

# 2008 Corn Foliar Fungicides Application Timing Trial

South Central Ag Lab  
Clay Center, NE

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University of Nebraska-Lincoln

# Disease Notes

## Gray Leaf Spot

- Gray leaf spot (GLS) was the predominant foliar disease in this trial
- Lesions started on the lowest leaves and progressed up the plant
- Gray leaf spot reached the tassel leaf by harvest in most plots



# Disease Notes

## Common Rust

- Common rust developed at low severity (<8%) in this trial
- In general, common rust was more severe than normal in Nebraska in 2008, likely due to the ample moisture and cooler than normal temperatures.



# Disease Notes

## Southern Rust

- Southern rust developed in Nebraska in 2008 for the third consecutive year.
- The disease developed at very low incidence and severity (<3%) in this trial and surrounding areas, likely because of the cooler than normal temperatures.



# Introduction

## Background

- Late season onset of some foliar diseases of corn during recent years, particularly southern rust during August 2006 and 2007, led to questions regarding the importance of fungicide application timing and the potential benefits of later season applications.
- This trial was initiated in response to these questions to evaluate disease control and yield benefits of foliar fungicides applied after tasseling.

# 2008 Foliar Fungicide Timing Trial



- Applied with high clearance sprayer
- 20 gallons per acre (gpa)
- Continuous corn
- 2 Planting dates
  - April 30, 2008
  - May 14, 2008
- 2 Hybrids
  - DKC 60-18
    - GLS rating = 7 (fair)
  - DKC 61-69
    - GLS rating = 5 (good)
- 2 Fungicides
  - Headline
  - Stratego
- 6 replicates
- Overhead sprinkler irrigated

2005-2006



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# 2008 Foliar Fungicide Timing Trial Data Collection

- Disease severity = % total plot leaf area covered by lesions or rust pustules
- GLS progression recorded as leaf number moving up the plant (1-18)
- Grain was mechanically harvested and adjusted to 15.5% moisture
- Lodged plants per plot (%) estimated at harvest

# 2008 Foliar Fungicide Timing Trial

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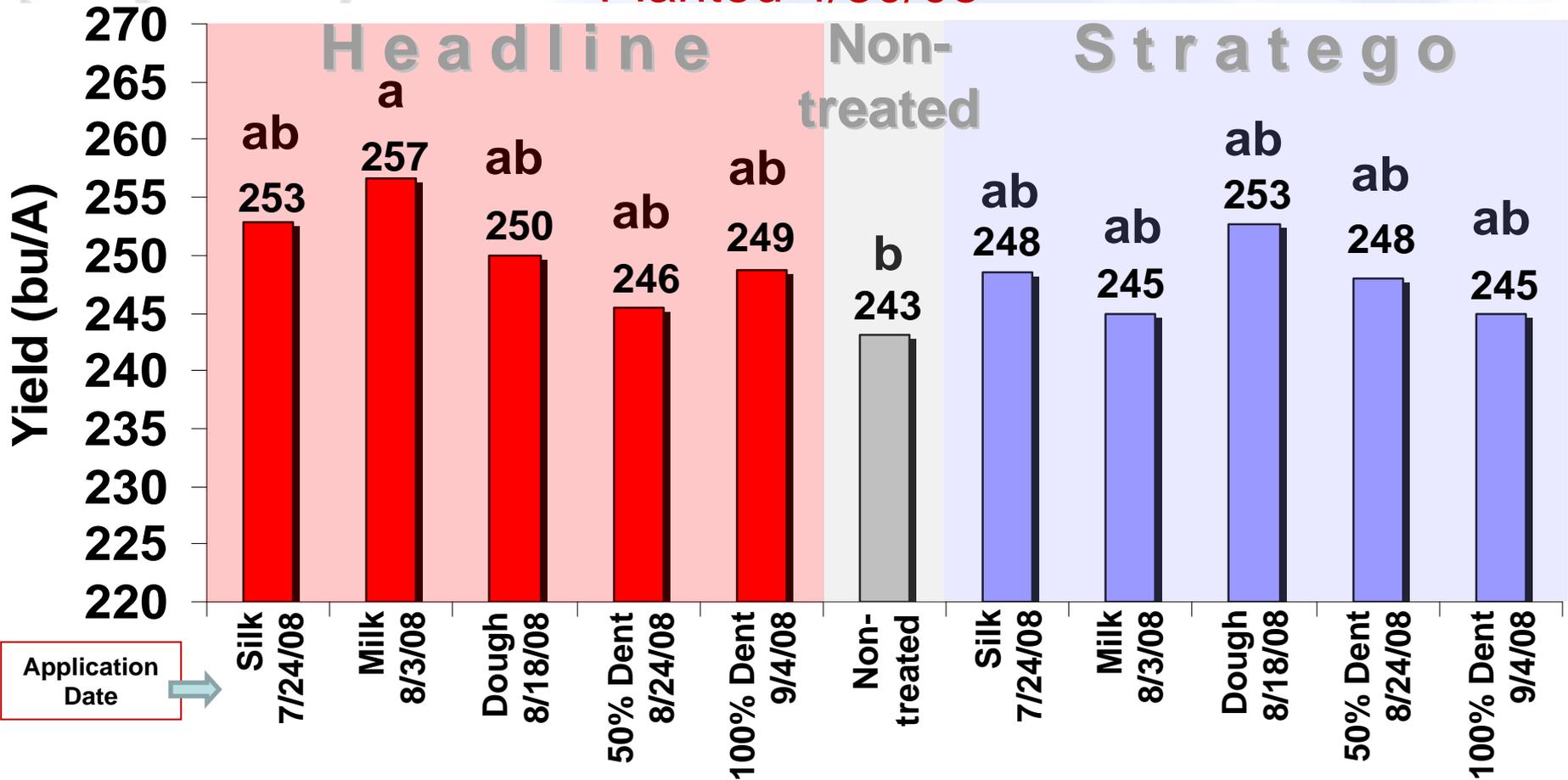
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# 2008 Fungicide Timing Trial in NE

Yield (bu/A)

DKC 60-18 (GLS rating = 7/fair)

Planted 4/30/08



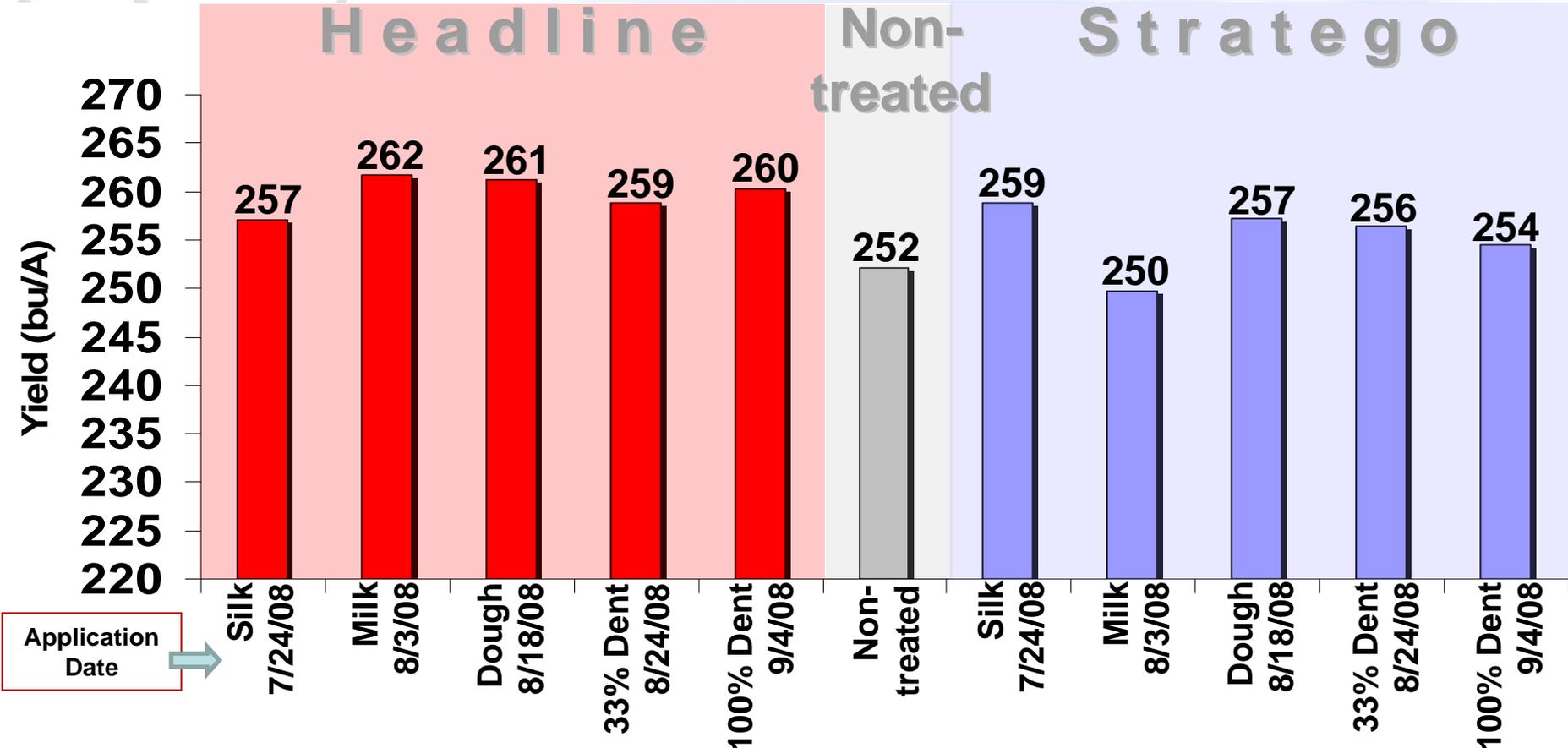
South Central Agricultural Lab near Clay Center, NE

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\*No statistical difference were found between treatments according to the Walter-Duncan K-ratio t Test.

