Outlook for Blackbird Repellents

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NWRC Avian Repellents Research

- Evaluation and Development
- Application Strategies

Avian Repellents Research

Registered Fungicides:

Allegiance® FL
Apron XL® LS/Maxim® 4FS
Dividend Extreme® FS
Endura®
GWN-4770
Thiram 42-S
Tilt® EC
Trilex® FL
Quadris®
Vitavax® 200

Registered Insecticides:

Asana XL®
Baythroid 2®
Cobalt™
Endosulfan 3EC®
Karate® with Zeon Technology™
Lorsban-4E®
MustangMAX™
Scout X-TRA®
Warrior T®

Natural Compounds:

Aza-Direct™ (neem oil)
Caffeine (plus sodium benzoate)
Flock Buster (lemon grass oil, garlic oil, clove oil, peppermint oil, rosemary oil, thyme oil, white pepper)
Gander Gone (citrus terpenes)
9, 10 Anthraquinone™ (Seed treatment and Foliar formulations; a.i. 50% 9-10 anthraquinone)
Bird Shield ™, Avian Control ™ (a.i., methyl anthranilate)

Experiments

- Cage Experiments
  - single birds
- Enclosure Experiments
  - known number of birds
- Field Experiments
  - variable numbers of birds

Avian Repellents Research- cages

Lab Efficacy Testing

Preference Testing

- 10-12 birds
- 4-day choice test
- untreated versus treated food

Concentration-response Testing

- 50-60 birds, 5-6 groups
- 4-day pretreatment & test
- 5-6 concentrations tested

