

# Fungicide Chemigation Trials 2005-2007

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Clay Center, NE

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# Fungicide Chemigation Trials

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# Introduction

## Background

- The increased use of foliar fungicides in corn has led to questions regarding the differences between fungicide applications made via chemigation or by ground.
- This trial was initiated in response to these questions and compared pyraclostrobin (Headline®) efficacy when applied by chemigation or ground.



# Disease Notes

## Gray Leaf Spot



- 2005 – predominant foliar disease at low/moderate severity
- 2006 – minor compared to southern rust and low/moderate severity
- 2007 – predominant foliar disease at moderate severity



# Disease Notes

## Common Rust

- 2005 – minor disease at low severity
- 2006 – minor compared to southern rust and at low severity
- 2007 – minor disease at low severity





# Disease Notes

## Southern Rust

- 2005 – not detected
- 2006 – moderate/severe and predominant disease in this trial this year
- 2007 – minor disease at low severity



# 2005-2007 Chemigation Trials

## Important Dates

- **Headline® (pyraclostrobin) used in all trials.**
- **2007- Asgrow RX752 RR2/YGPL**  
GLS rating 7 (Fair)  
Planted: May 14, 2007  
Application Date: July 20, 2007  
Harvested: October 30, 2007
- **2006- NC+ 4947 RB**  
Planted: May 5, 2006  
Application Date: July 18, 2006  
Harvested: October 13, 2006
- **2005- Asgrow RX 752 YG**  
Planted: April 27, 2005  
Application Date: ????  
Harvested: October 5, 2005

# 2005-2007 Chemigation Trials

## Treatment List

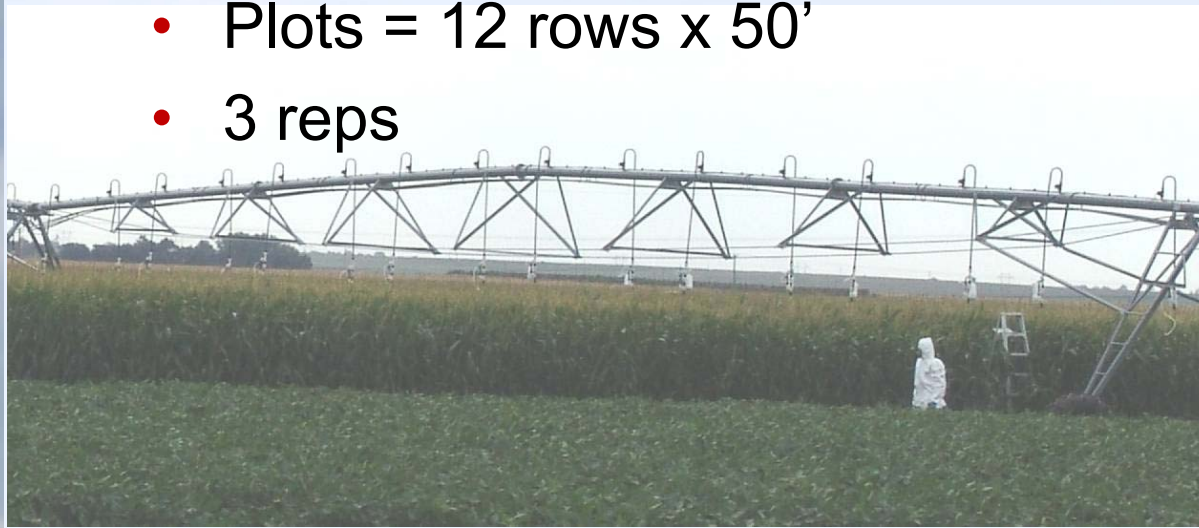
### 4 TREATMENTS

- 1. Non-Treated**
  - 2. 6 oz Headline at VT with 0.25” chemigation water**
  - 3. 6 oz Headline at VT with 0.50” chemigation water**
  - 4. 6oz Headline at VT via ground applicatoin + 0.125 v/v NIS**
- **3 Reps, 4 Treatments**
  - **20 (8 rows b/t plots) x 23’ long**
  - **All treatments applied at Tassel (VT)**
  - **The ground application of Headline (treatment 4) was applied with a CO<sub>2</sub>-pressurized sprayer and a 10 ft wide hand-held boom with six Hypro Twincap TJ XR11001 nozzles spaced at 20-in. apart and 12-in. above the canopy.**
  - **Spray volume was 15 gal/A at a pressure of 38 psi.**



# 2005-2007 Fungicide Chemigation Trials

- Linear overhead sprinkler irrigated
- Chemigation treatments were injected at nozzle as illustrated with a venturi-type injector
- Ground applications made by backpack sprayer at 38 psi and 15 gpa
- Middle rows harvested for yield
- Plots = 12 rows x 50'
- 3 reps

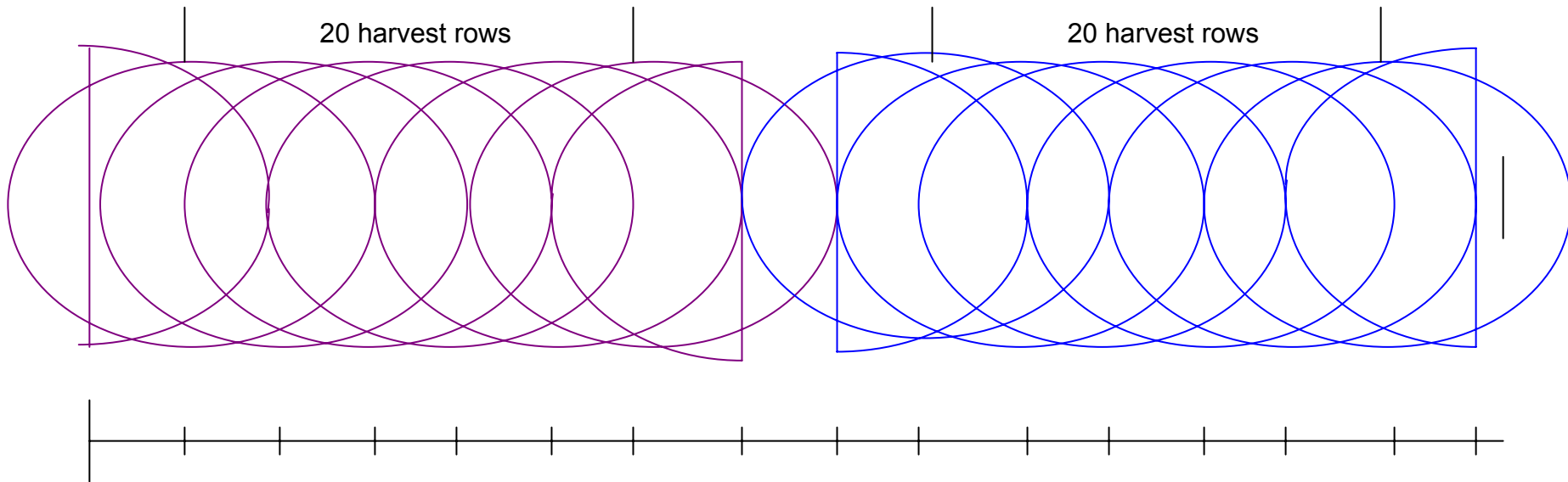
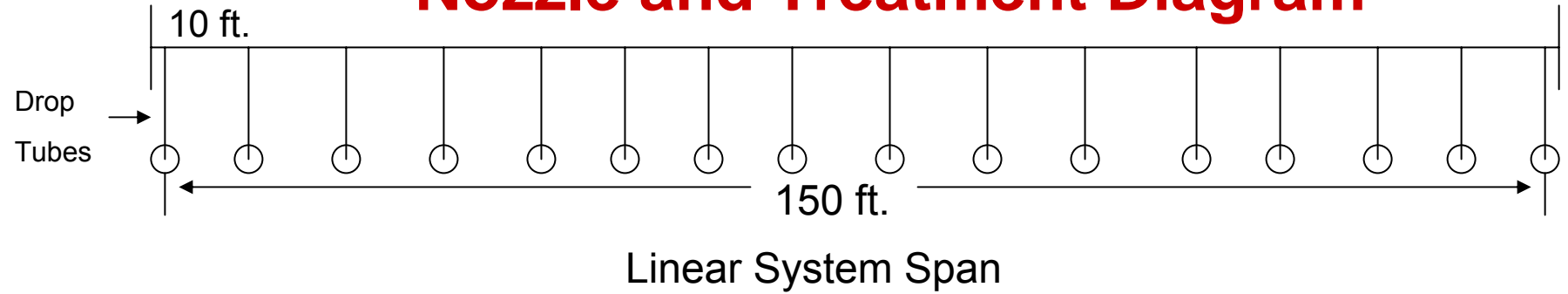