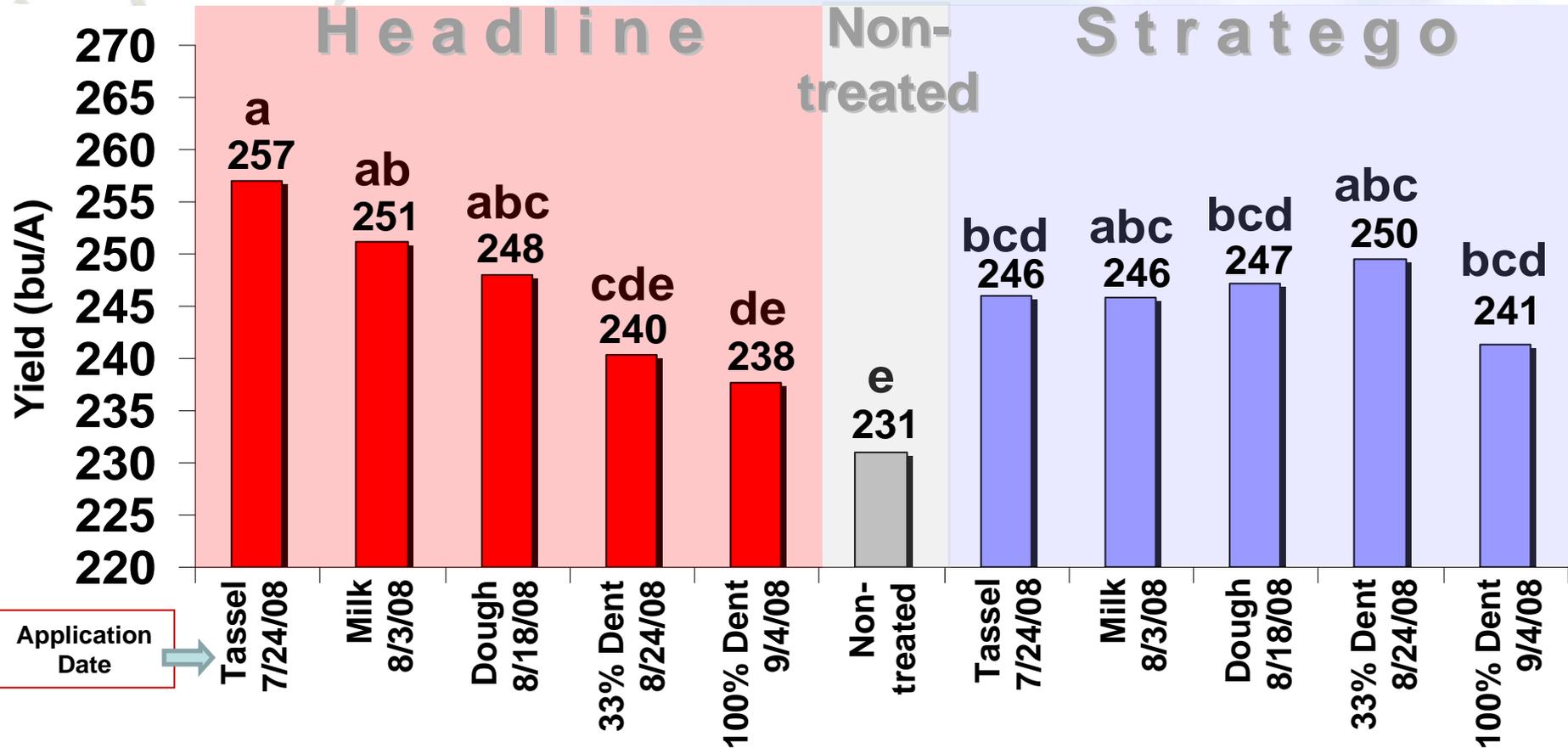
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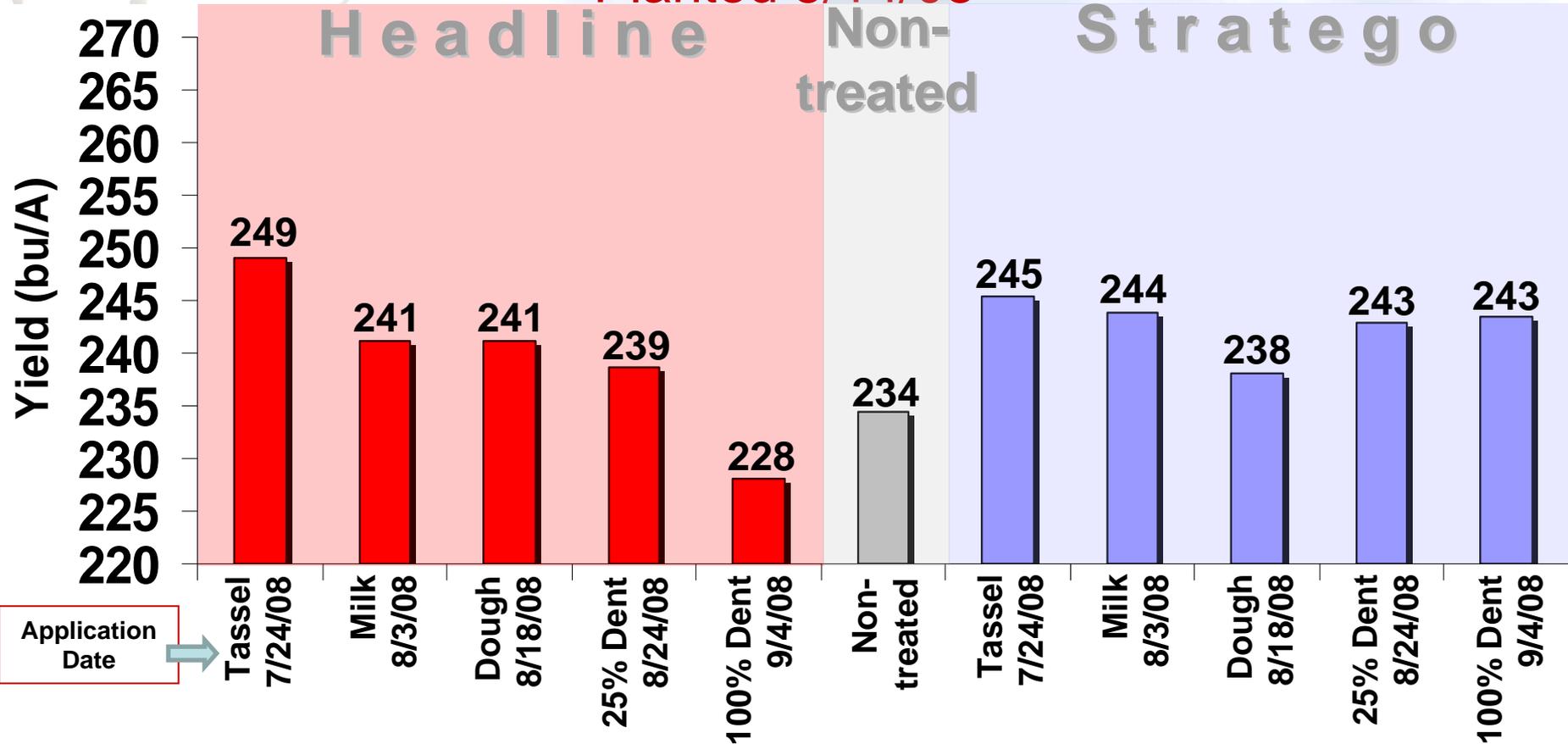
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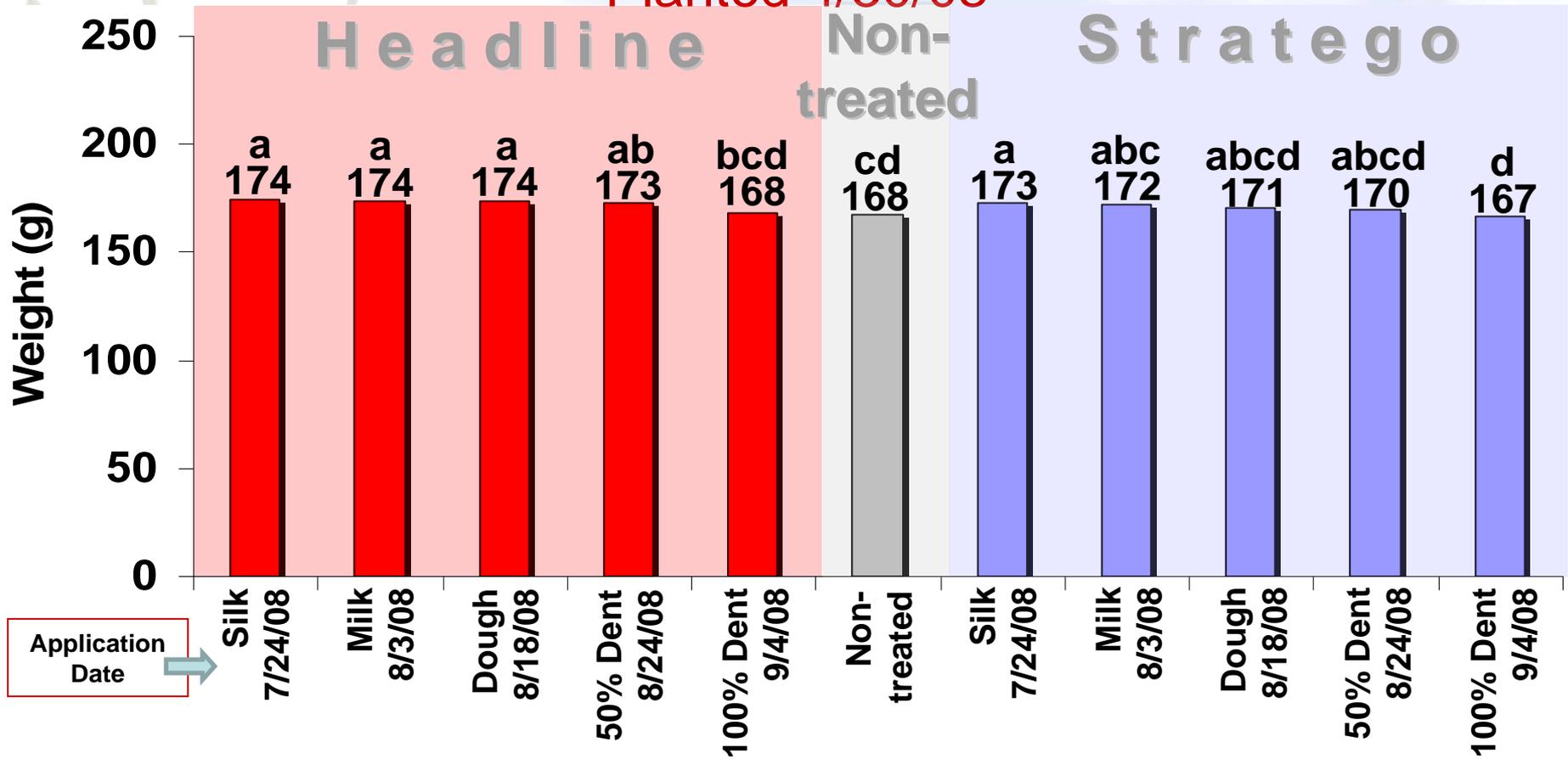
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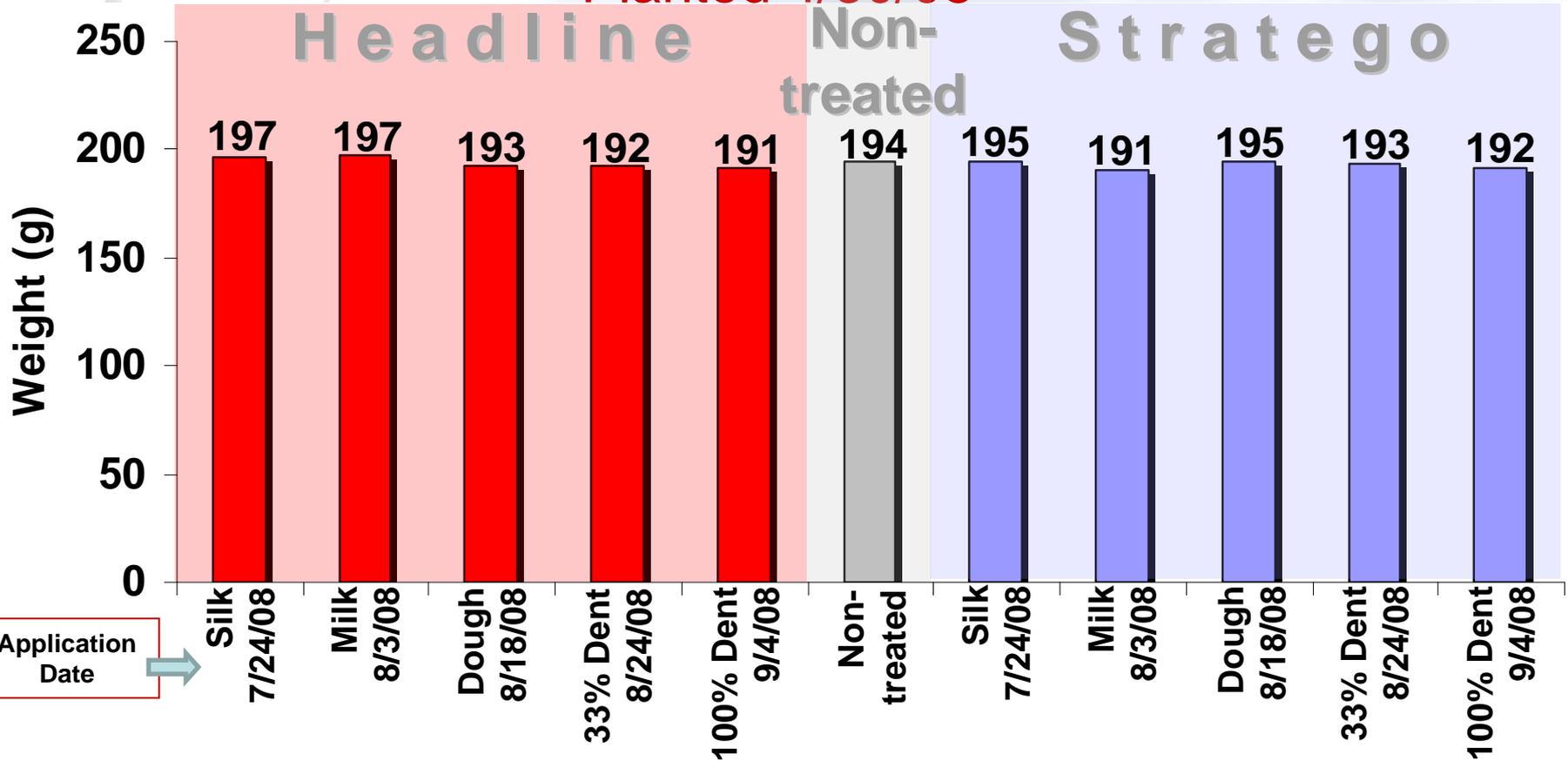
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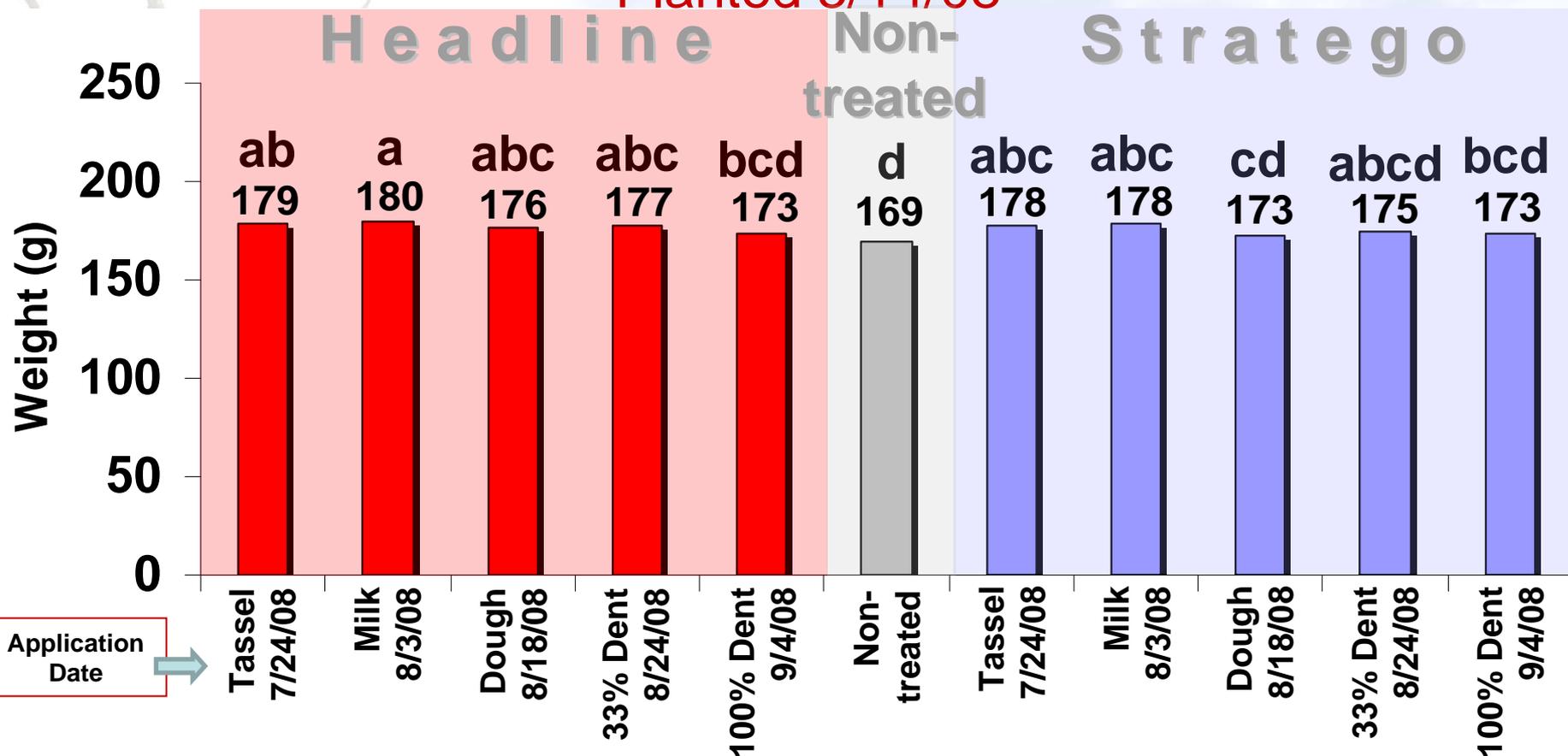
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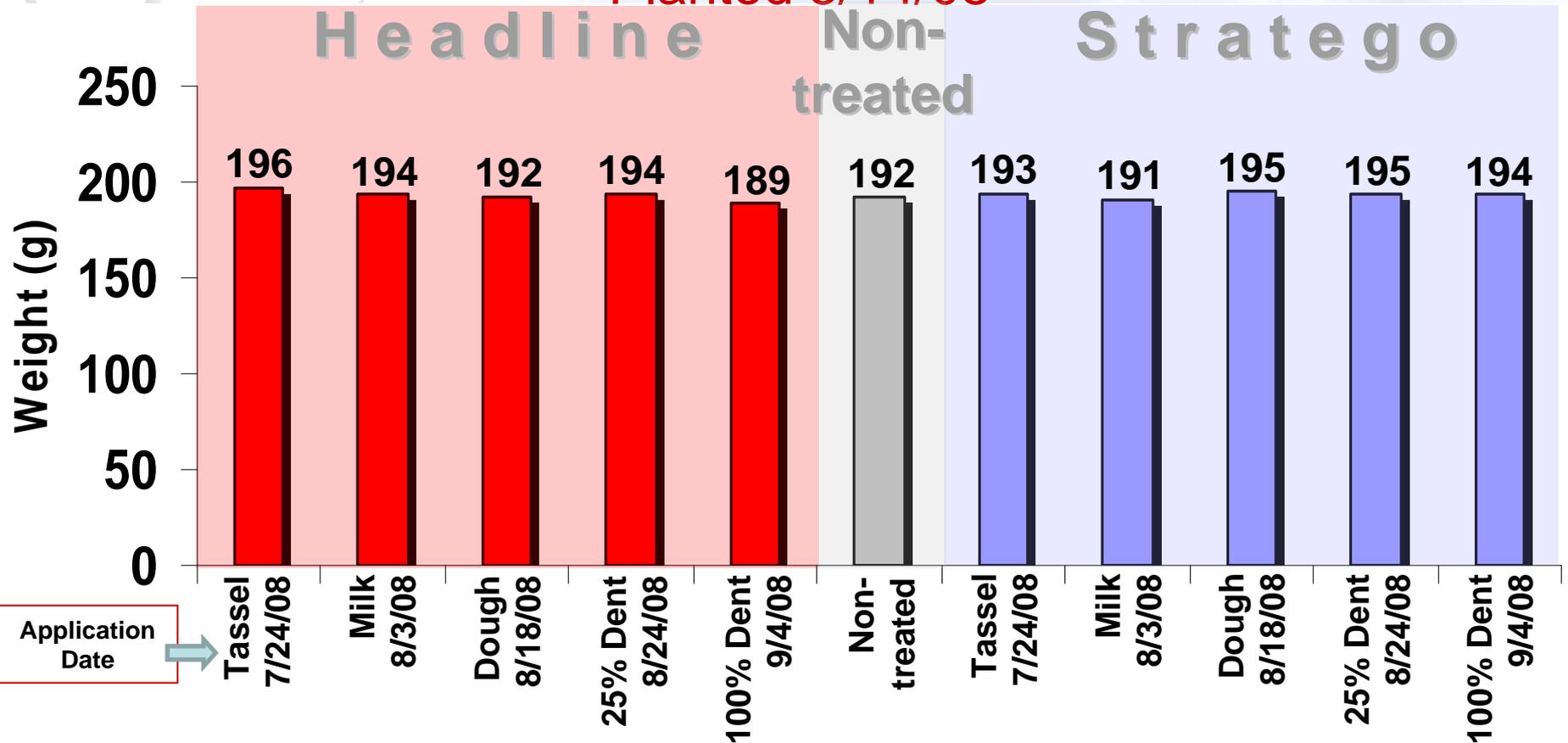
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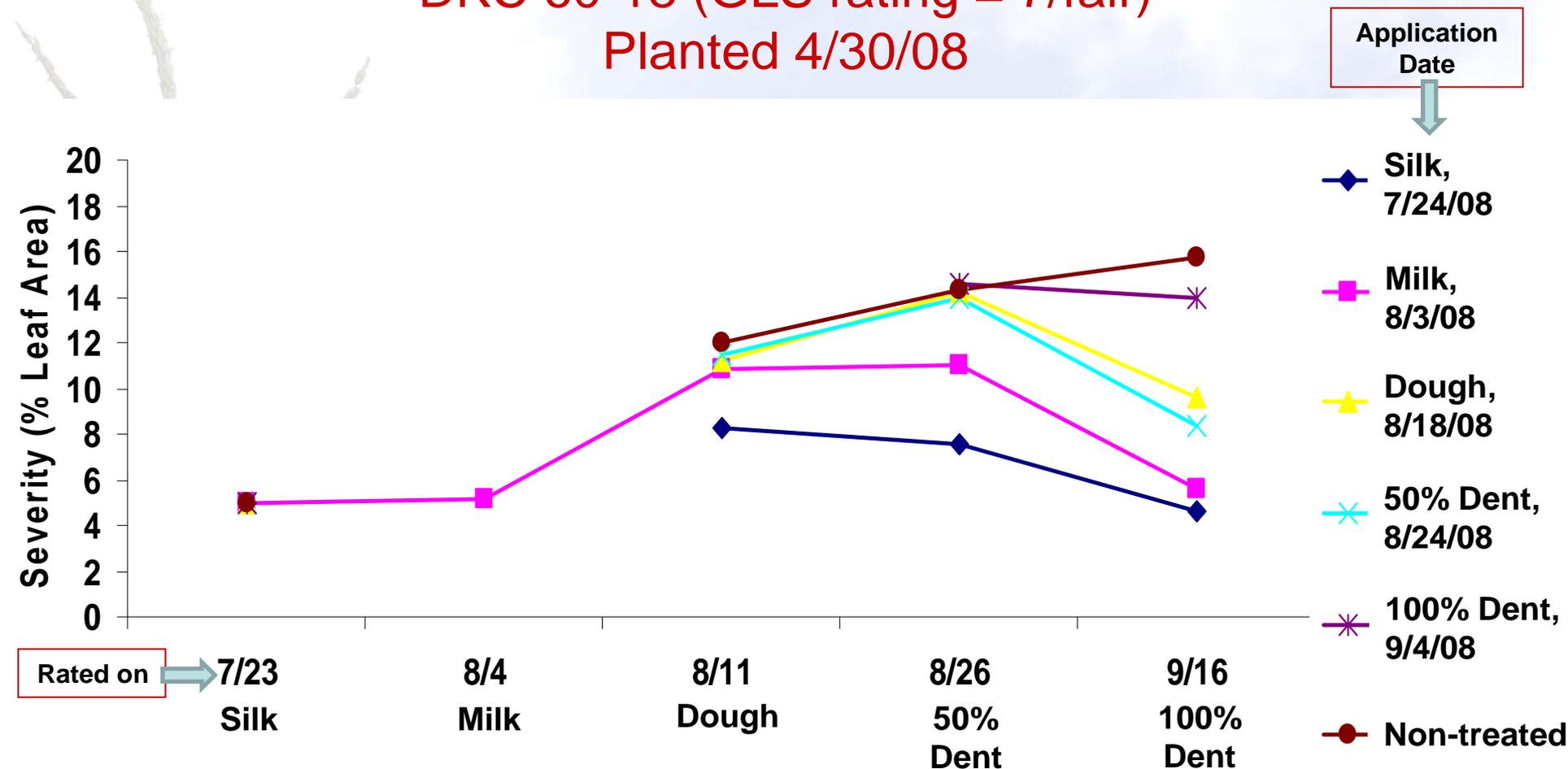
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# 2008 Fungicide Timing Trial-Headline in NE