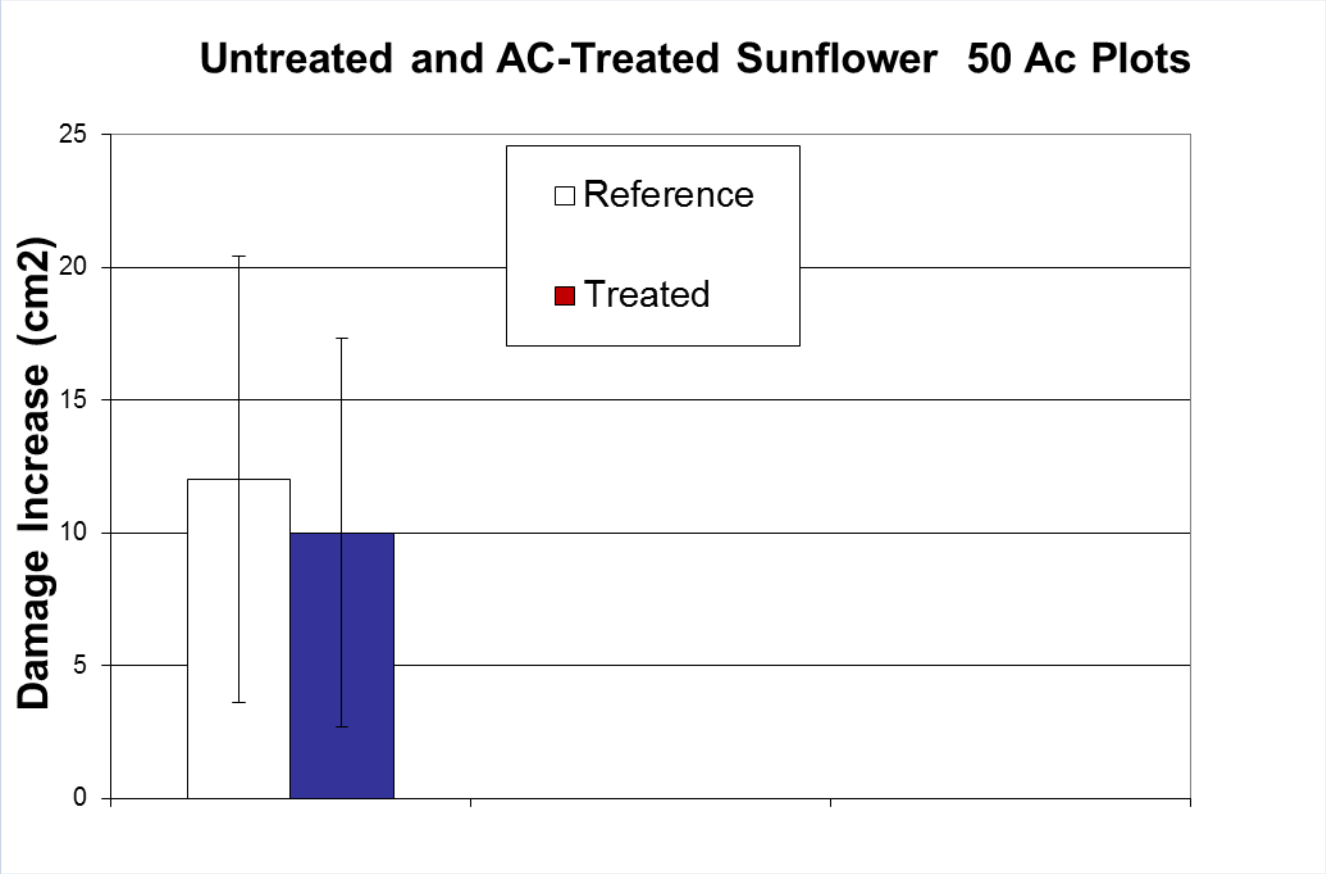
NWRC Outdoor Animal Research Facility

Fort Collins, CO

Primary Repellents

- Methyl Anthranilate –
  - Irritates the peripheral chemical
  - Do not require learning
    - ➢ Unpalatable taste, odor, or irritating
  - Derived from natural products (grapes)
  - Degrades rapidly

Avian Control Field Study (4.7 l/ha)



Grower Perception

- Grower opinion on efficacy ranged from excellent to marginal.
  - The application seemed to work best when bird numbers were relatively small.

AC Manufacturer Recommendations *

- 1st application -36 oz/ac ~$15/acre
- 2nd application - 24 oz/ac ~$10/acre
  - ✓Optional
    - ➢3rd application - 24 oz/ac