# 2005-2007 Fungicide Chemigation Trials Data Collection



- Disease severity = % total leaf area covered by disease lesions or rust pustules
- Grain mechanically harvested and adjusted to 15.5% moisture
- Stay green measured as % plants green after beginning senescence
- % moisture measured in combine at harvest
- Lodged plants per plot (%) estimated at harvest

# Nozzle and Treatment Diagram



Distribution pattern with 2 treatments across the span (CORN)

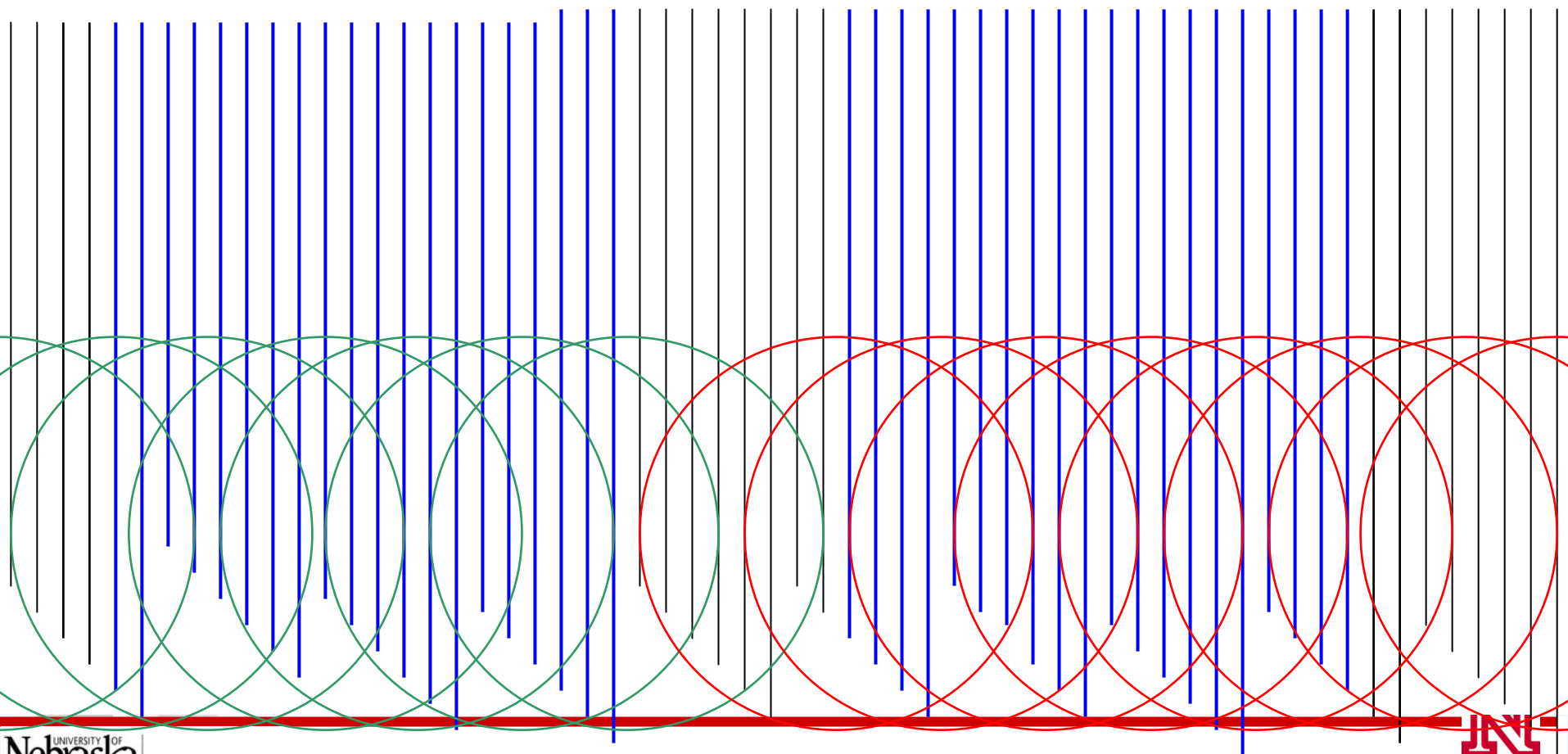


# Treatment Overlap and Harvest Rows Diagram

60 Rows/span

Circles are 40 ft. sprinkler wetted area,  
2 treatments wide noted by colors,  
one sprinkler plugged between treatments.

Blue lines would be harvest rows



# 2007 Chemigation Trial in NE

Asgrow RX752 RR2/YGPL (GLS rating 7/Fair)