## Gray Leaf Spot Disease Severity

DKC 60-18 (GLS rating = 7/fair)

Planted 4/30/08



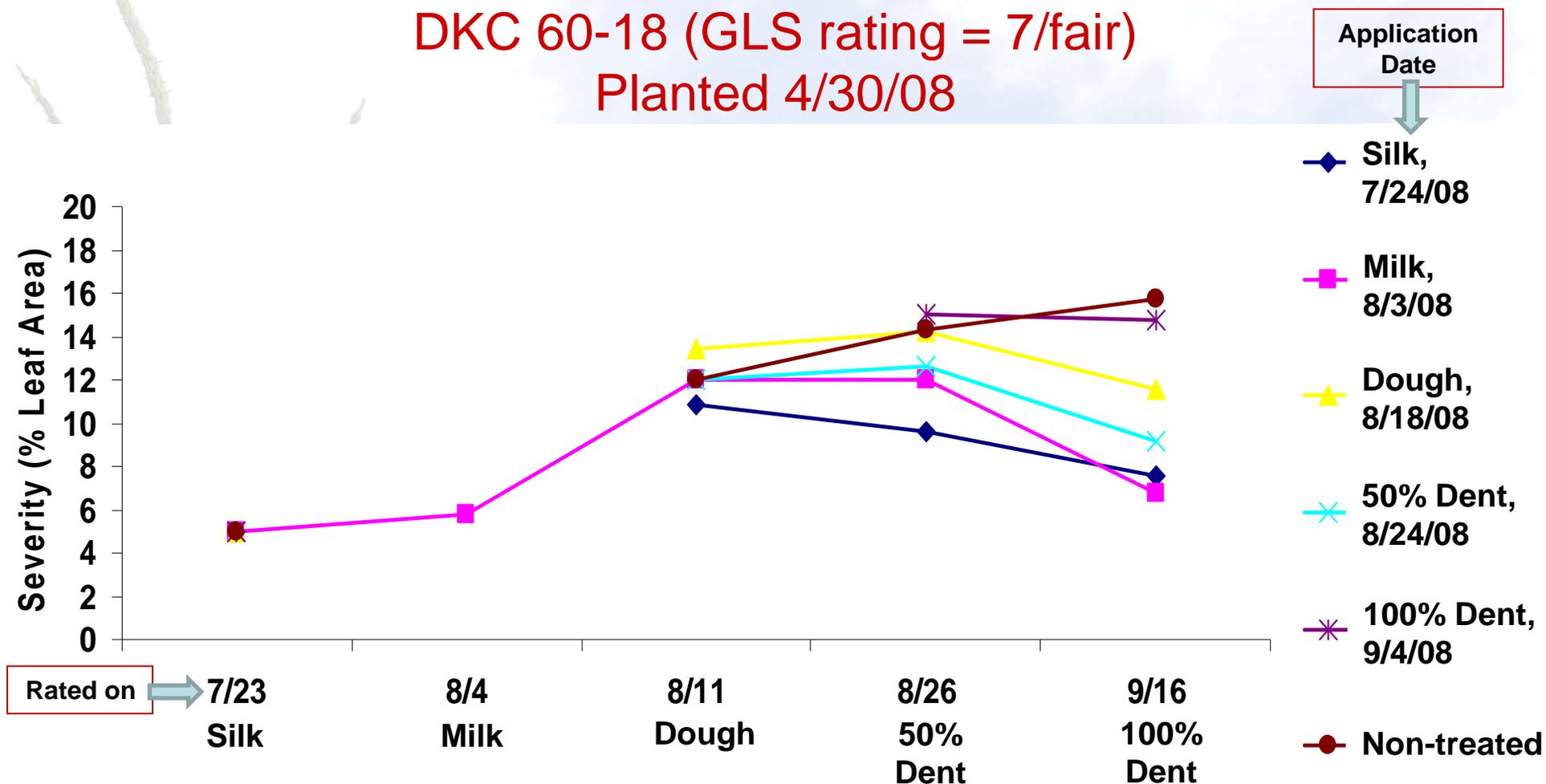
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# 2008 Fungicide Timing Trial-Stratego in NE

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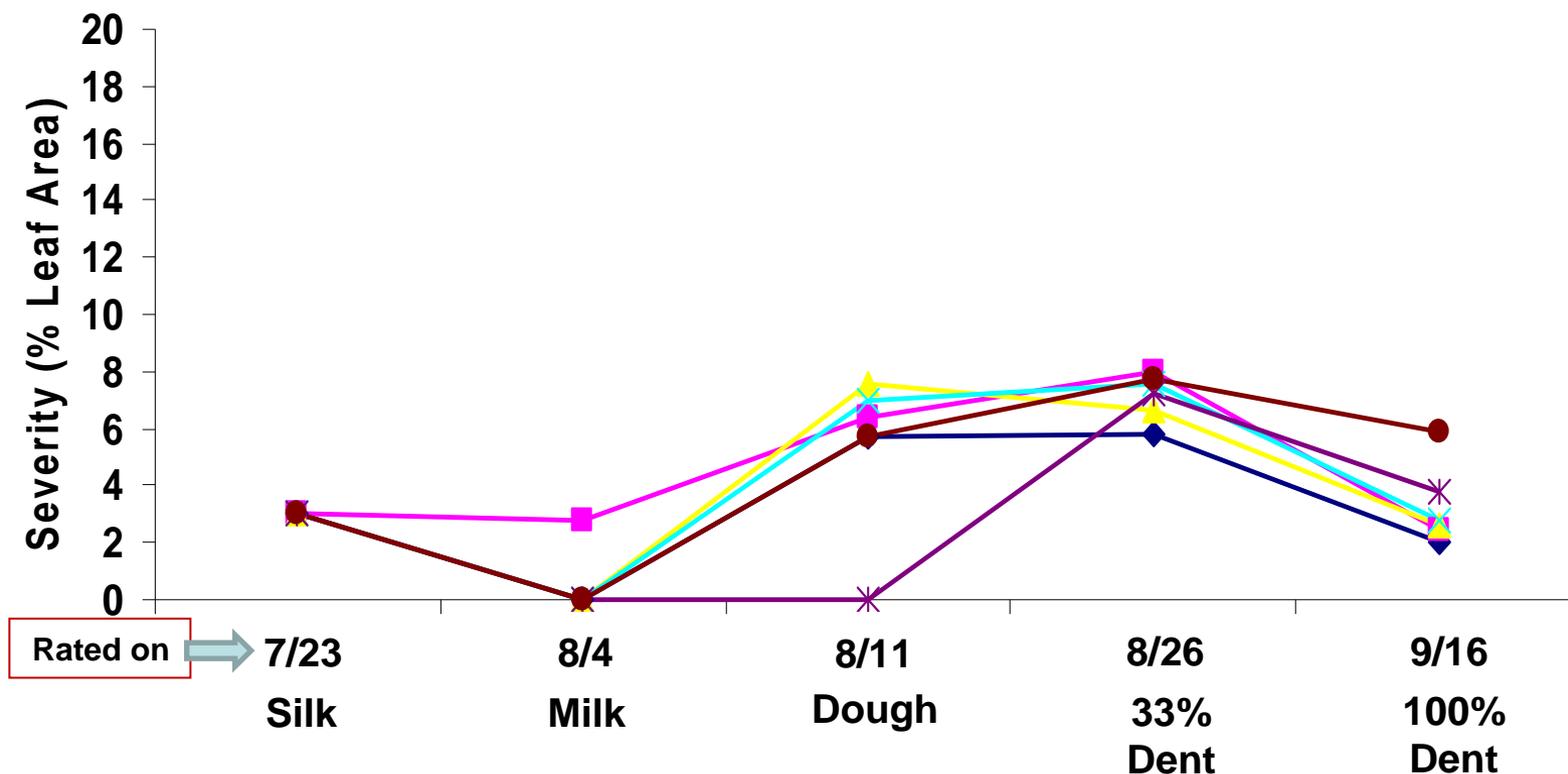
## Gray Leaf Spot Disease Severity

DKC 61-69 (GLS rating = 5/good)

Planted 4/30/08

Application Date

- ◆ Silk, 7/24/08
- Milk, 8/3/08
- ▲ Dough, 8/18/08
- ✕ 33% Dent, 8/24/08
- \* 100% Dent, 9/4/08
- Non-treated