*$54.00/gal

Avian Repellents Research- Enclosures

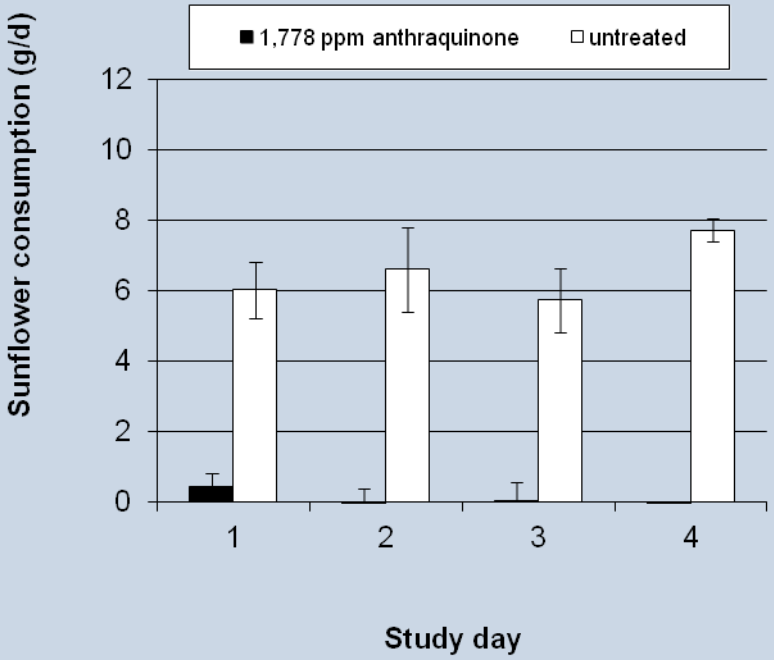
Secondary Repellent

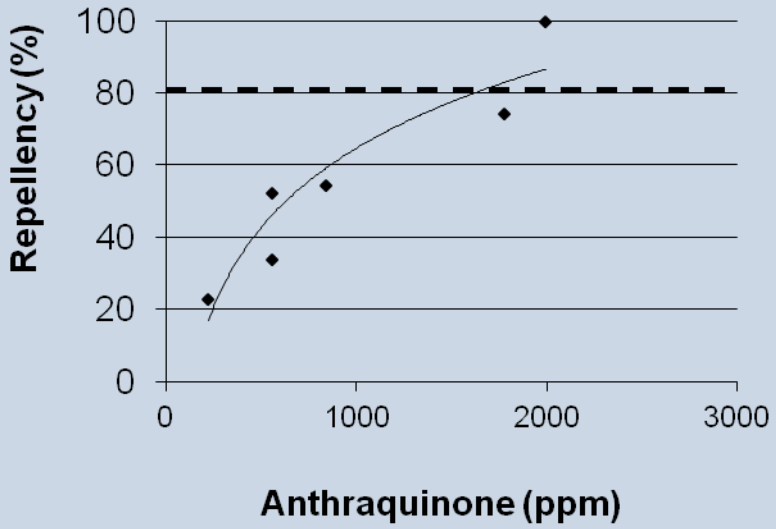
- Negative post-ingestion effects
- Learned avoidance

Secondary Repellents

- Anthraquinone – Current Use
  - Seed treatment bird repellent
- Section 24 C
  - Section 3 pending
- Turf
  - Flight Control