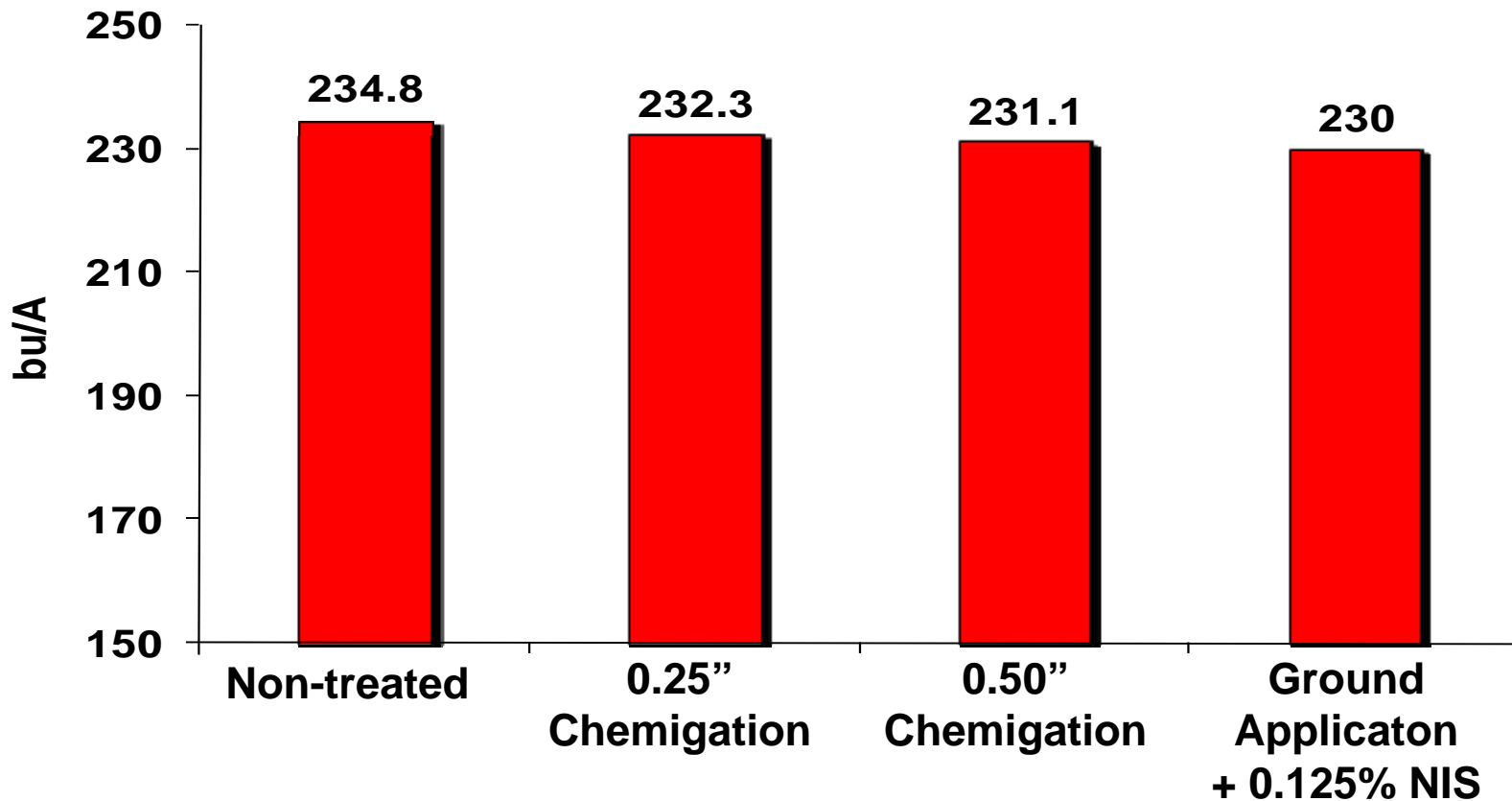
Planted 5/14/07



- High winds (> 90 mph) impacted this location August 23, 2007 causing various degrees of crop injury, including leaf ripping and low incidence of lodging. The third foliar disease rating was completed just prior to the storm.