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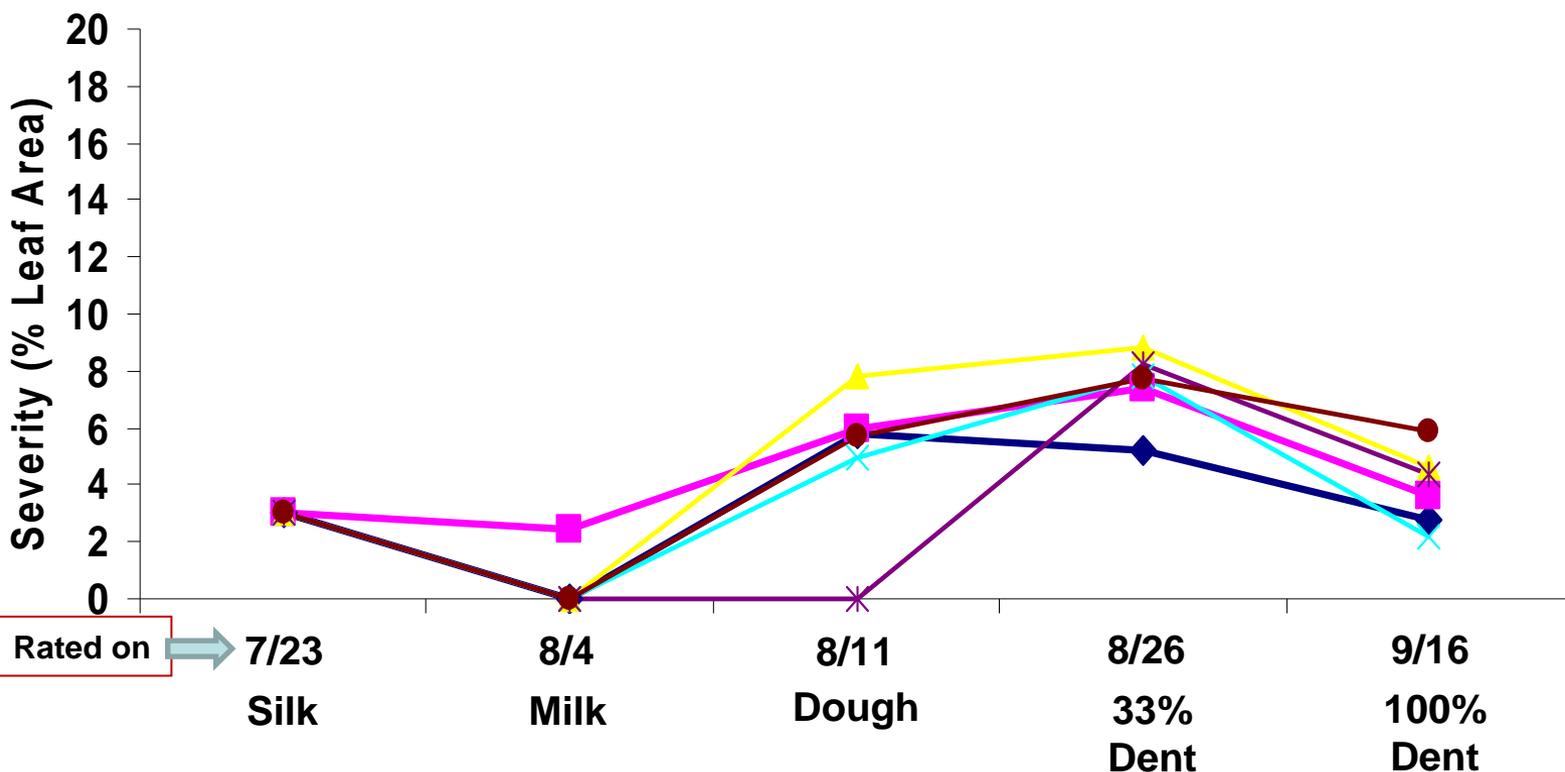
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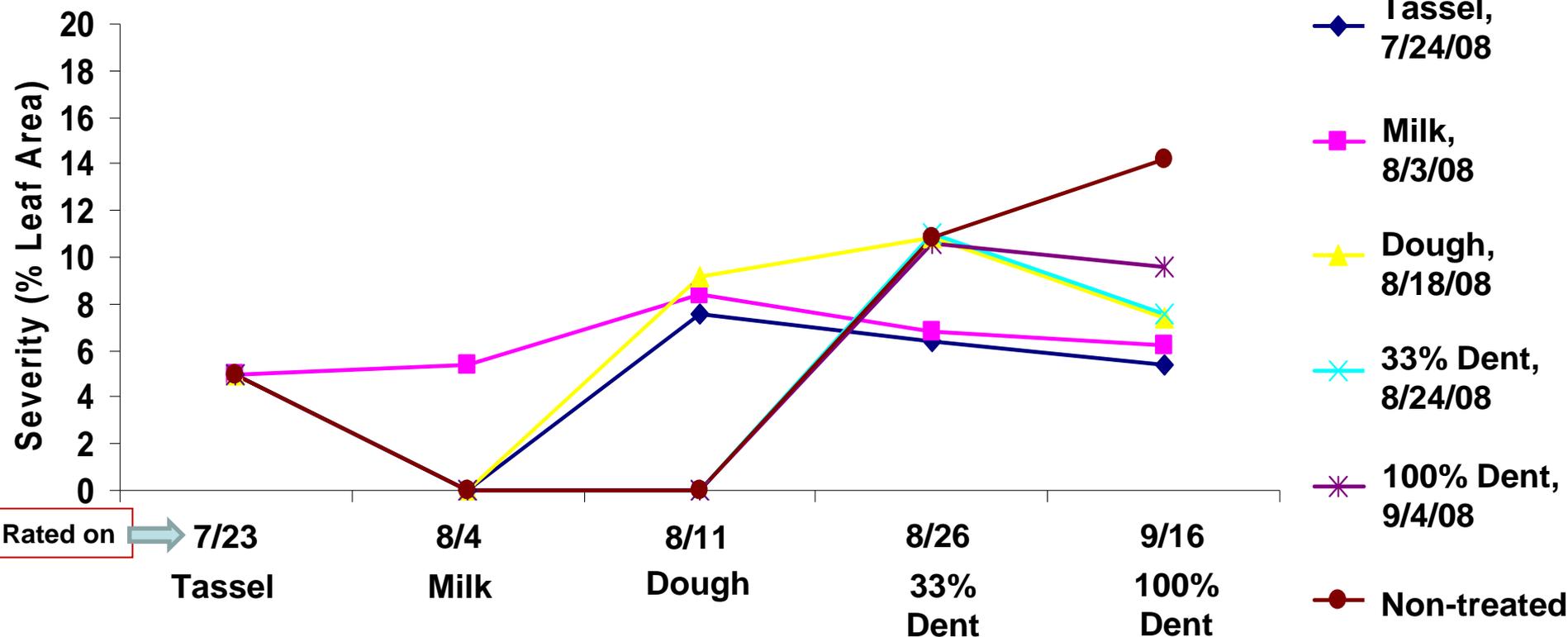
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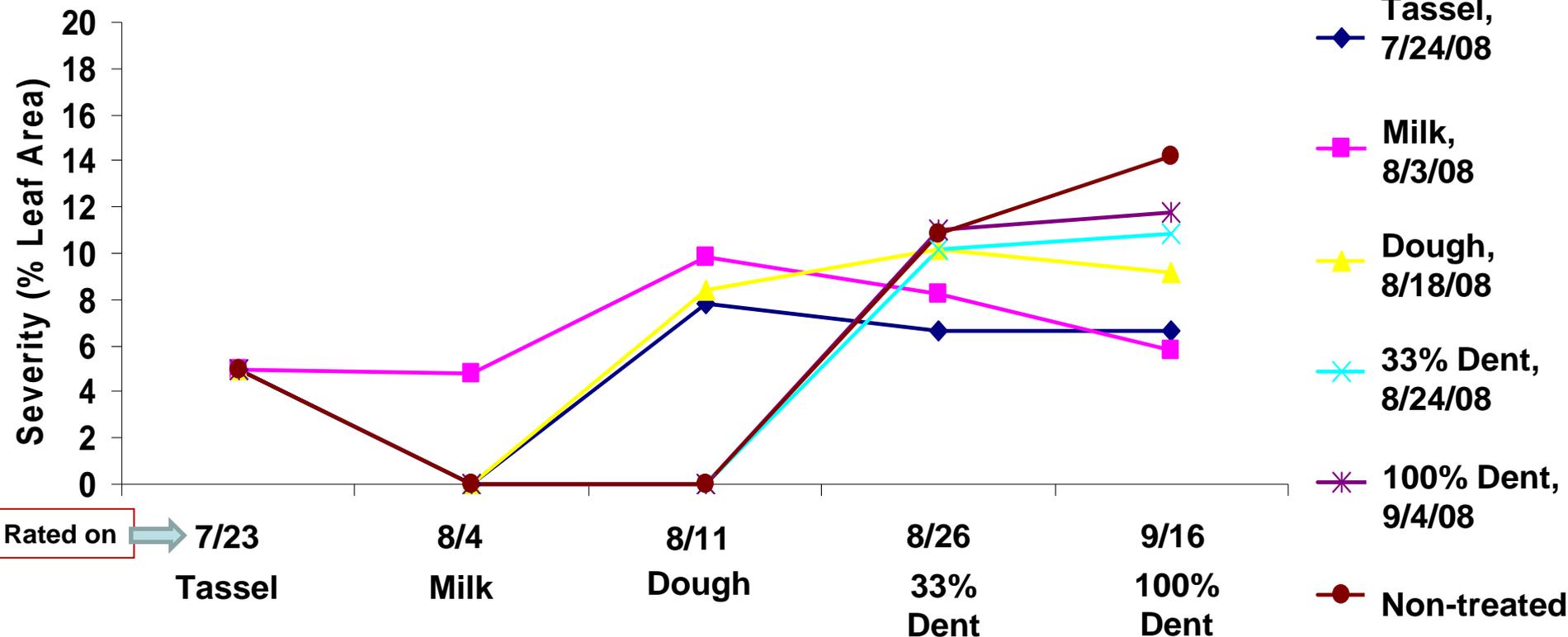
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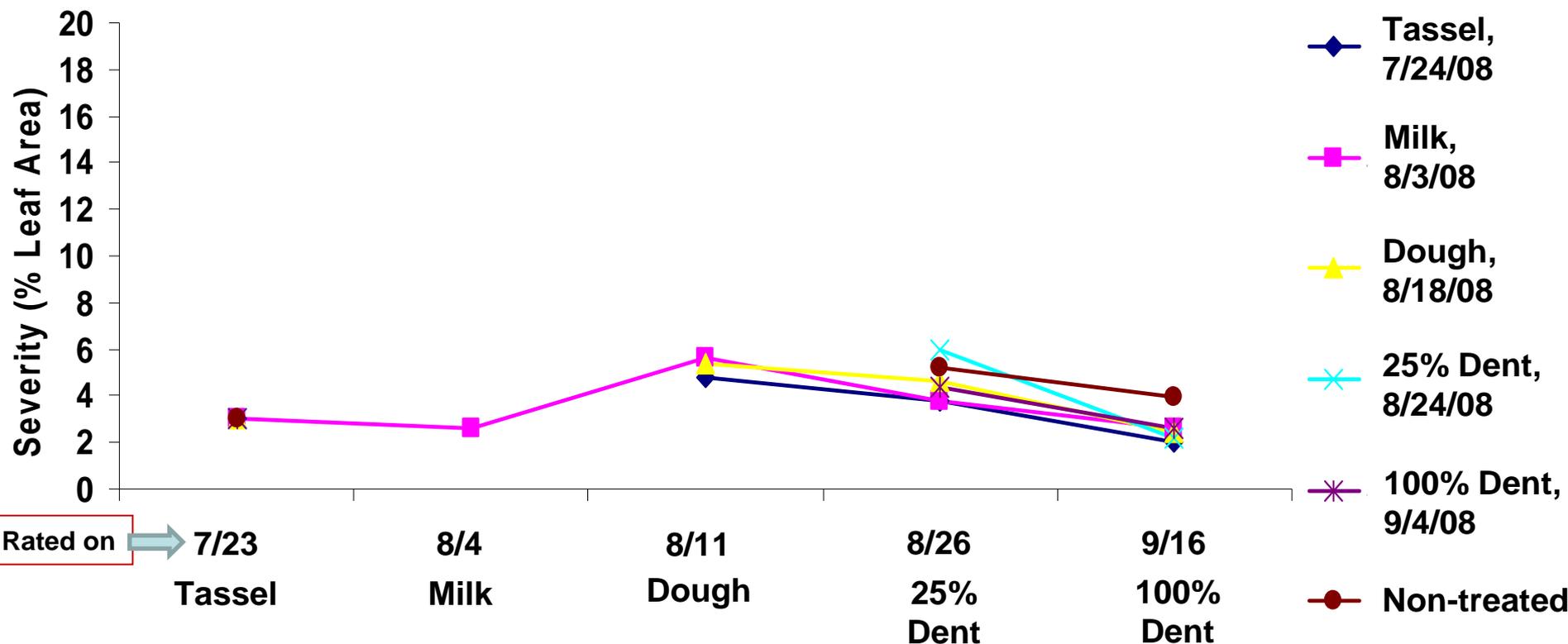
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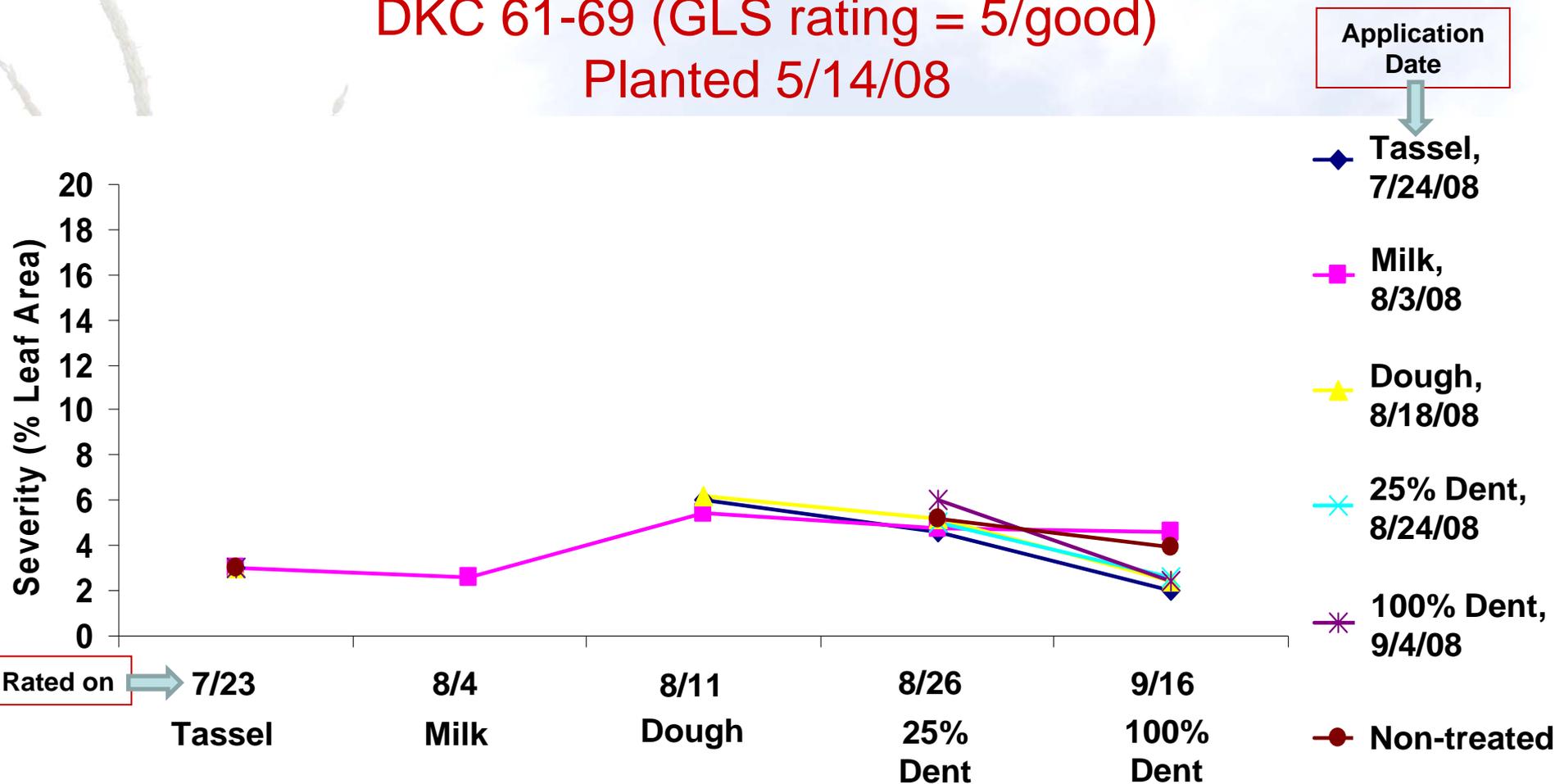
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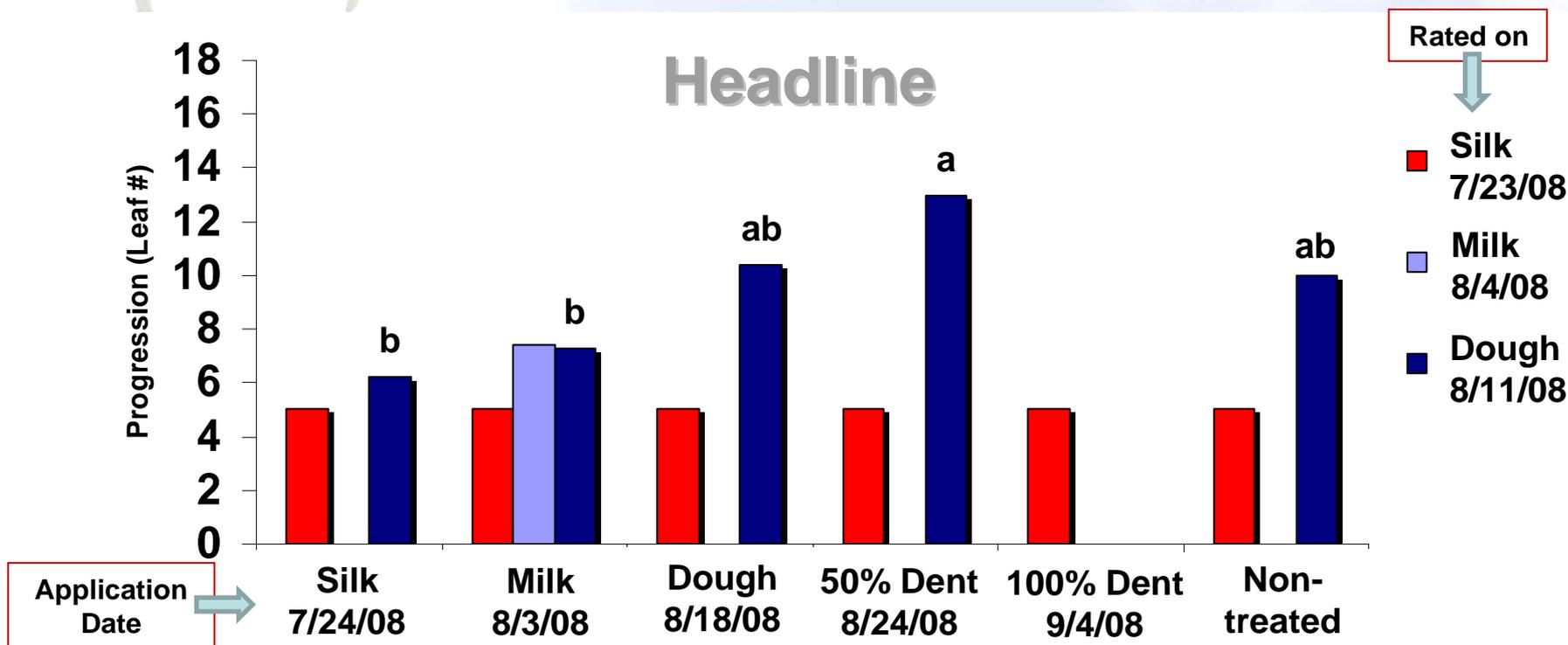
South Central Agricultural Lab near Clay Center, NE