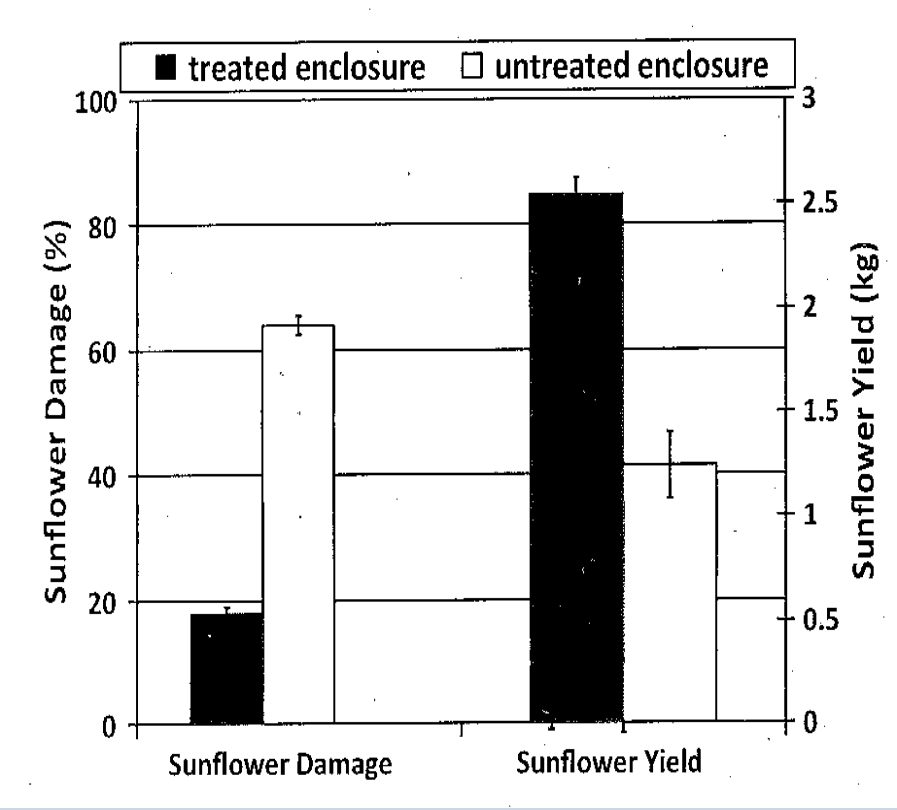
Anthraquinone lab efficacy- RWBL



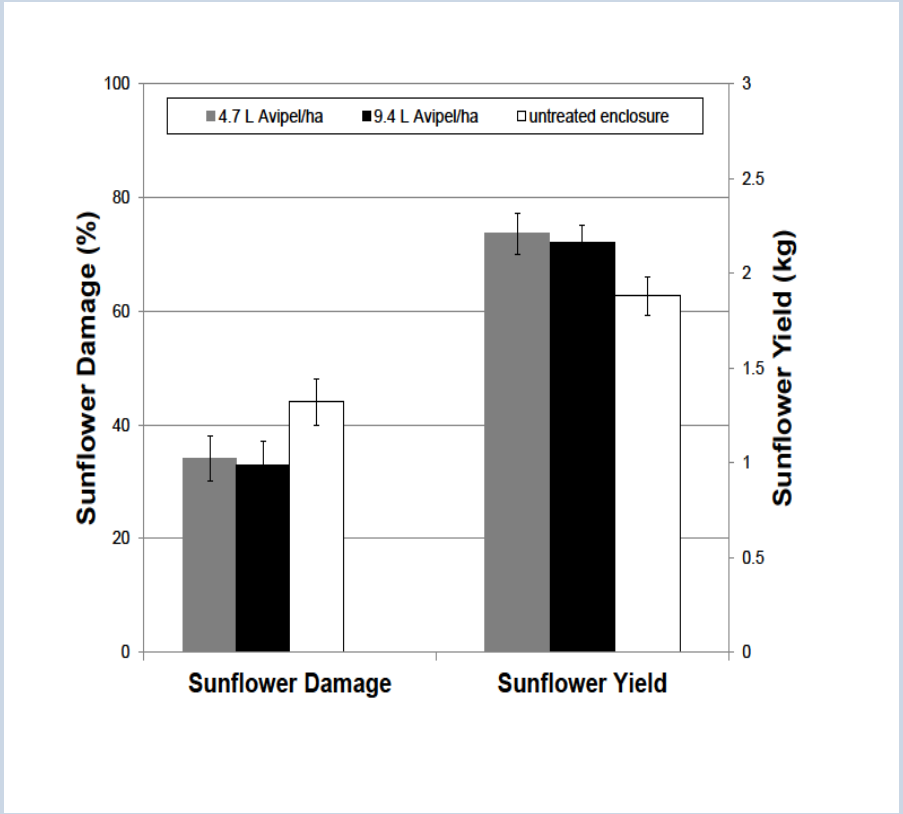


