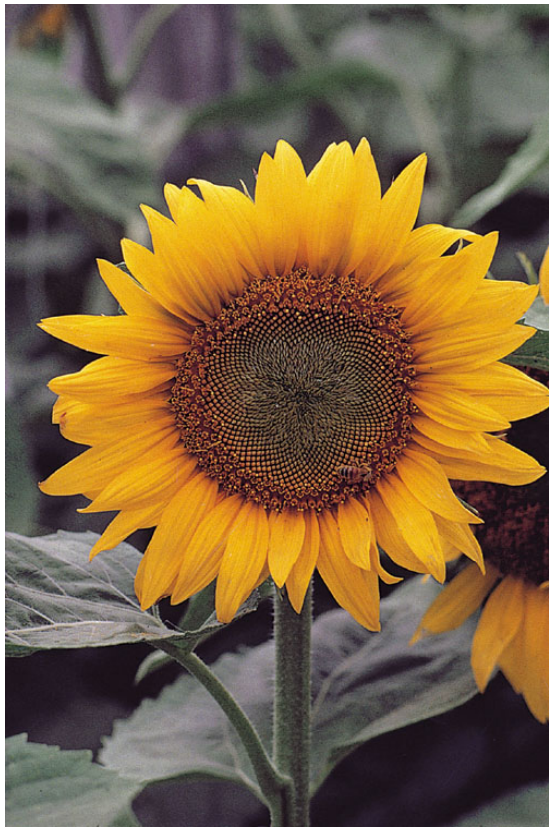

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