# 2008 Fungicide Timing Trial

## Gray Leaf Spot Progression

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Planted 4/30/08



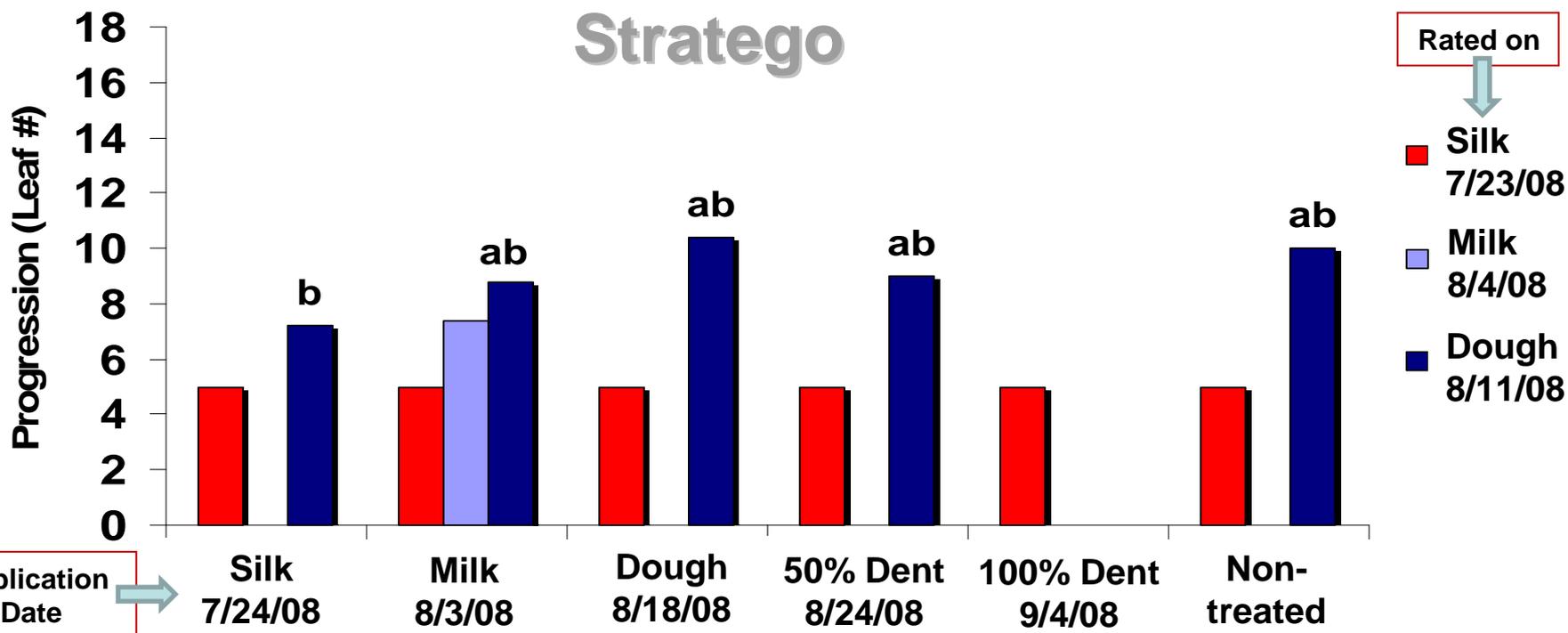
- GLS was on tassel leaf of all treatments by 8/26/2008
- South Central Agricultural Lab near Clay Center, NE

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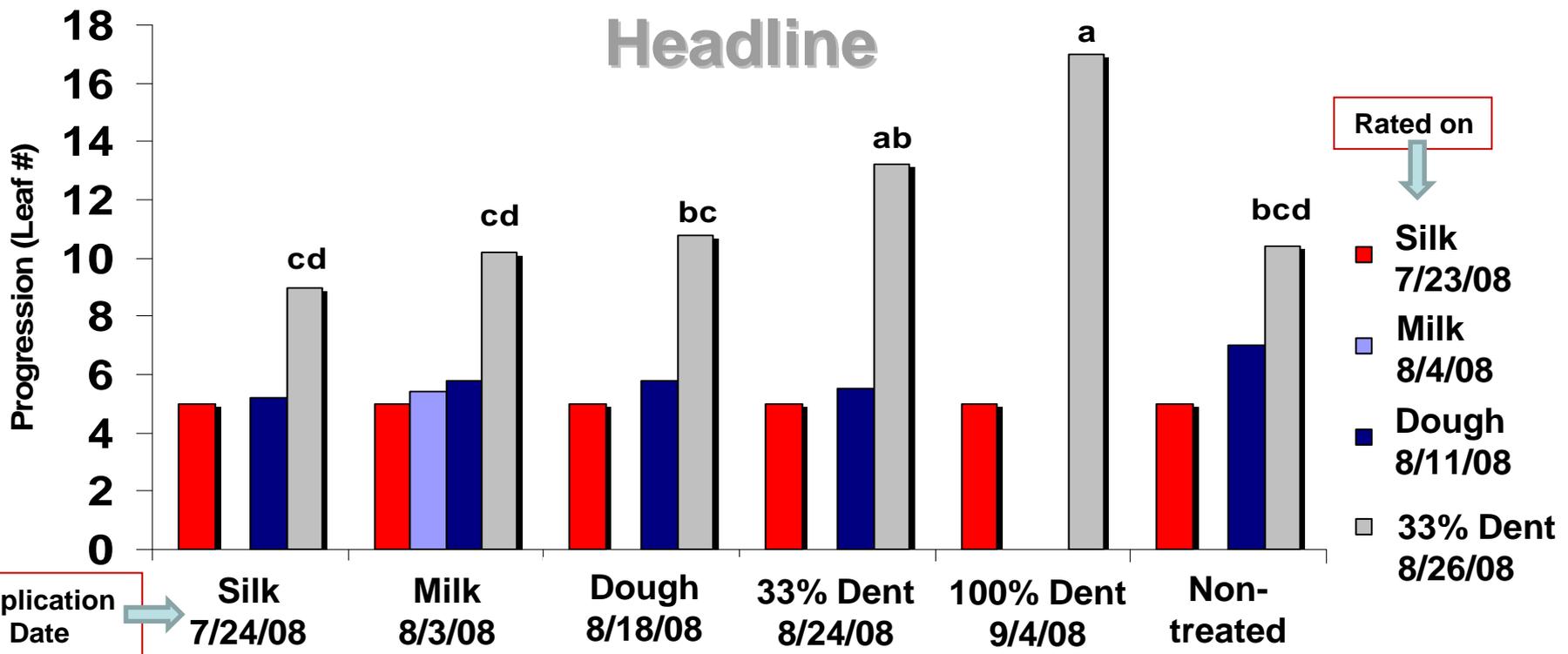
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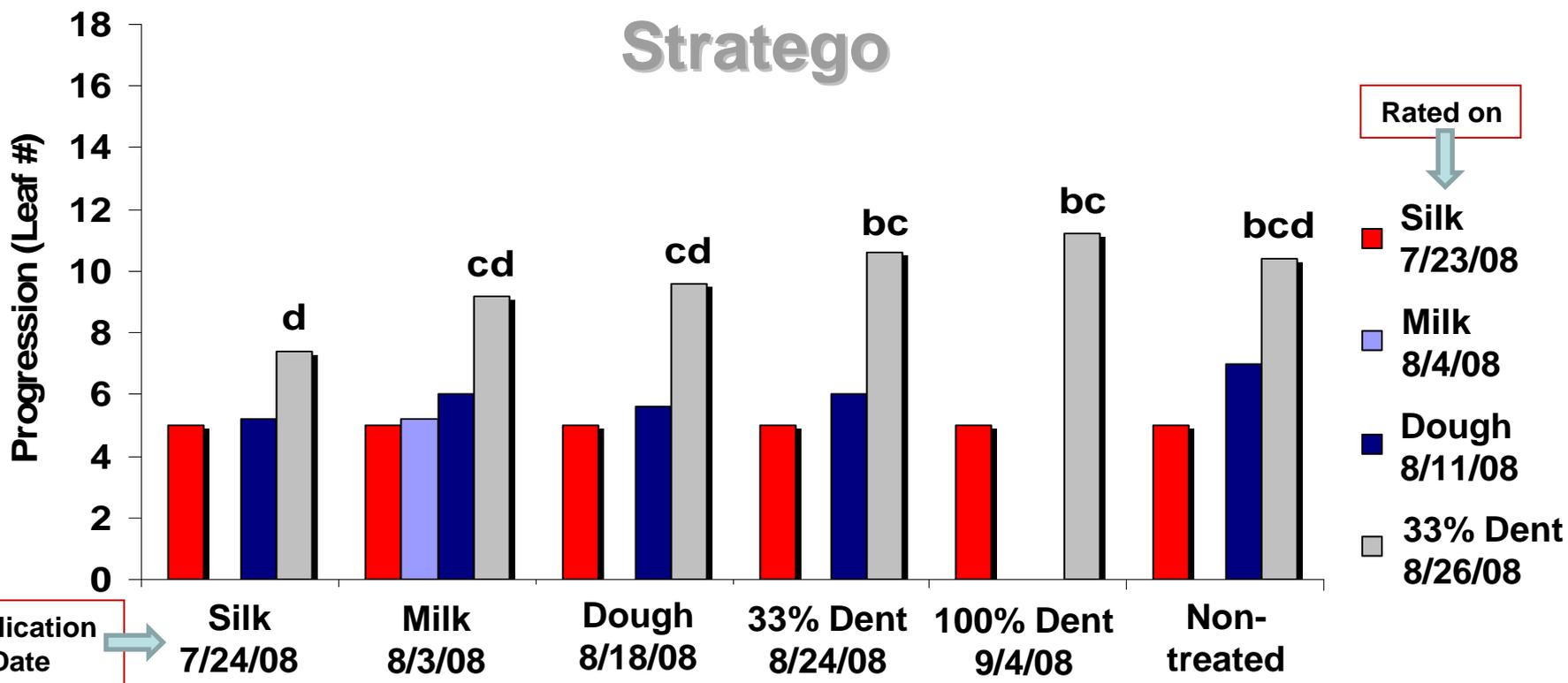
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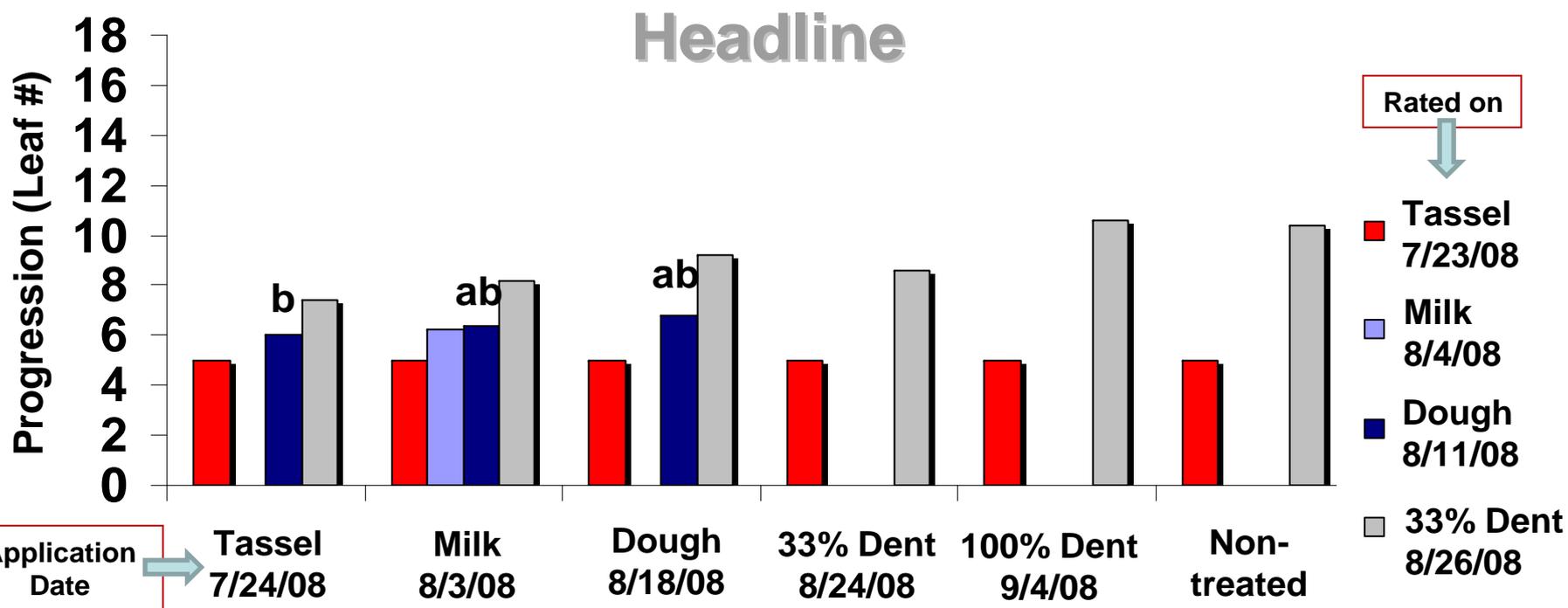