AQ Enclosure Studies

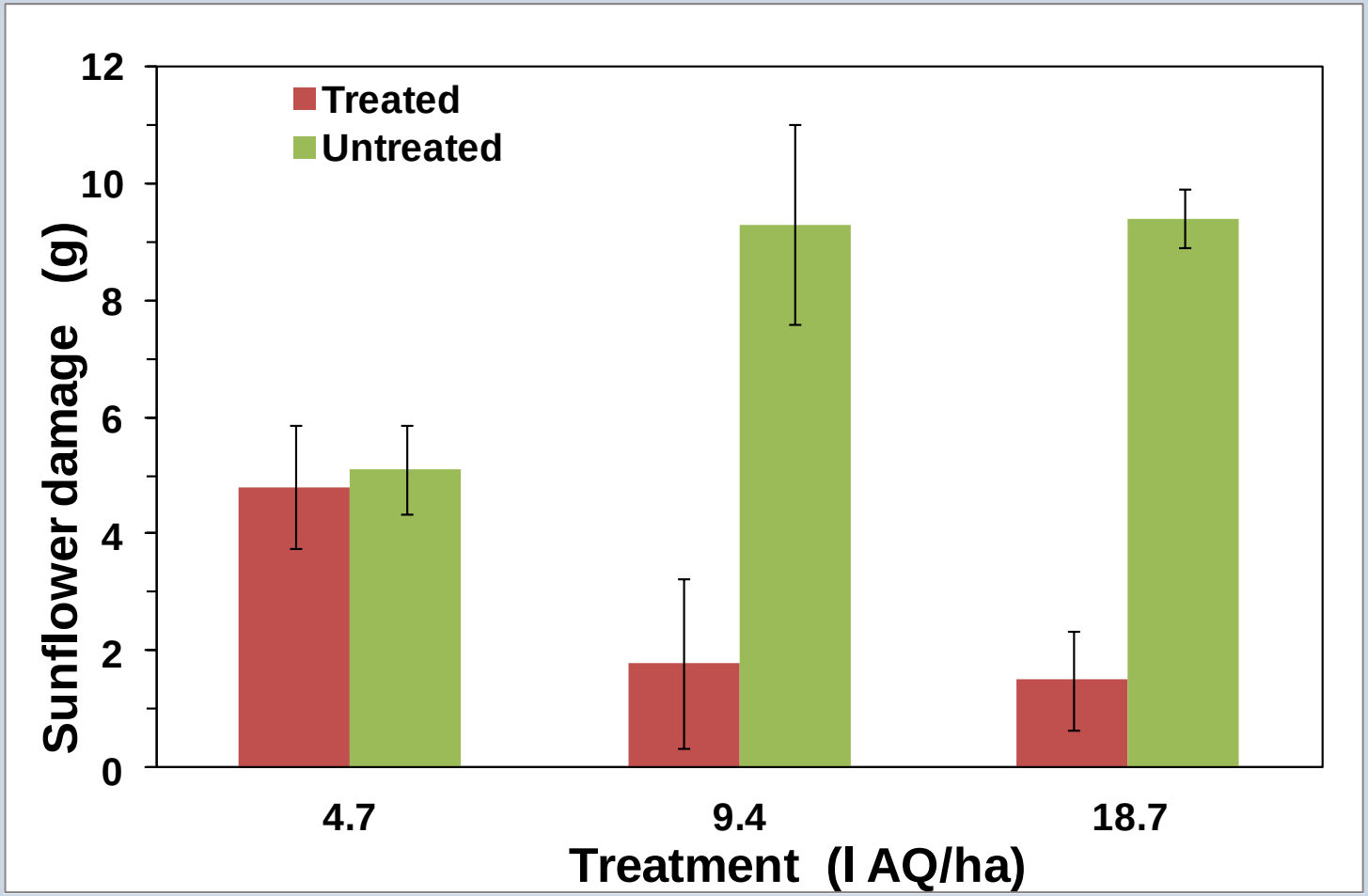
Grackles (18 l/ha)