# 2005 Chemigation Trial Yield

Asgrow RX 752 YG  
Planted 4/27/05



• All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

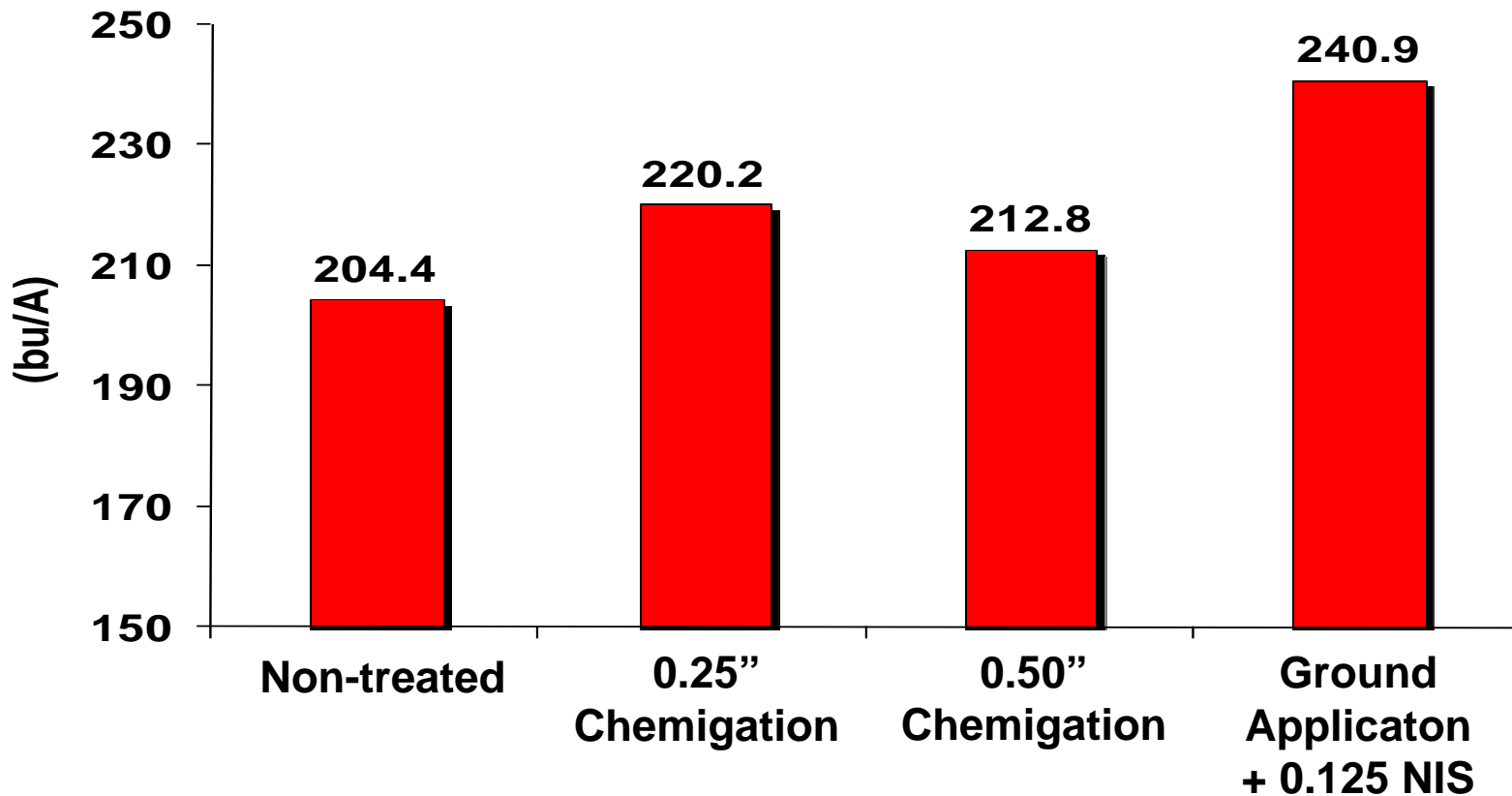


# 2006 Chemigation Trial

## Yield

NC+ 4947 RB

Planted 5/5/06



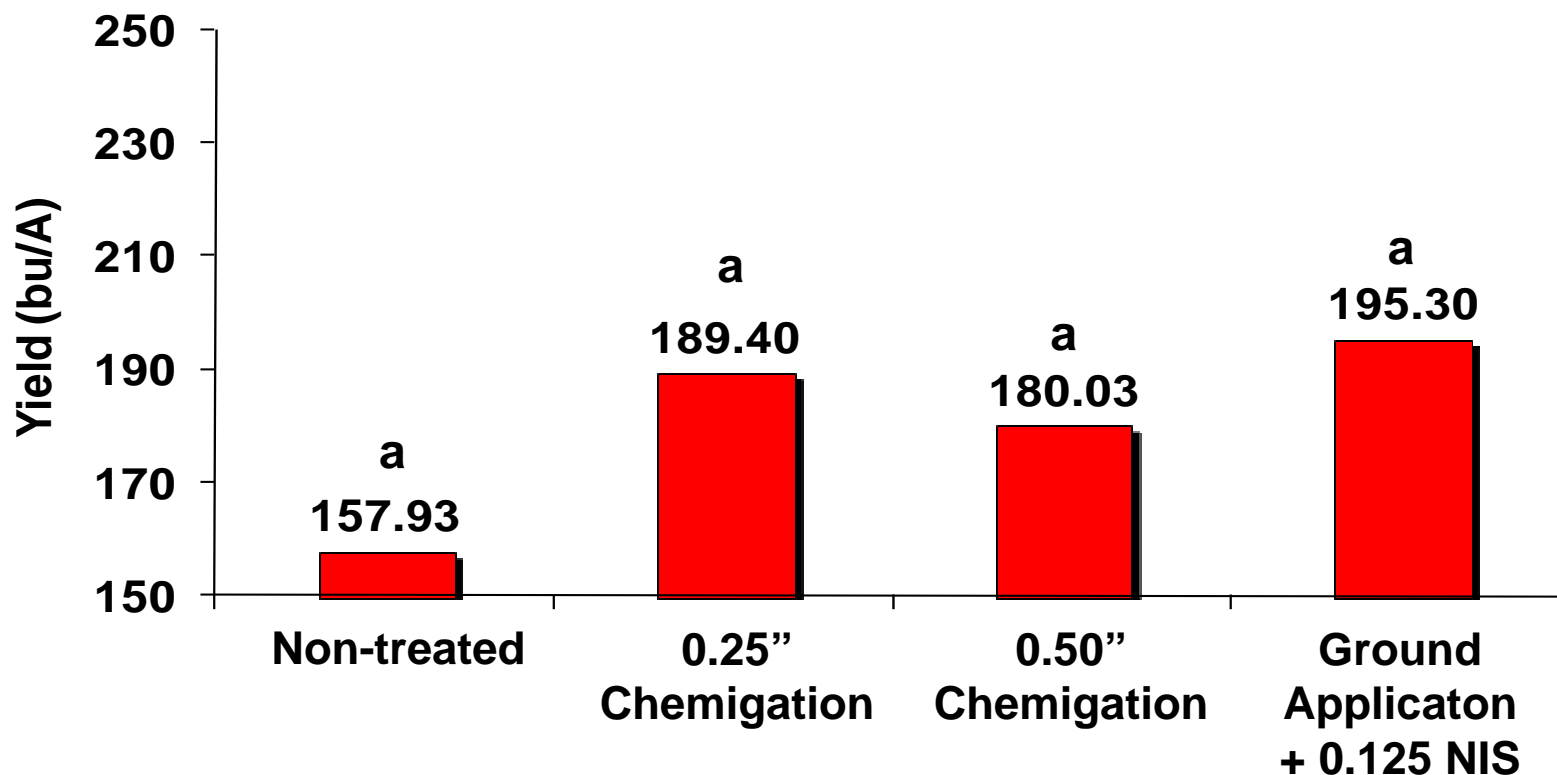
• All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

# 2007 Chemigation Trial

## Yield

Asgrow RX752 RR2/YGPL (GLS rating 7/Fair)

Planted 5/14/07



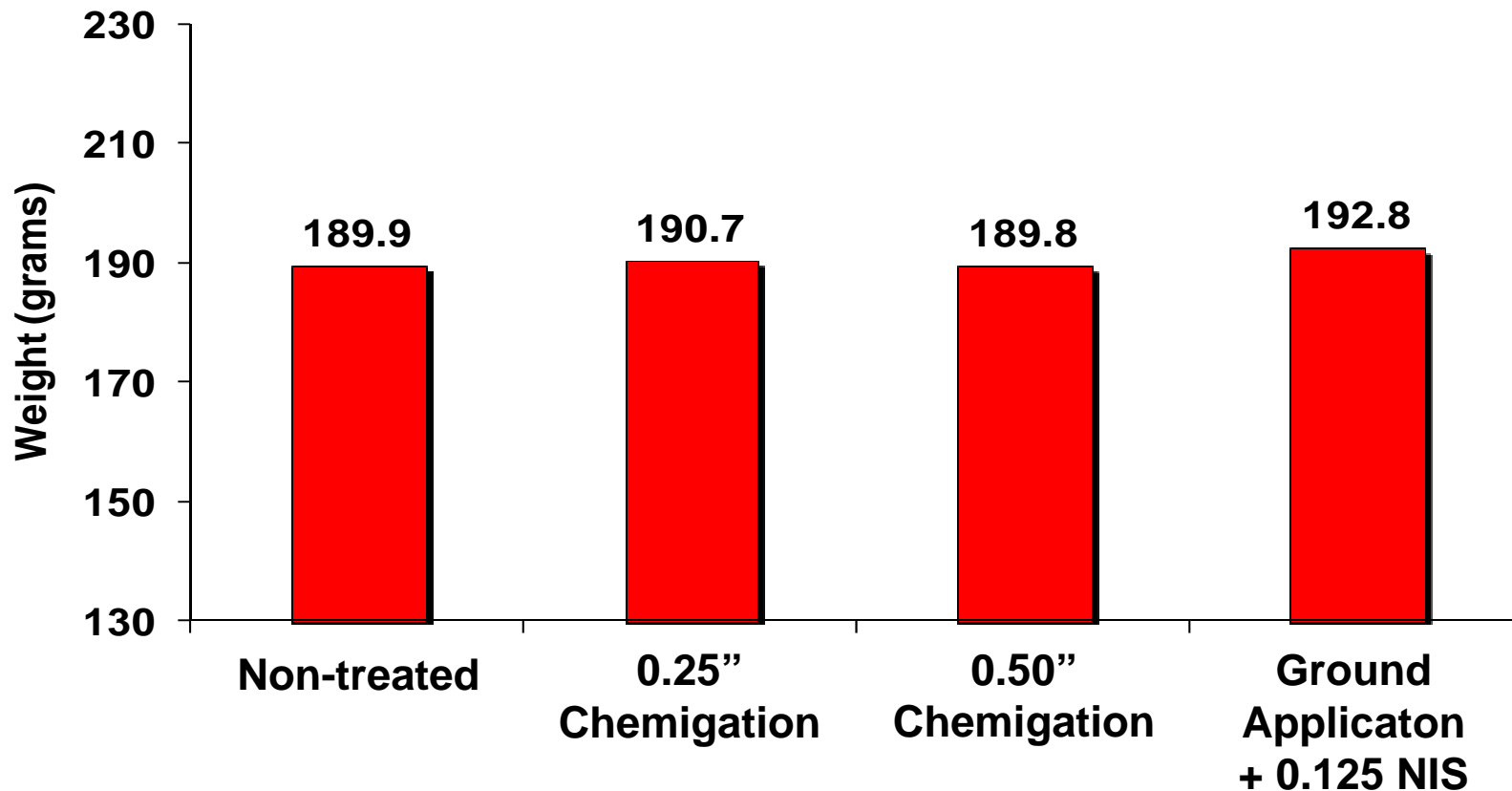
- All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