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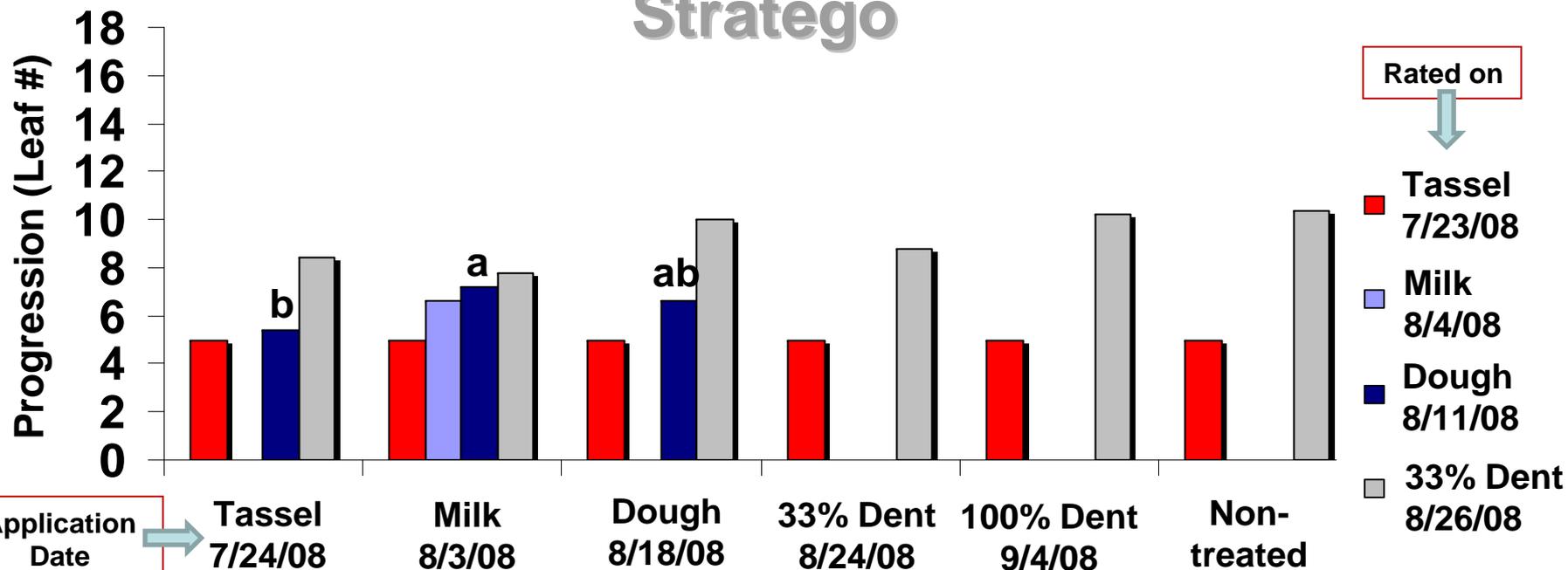
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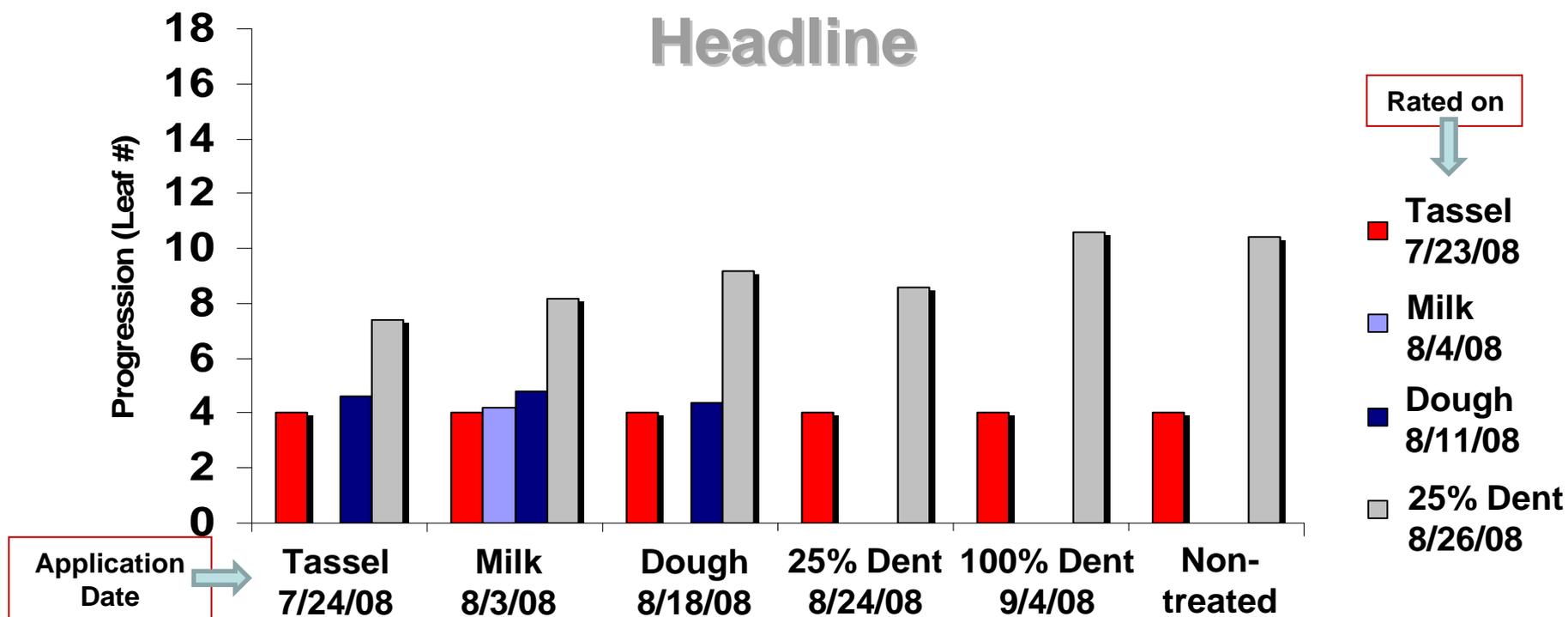
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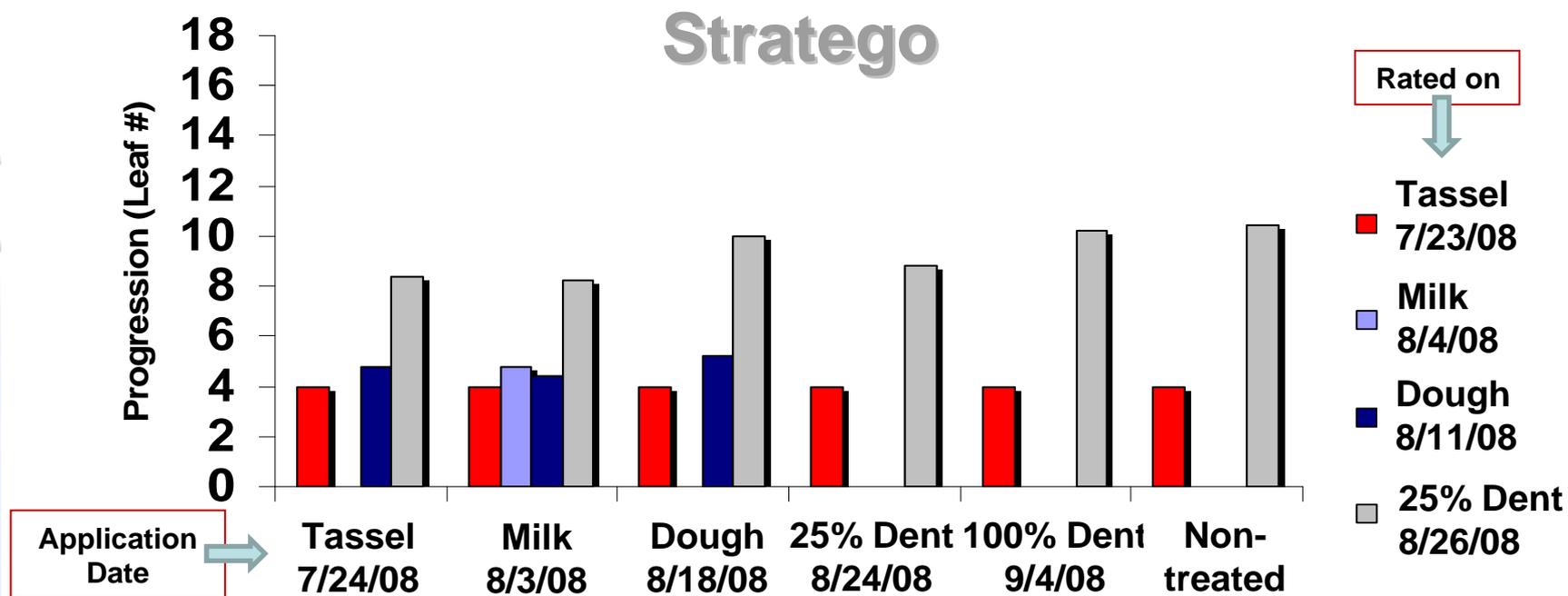
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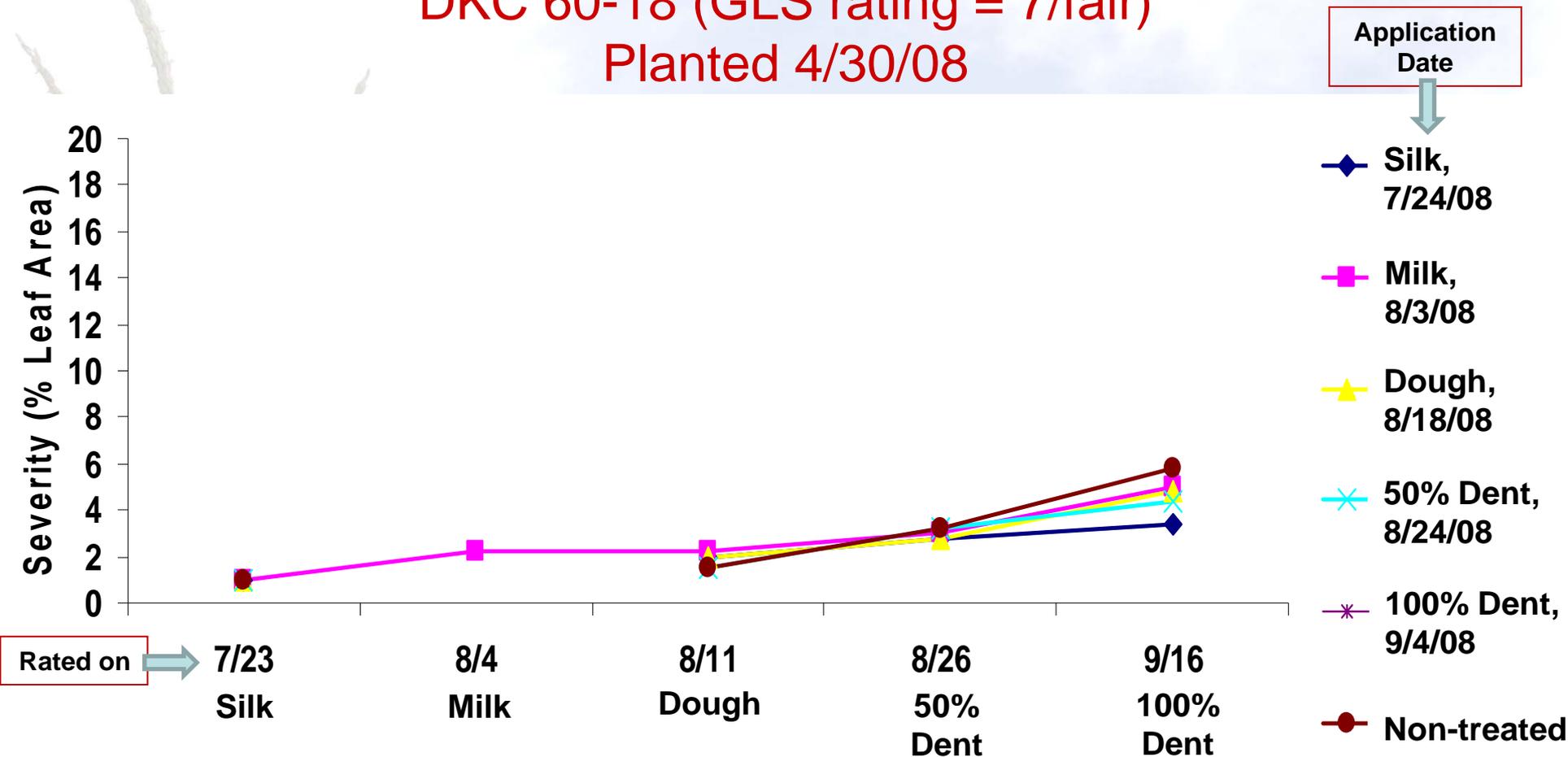
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# 2008 Fungicide Timing Trial-Headline in NE

## Common Rust Disease Severity

DKC 60-18 (GLS rating = 7/fair)

Planted 4/30/08



Southern rust occurred at low severity (< 4%)