Redwings 4.7 l/ha & 9.4 l/ha



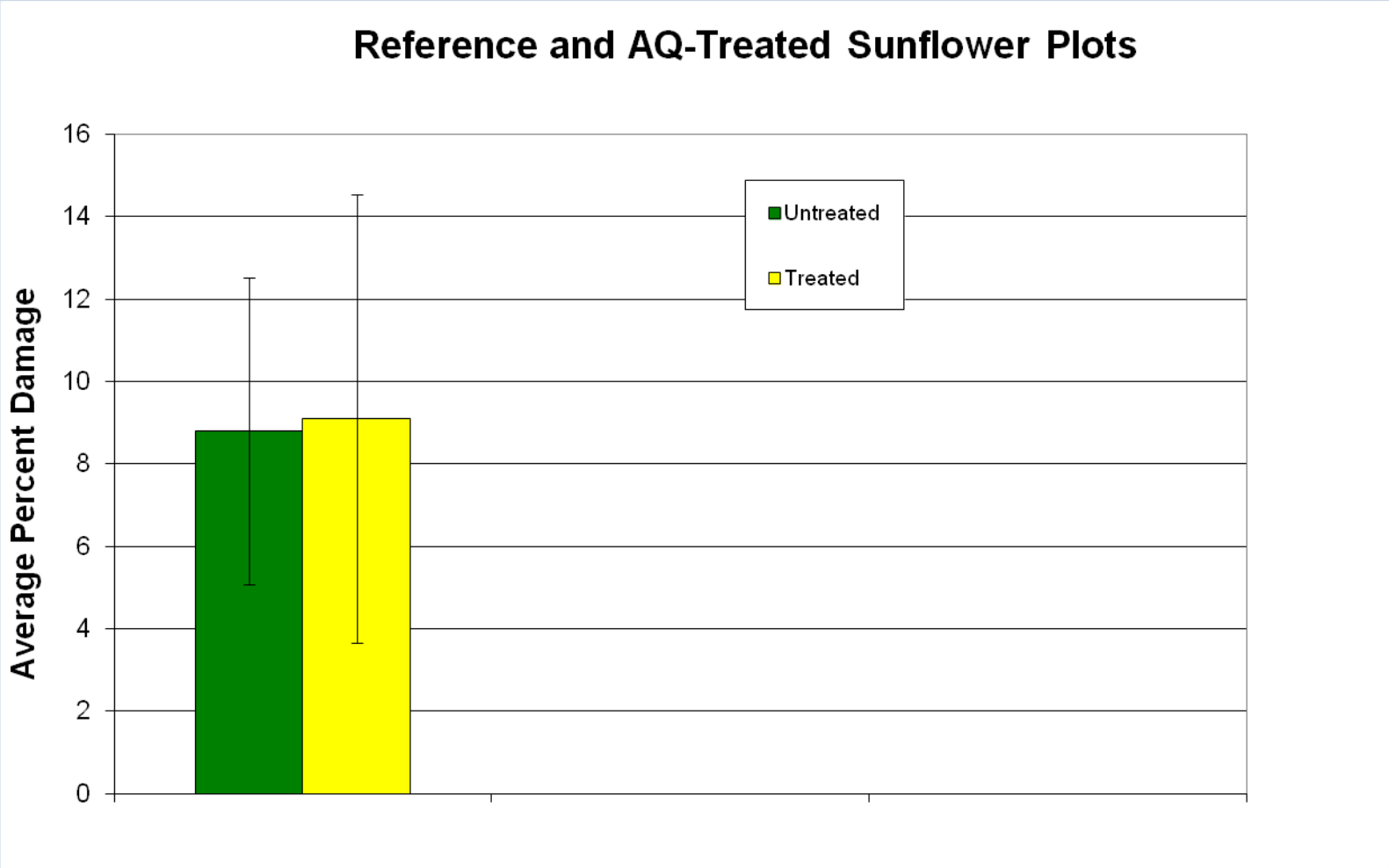
Back of the Head AQ Study



AQ Field Study - Aerial Application