# 2005 Chemigation Trial

500 Kernel Weight

Asgrow RX 752 YG

Planted 4/27/05



● All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

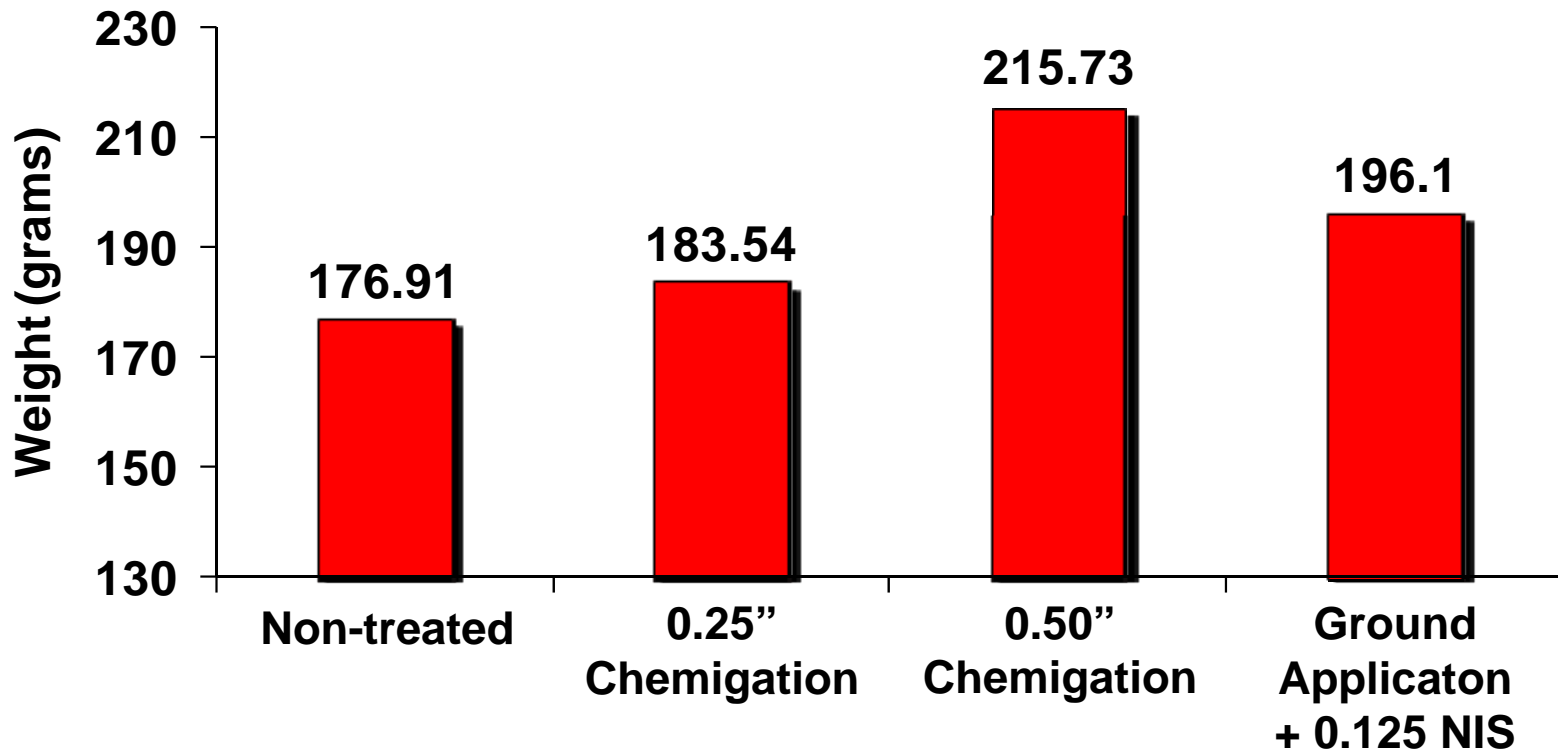


# 2006 Chemigation Trial

500 Kernel Weight

NC+ 4947 RB

Planted 5/5/06



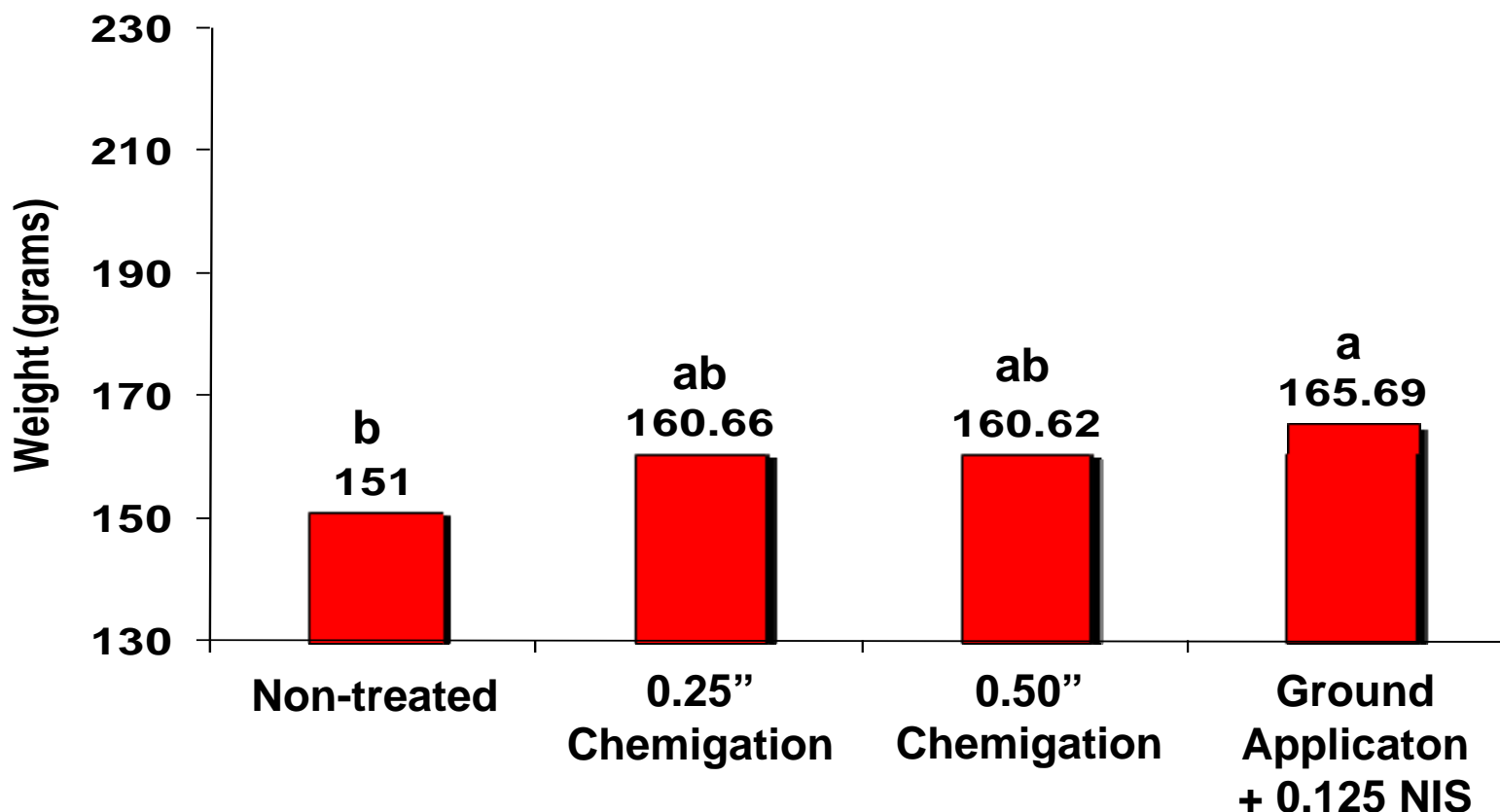
- All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

# 2007 Chemigation Trial

500 Kernel Weight

Asgrow RX752 RR2/YGPL (GLS rating 7/Fair)