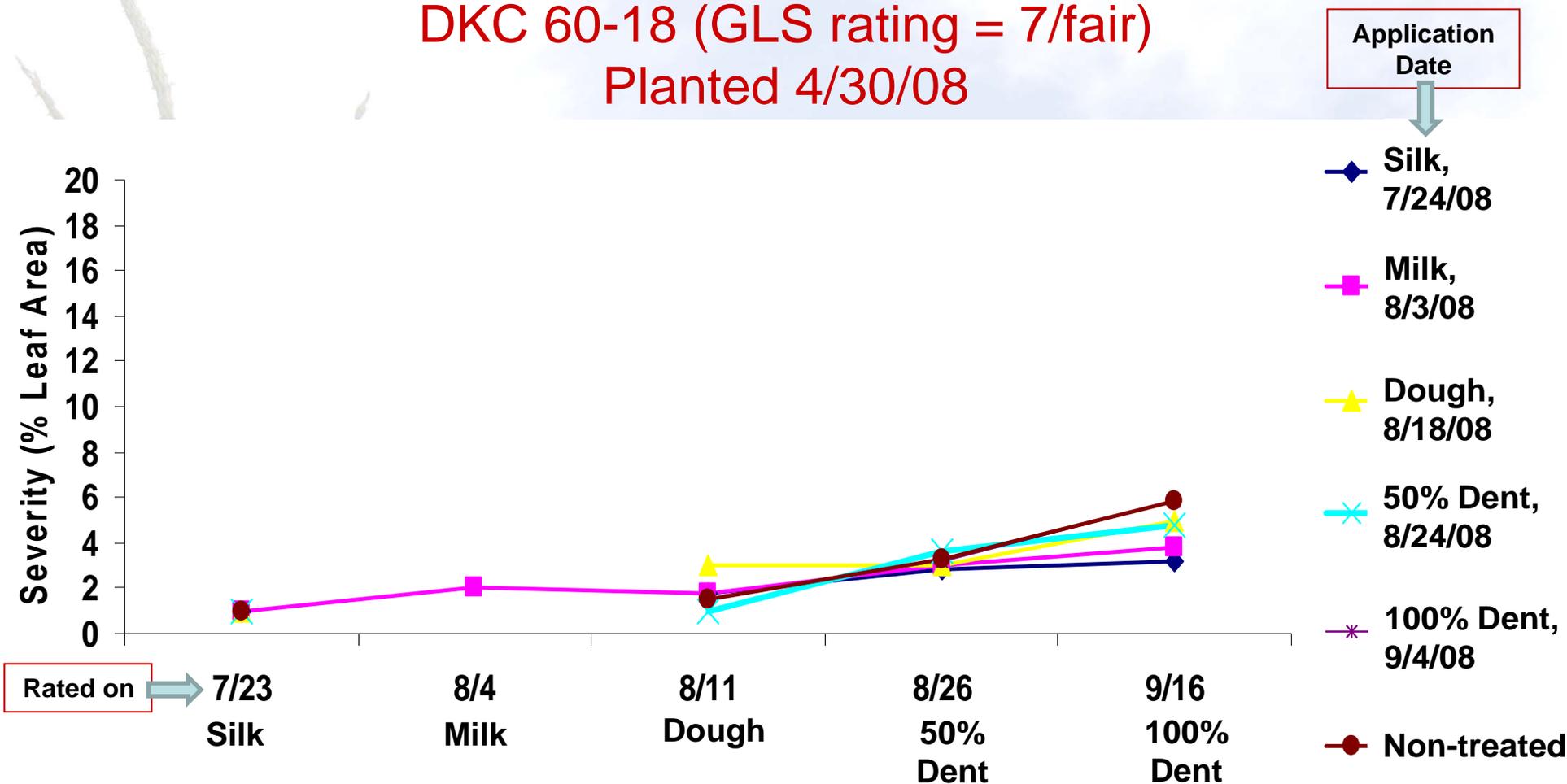
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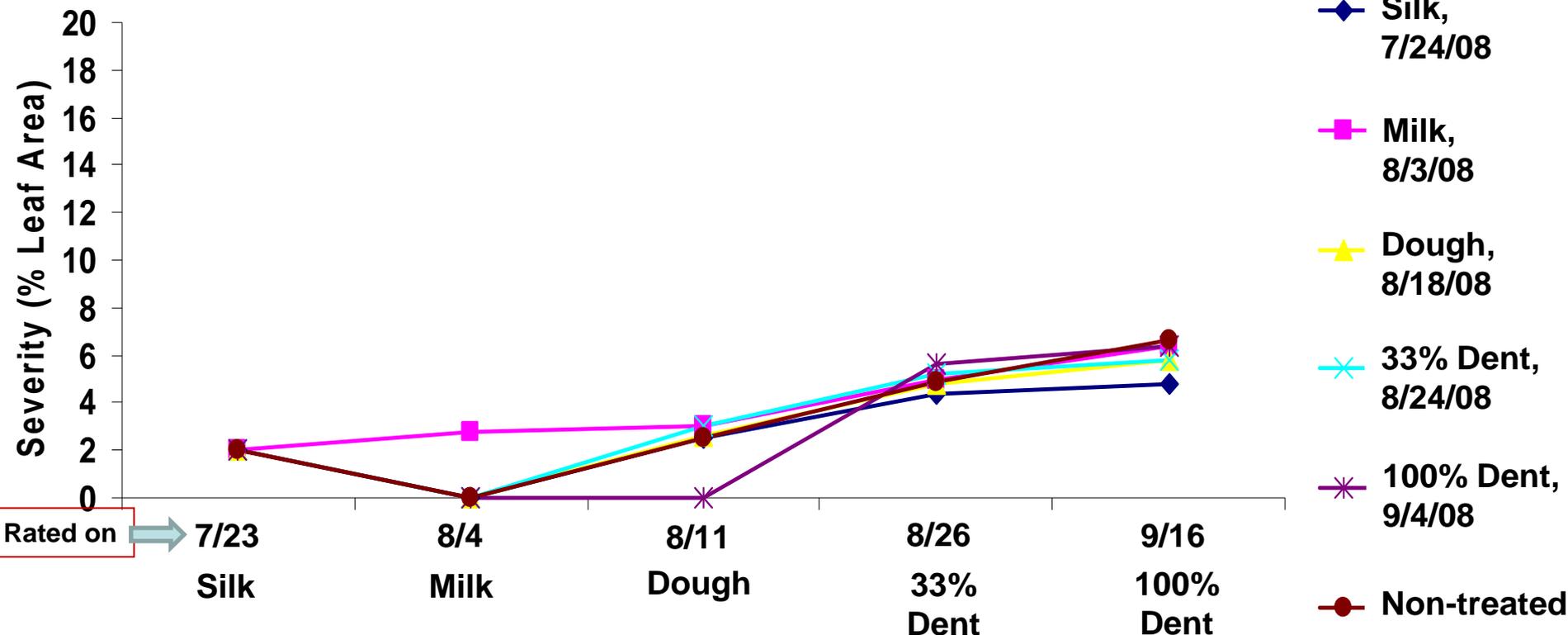
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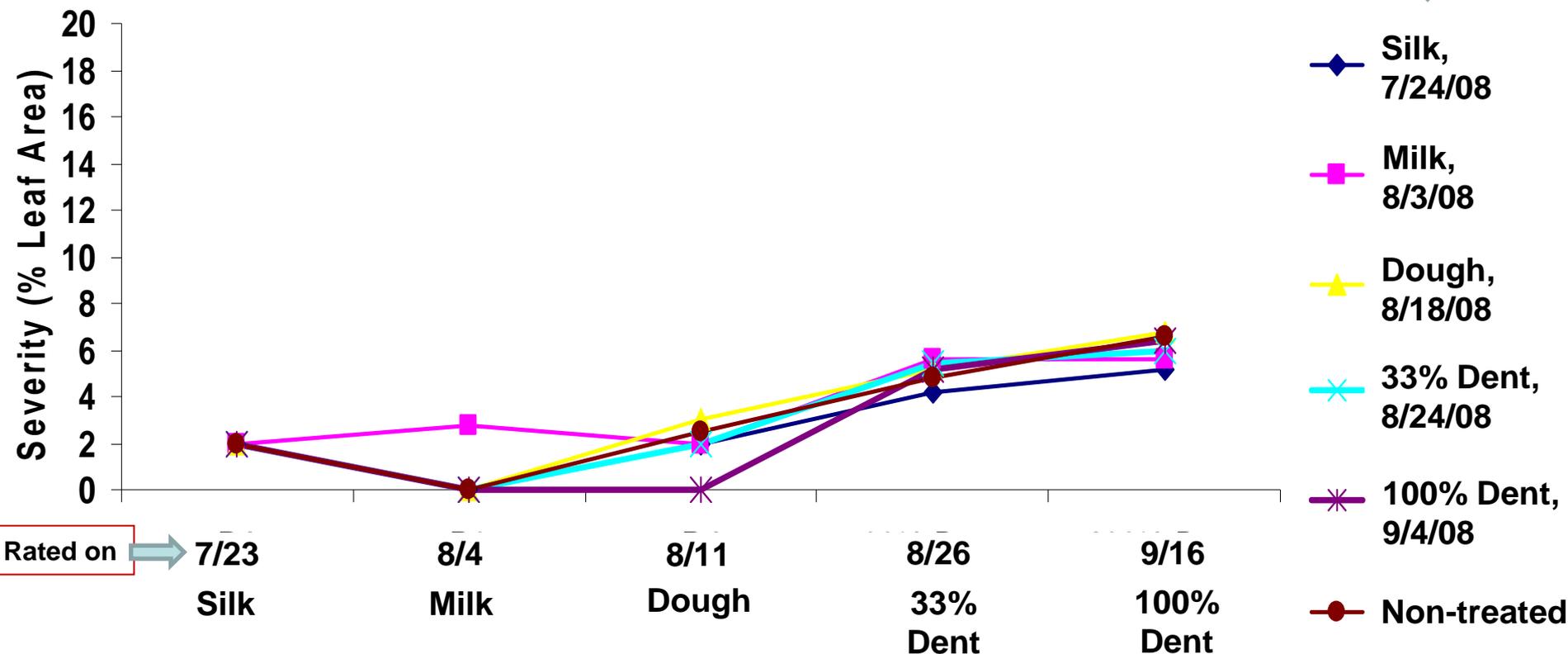
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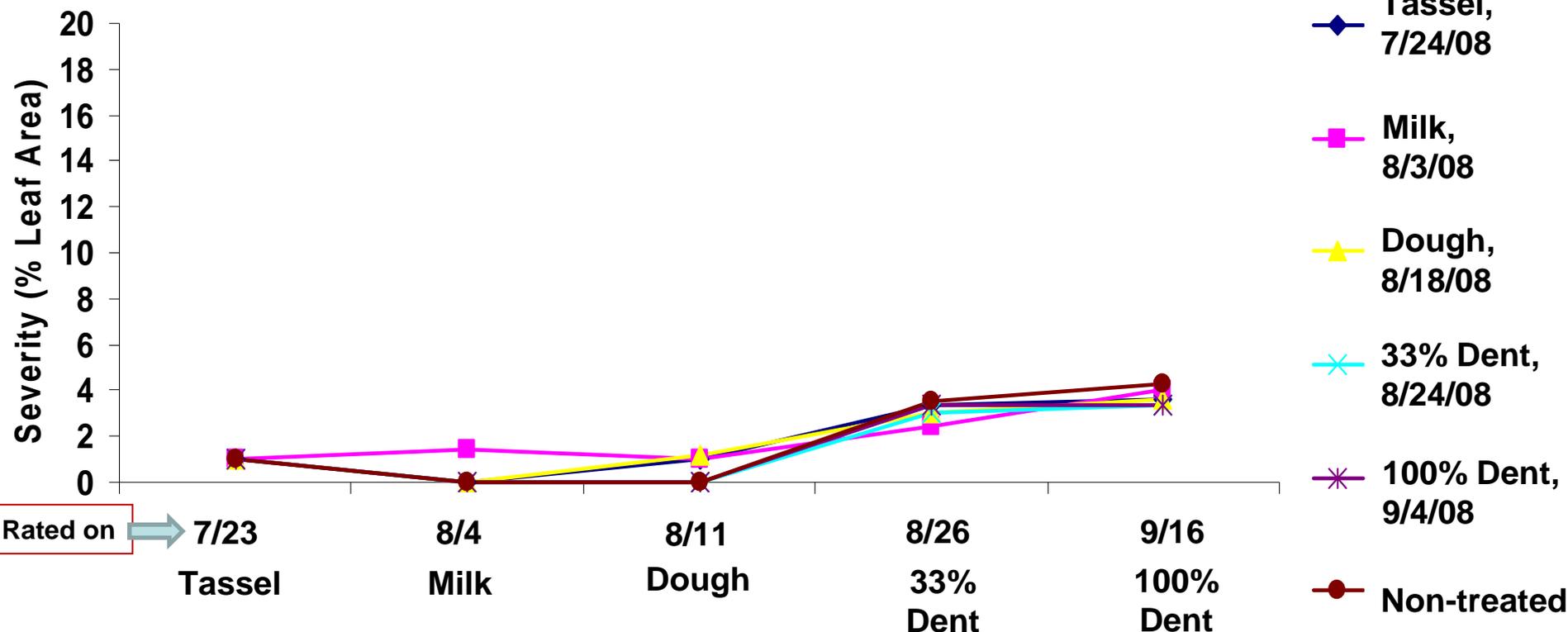
South Central Agricultural Lab near Clay Center, NE

# 2008 Fungicide Timing Trial-Headline in NE

## Common Rust Disease Severity

DKC 60-18 (GLS rating = 7/fair)

Planted 5/14/08



Southern rust occurred at low severity (< 2%)

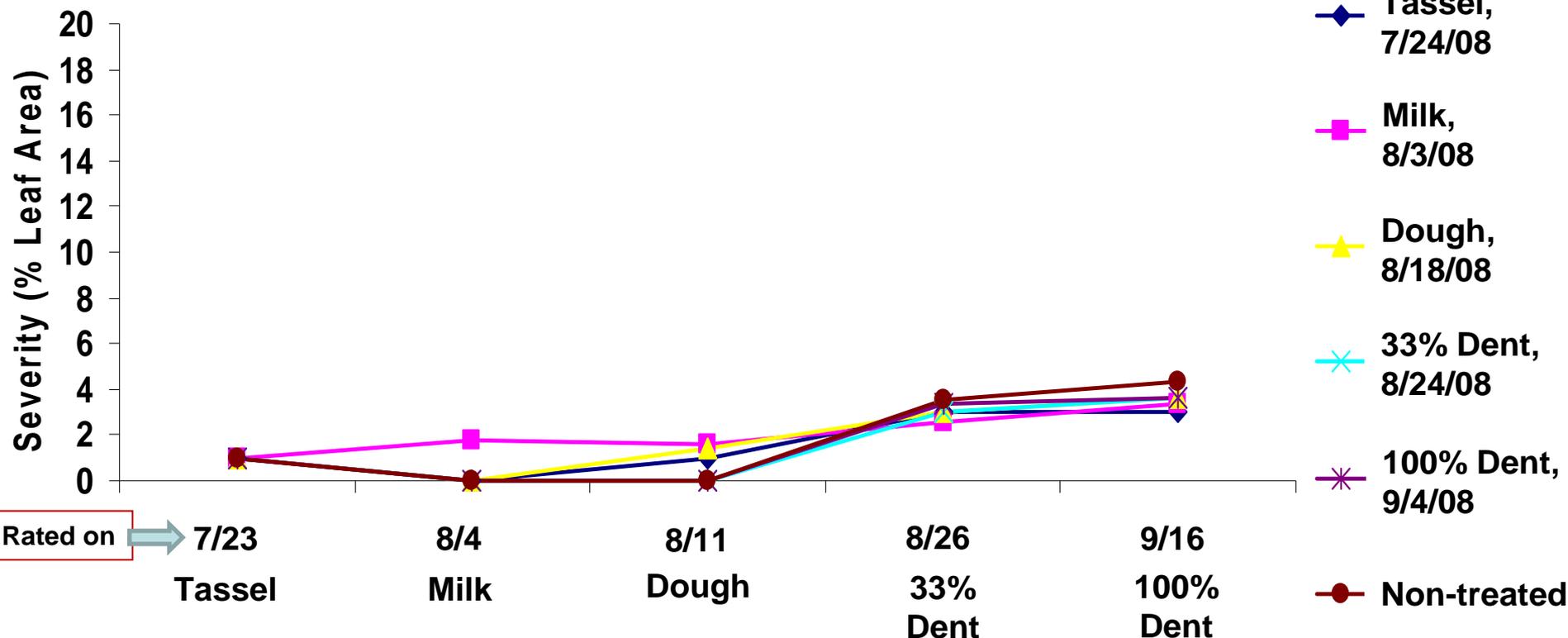
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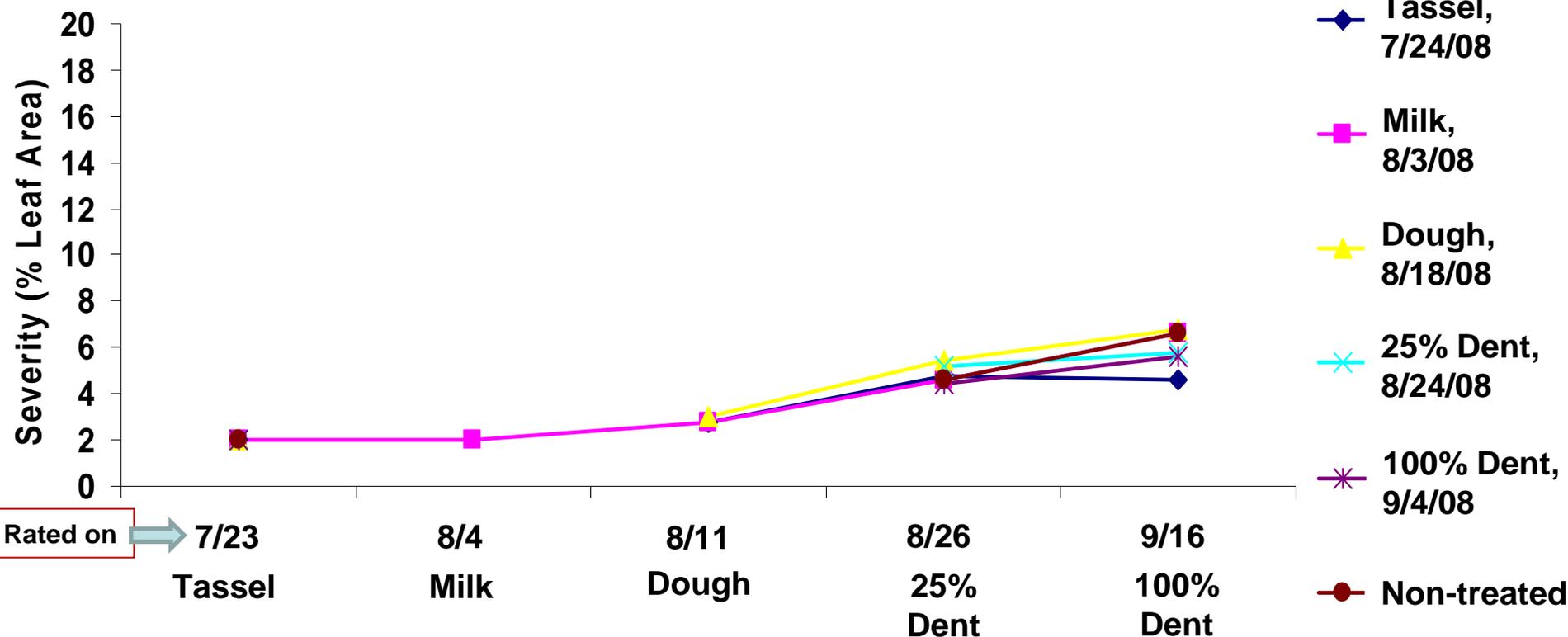
Southern rust occurred at low severity (< 1%)  
South Central Agricultural Lab near Clay Center, NE