Aerial Application of AQ

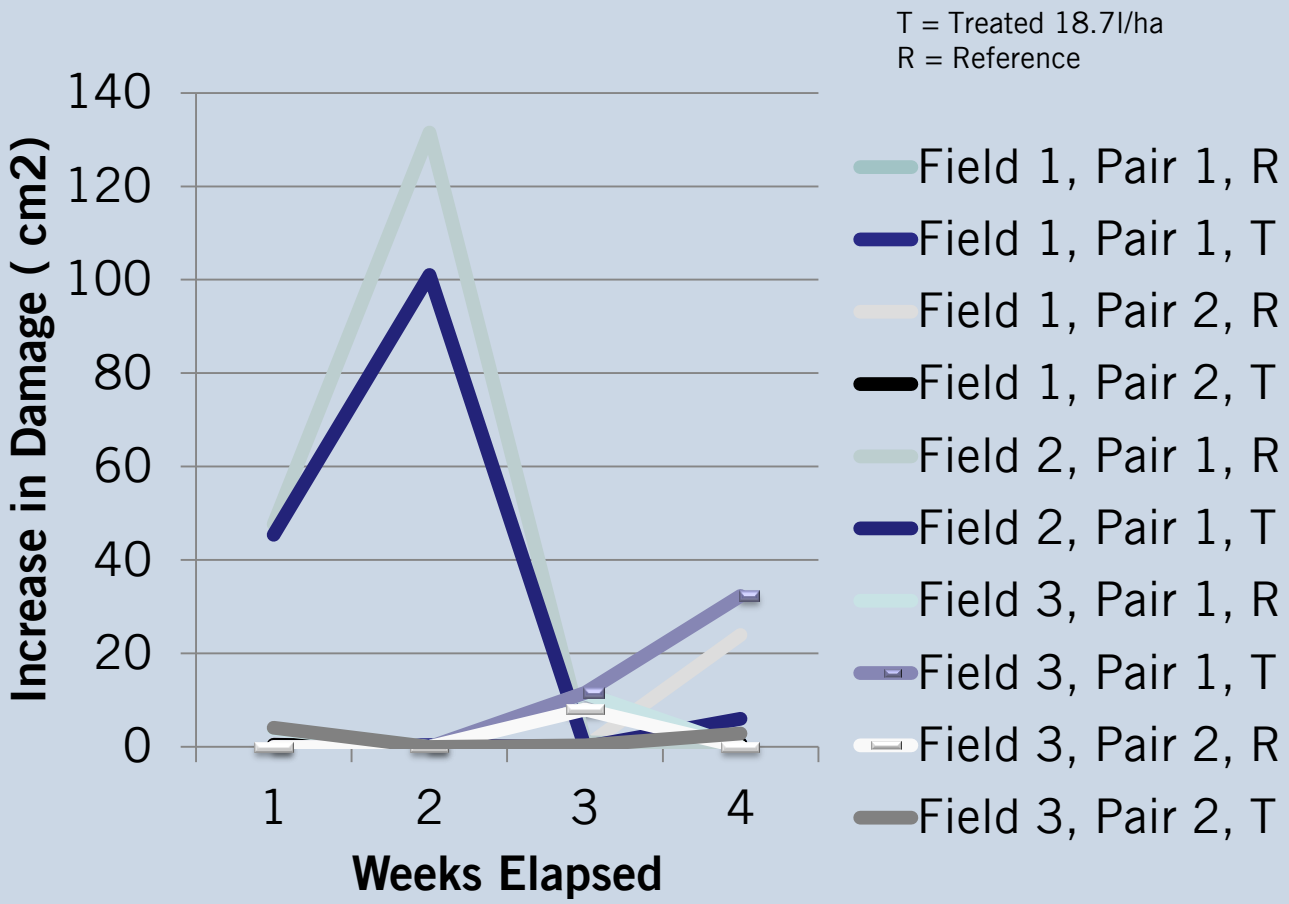
Damage in AQ-treated (9.4 l/ha) and Untreated Field Strips