Planted 5/14/07



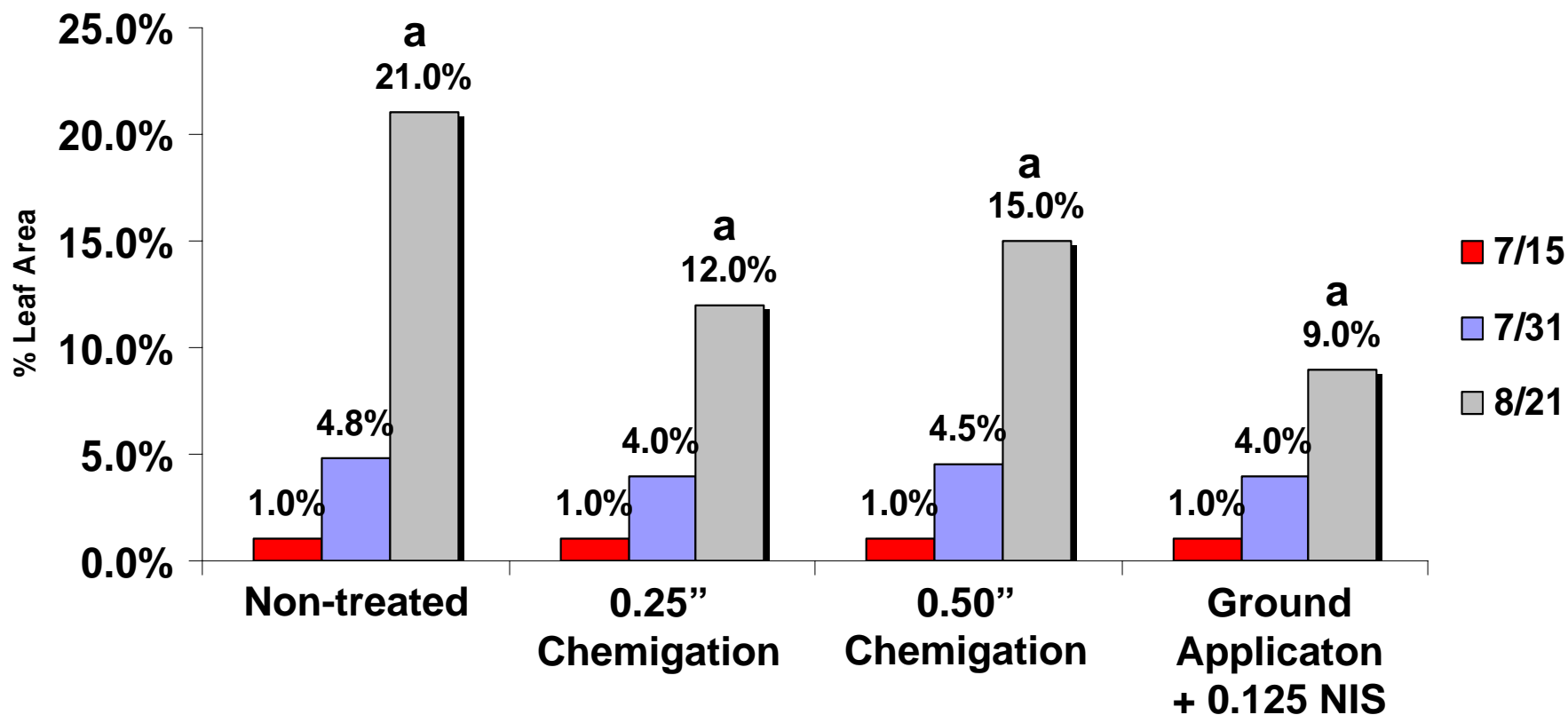
• All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

# 2007 Chemigation Trial

## Grey Leaf Spot

Asgrow RX752 RR2/YGPL (GLS rating 7/Fair)

Planted 5/14/07



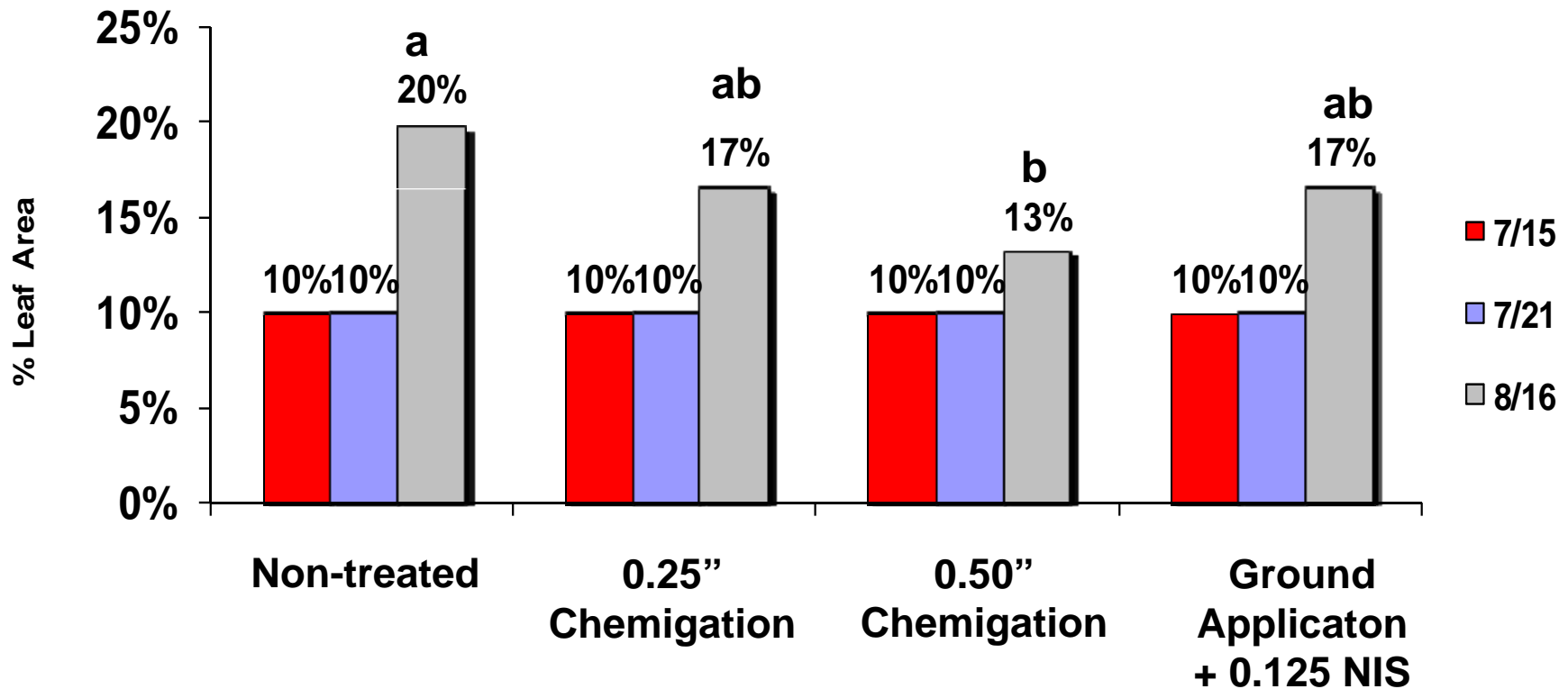
● All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

# 2005 Chemigation Trial

## Grey Leaf Spot

Asgrow RX752 RR2/YGPL (GLS rating 7/Fair)

Planted 4/27/05



● All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

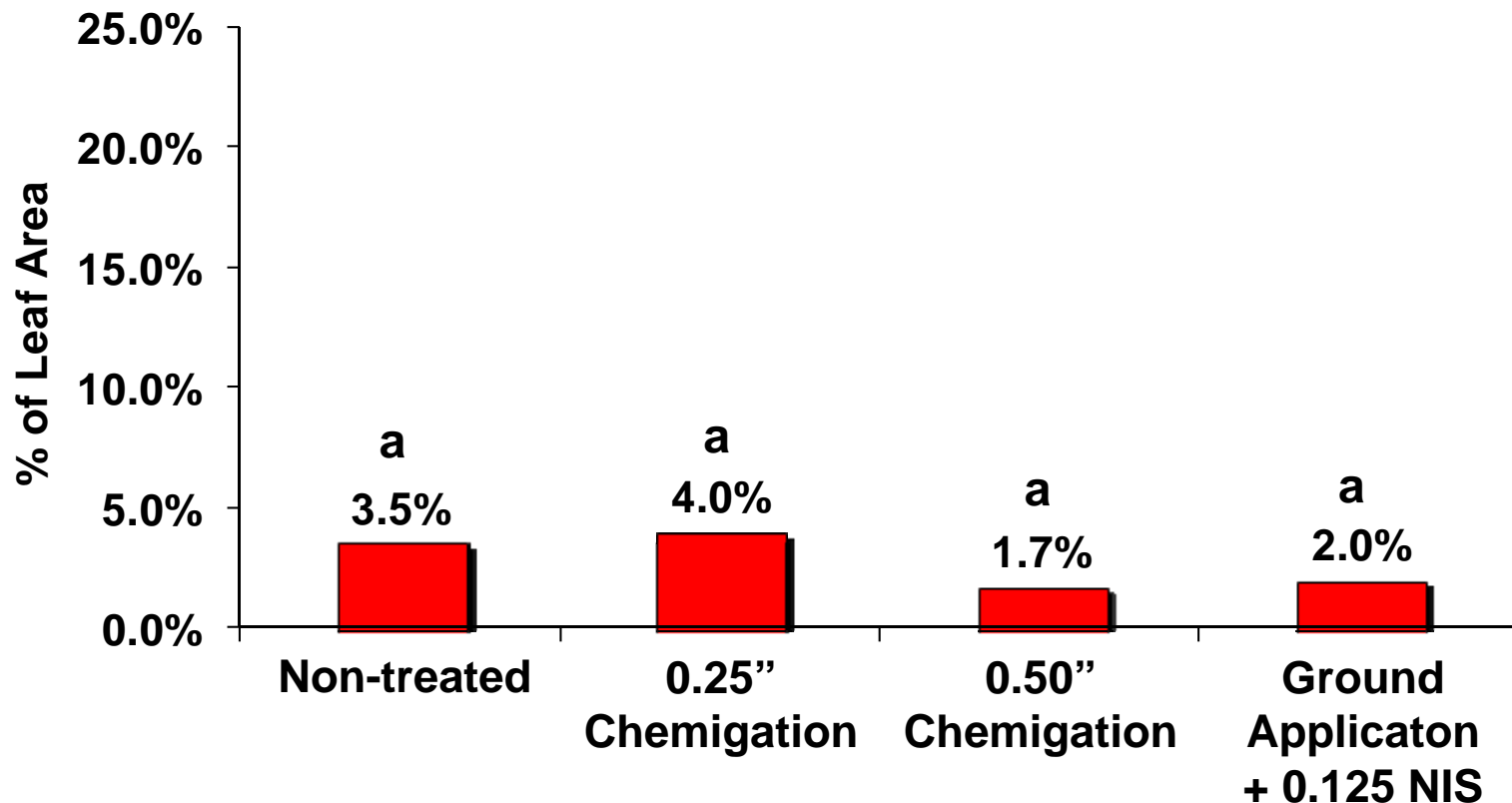


# 2007 Chemigation Trial

## Common Rust

Asgrow RX752 RR2/YGPL (GLS rating 7/Fair)

Planted 5/14/07



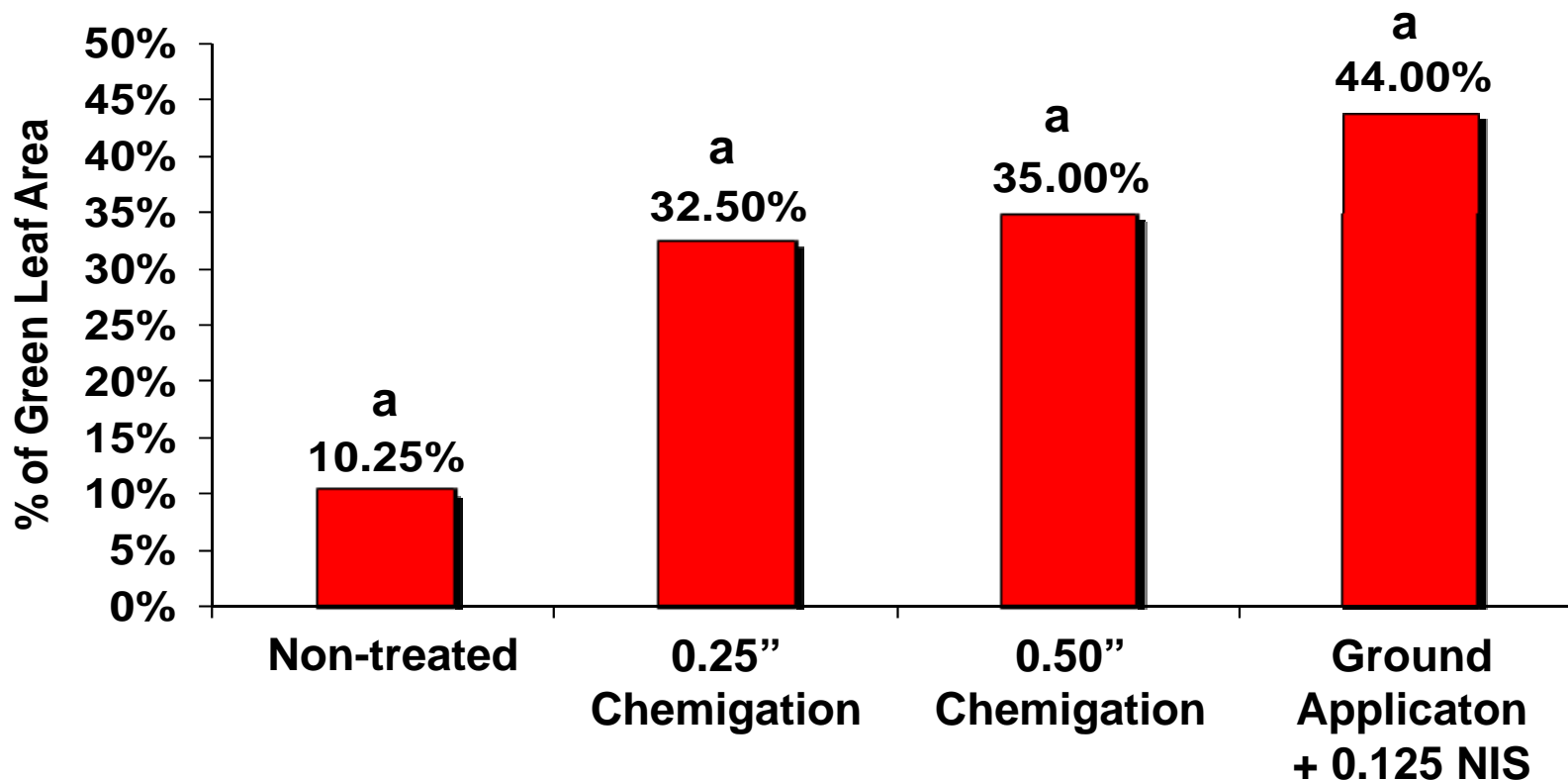
- All Applications were of 6 oz Headline at VT (Tasseling)
  - Southern rust occurred at low severity (< 2%)
- South Central Agricultural Lab near Clay Center, NE

# 2007 Chemigation Trial

## Stay Green

Asgrow RX752 RR2/YGPL (GLS rating 7/Fair)