AQ Field Study - Ground Application

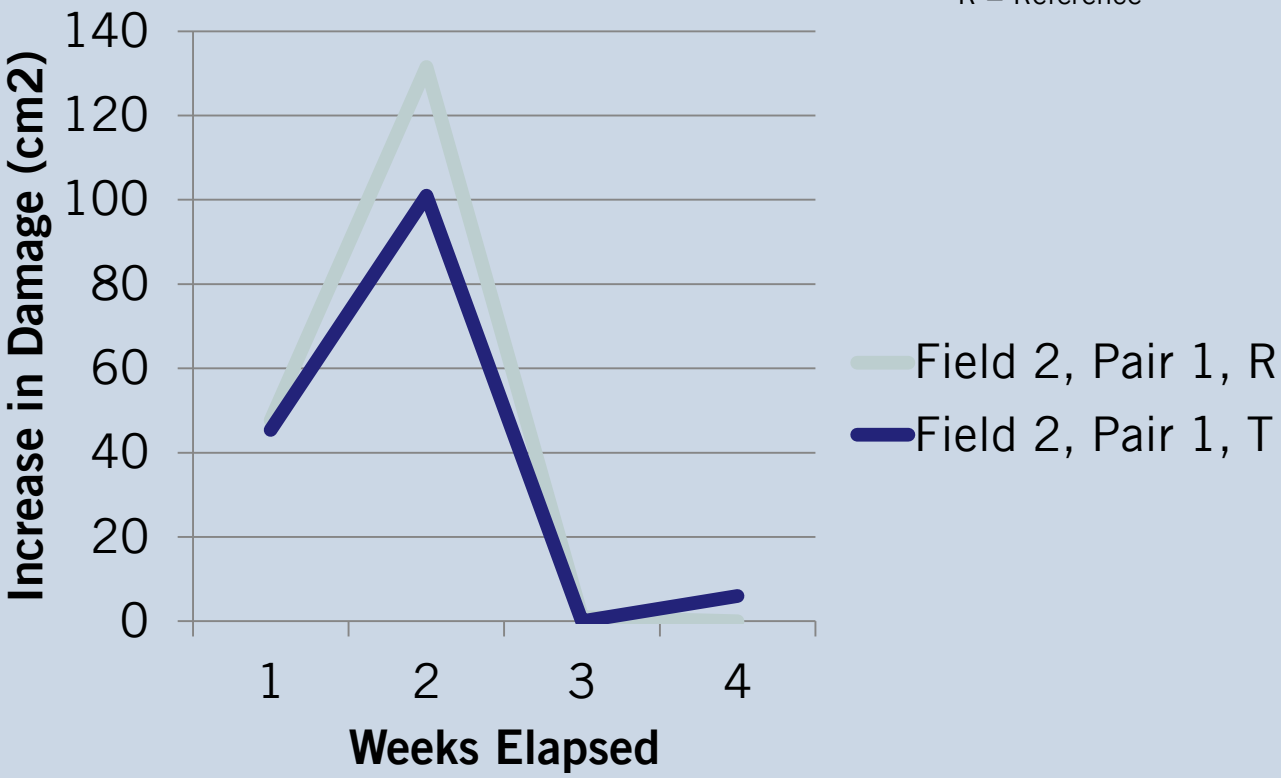
AQ Field Study - Ground Application

Damage/Head in AQ-treated and Untreated Plots



Damage/Head in AQ-treated and Untreated Plots

T = Treated: 18.7 l/ha
R = Reference



Future AQ Research

- 2013
  - ✓ Enclosure study
    - ➢ Ground Application
      - ○ Better control of spray
    - ➢ ~R1-R3 Stage
    - ➢ 1 ½ gal/ac (14.0 l/ha)

Other AQ Research

- AQ Foliar Application
  - ✓New Initiative
    - ➢South Dakota State Univ.
    - ➢Canada Geese
    - ➢Soybean sprouts

Recommendation

- Avoid experimental studies
  - ✓Large variances at field-level
    - ➢Habitat differs among fields
    - ➢Bird numbers differ
    - ➢Influx of naïve birds
- Let ‘the market’ decide

End Game

- Desiccants
- Frightening Devices
- Short Sunflowers
- Cattail Roost Management
- Chemical Repellents
- Conservation Food Plots
  - Perennial Sunflower

Literature

Linz, G.M., Homan, H.J., Werner, S.J., Hagy, H.H. and Bleier, W.J. 2011. Assessment of bird-management strategies to protect sunflowers. BioScience 61: 960–970.

Acknowledgments

- Turtle Lake Sunflower Growers
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- Sprayers, Inc
- NWRC – Fort Collins

Thank You!