Planted 5/14/07



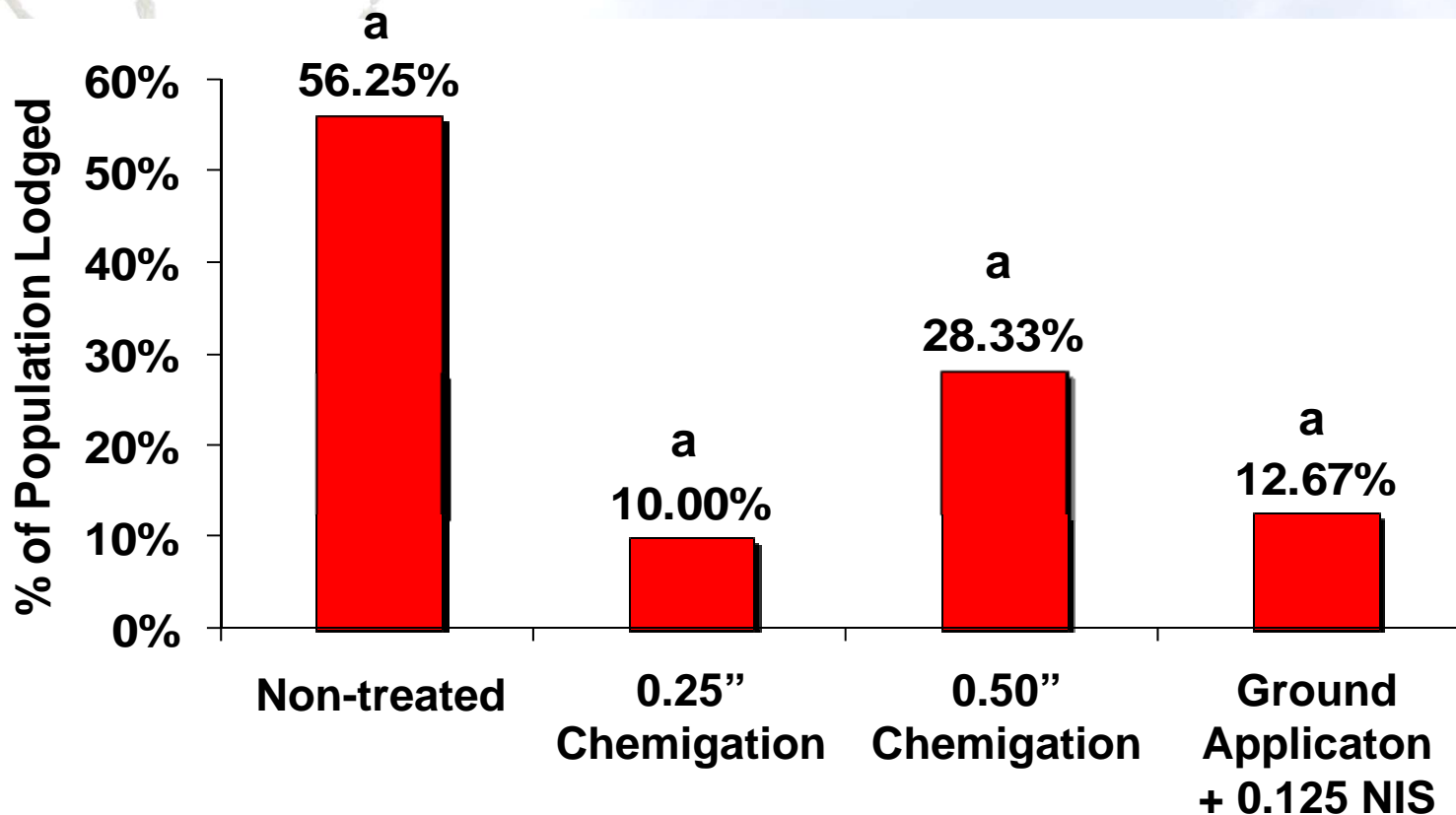
- All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

# 2007 Chemigation Trial

## Lodging

Asgrow RX752 RR2/YGPL (GLS rating 7/Fair)

Planted 5/14/07



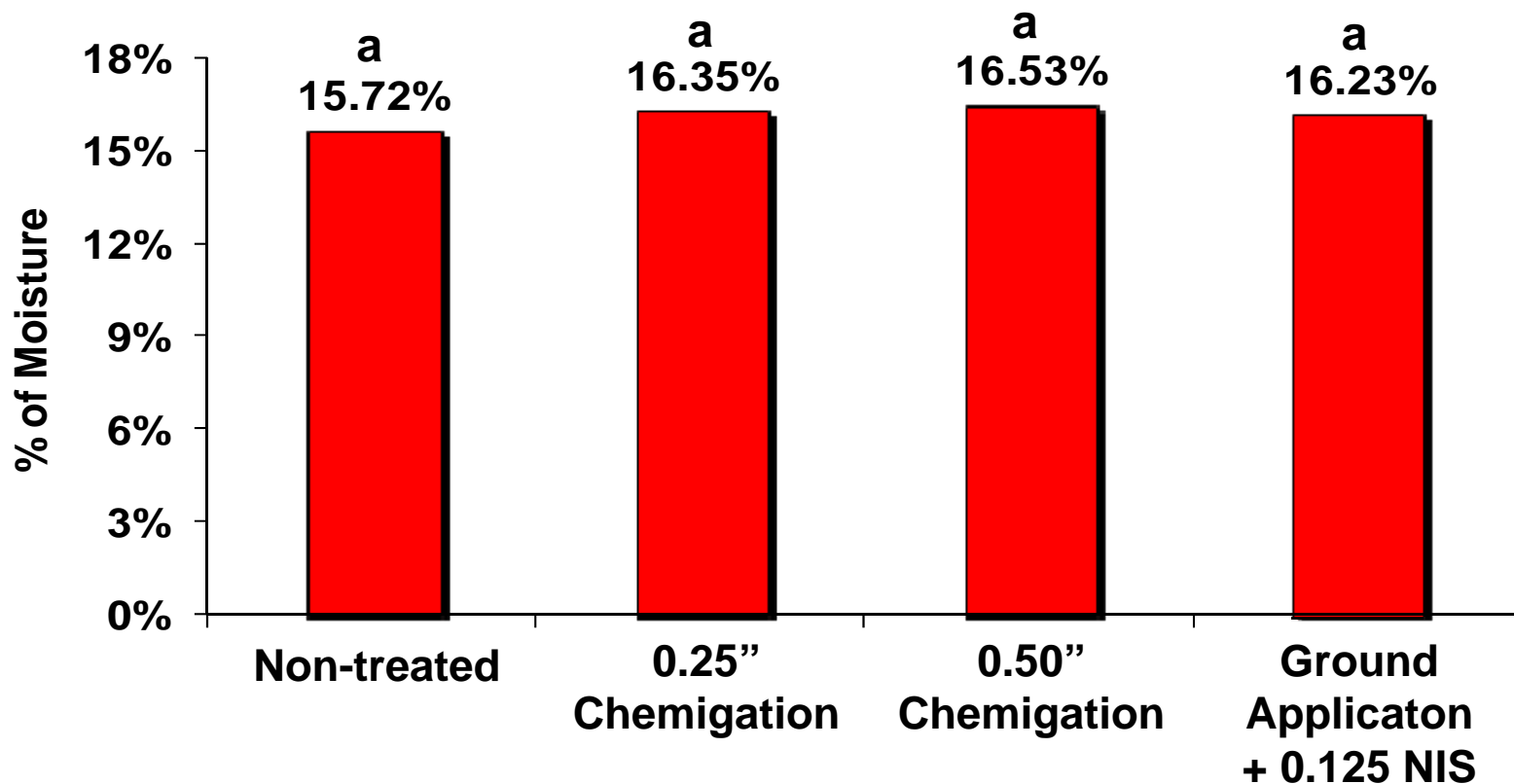
• All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE

# 2007 Chemigation Trial

## Moisture Percentage

Asgrow RX752 RR2/YGPL (GLS rating 7/Fair)

Planted 5/14/07



- All Applications were of 6 oz Headline at VT (Tasseling)  
South Central Agricultural Lab near Clay Center, NE



# Acknowledgments

- Travis Gustafson, Research Technologist
- Doug Miller, former Research Technologist
- UNL-SCAL Staff and Faculty
  - Perry Ridgway
  - David Althouse
- Numerous other hourly employees

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