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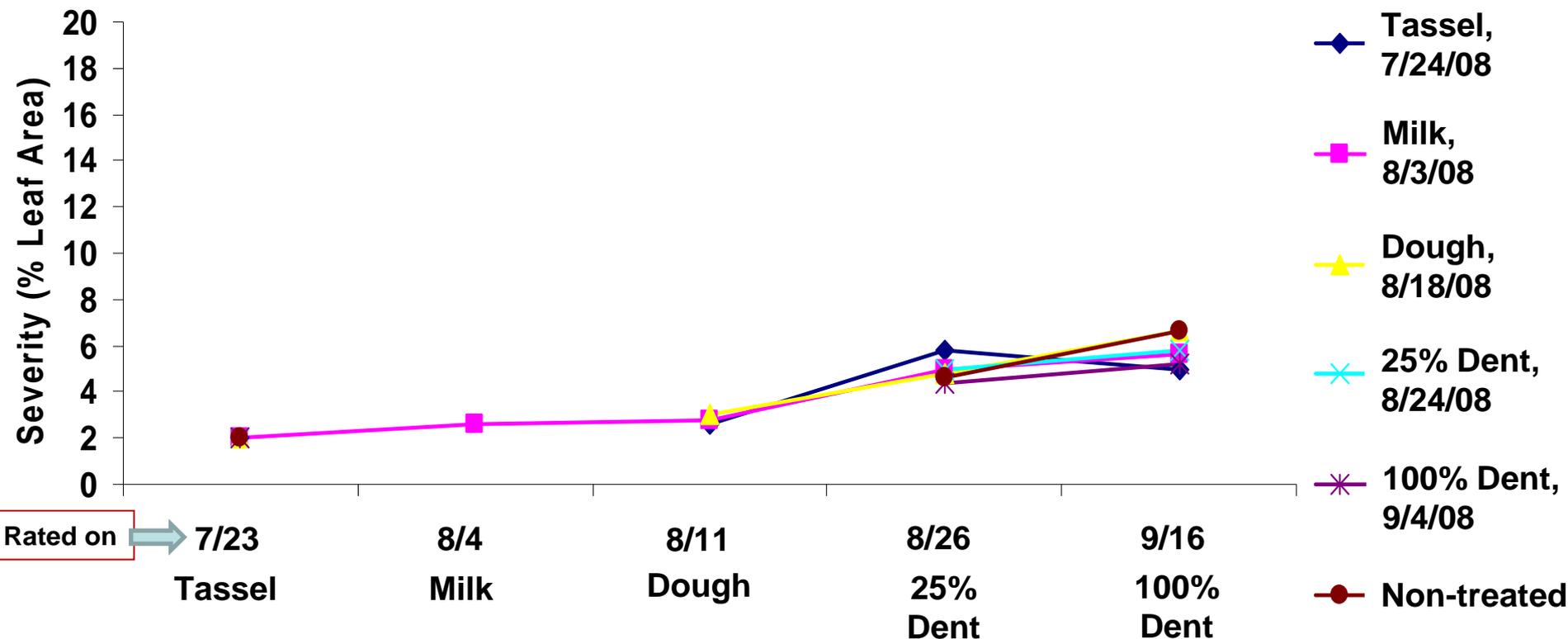
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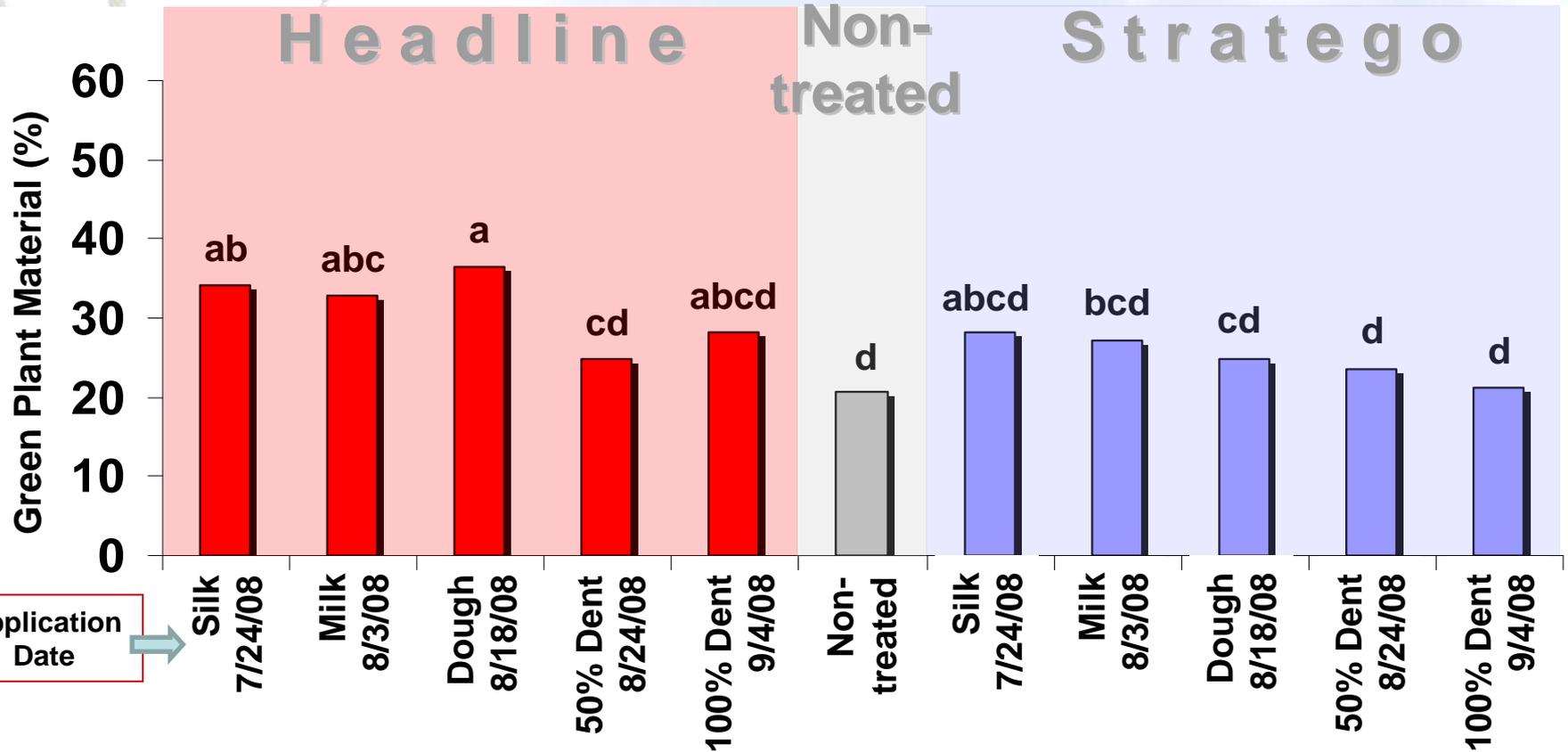
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Stay Green % at 100% Dent

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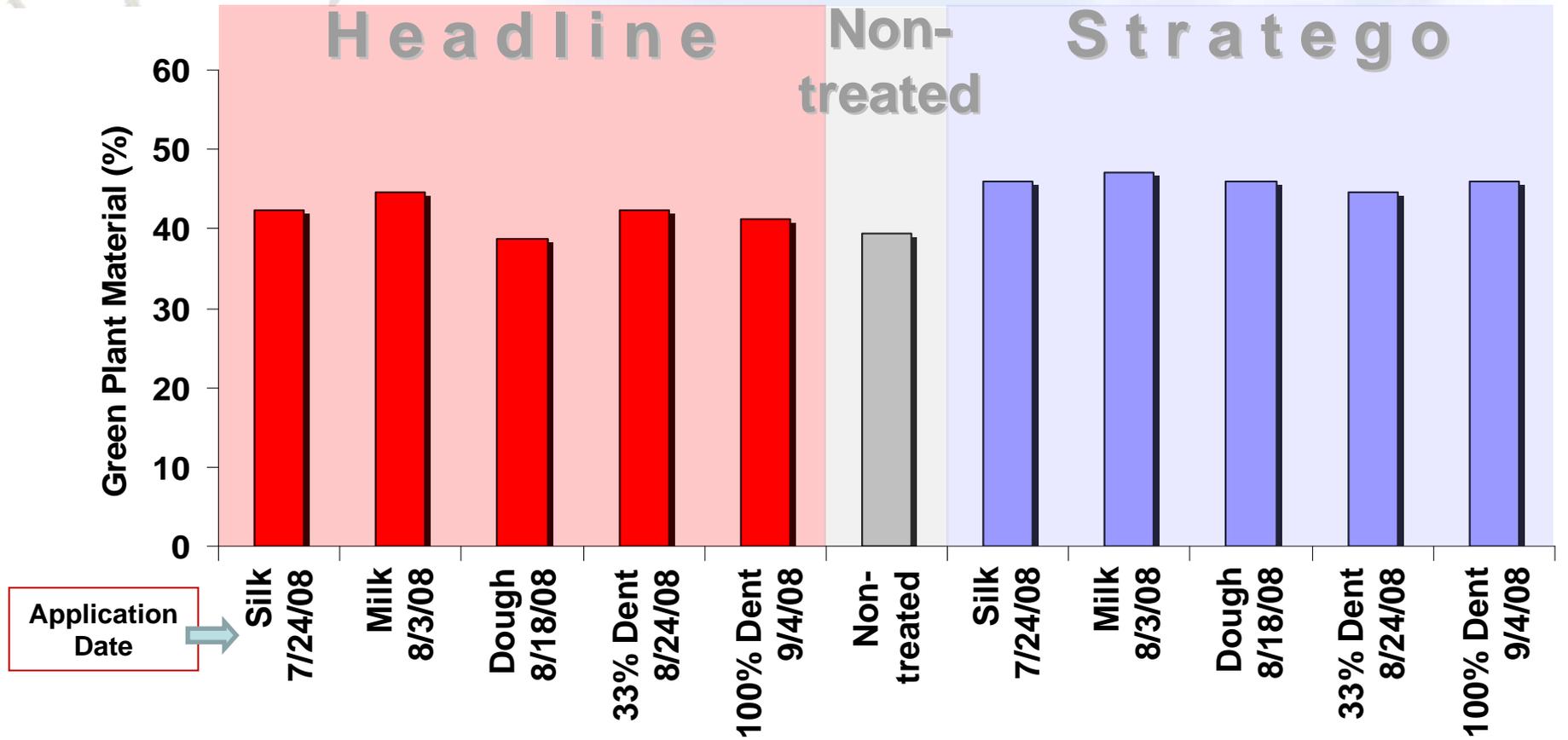
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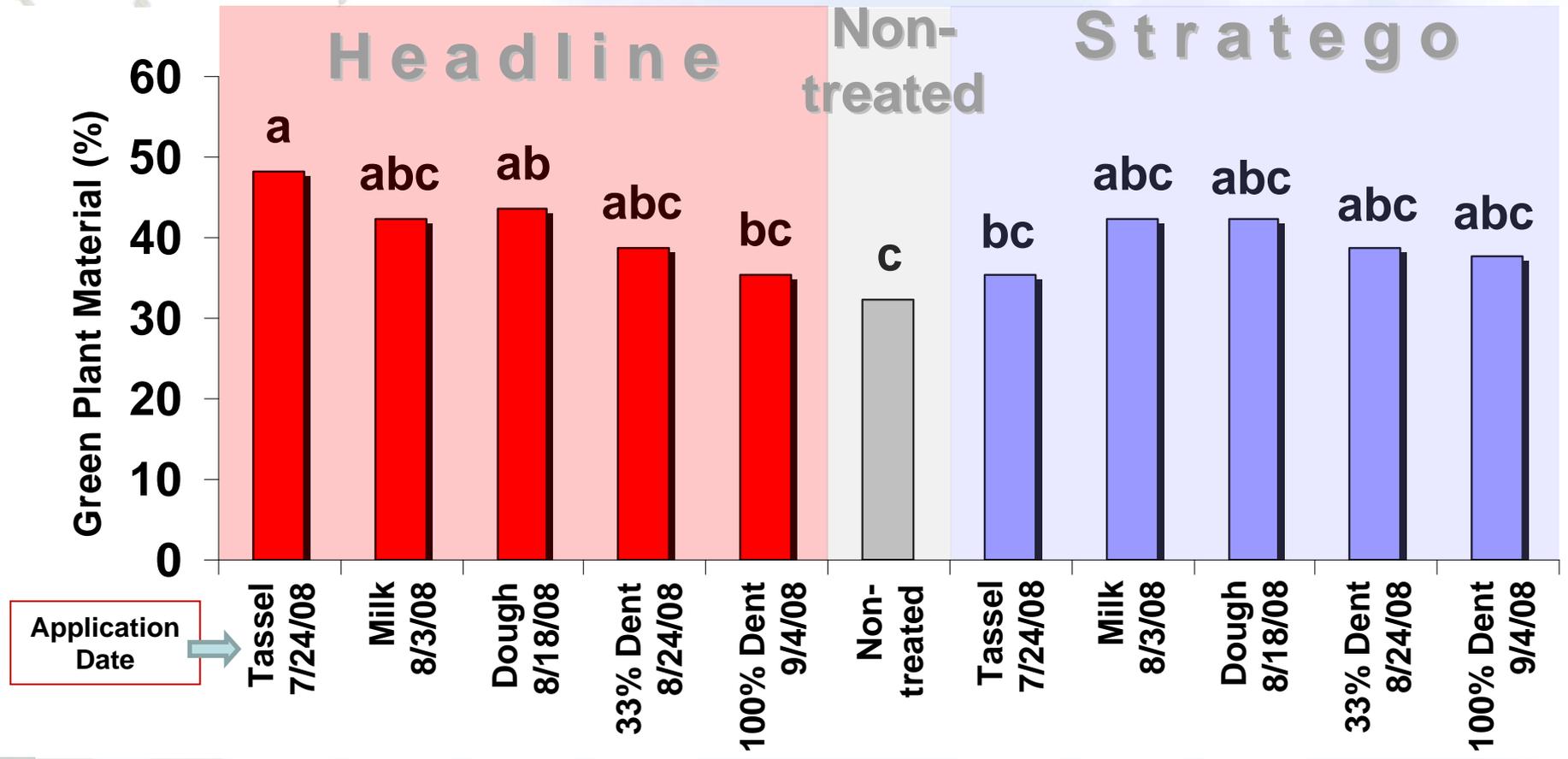
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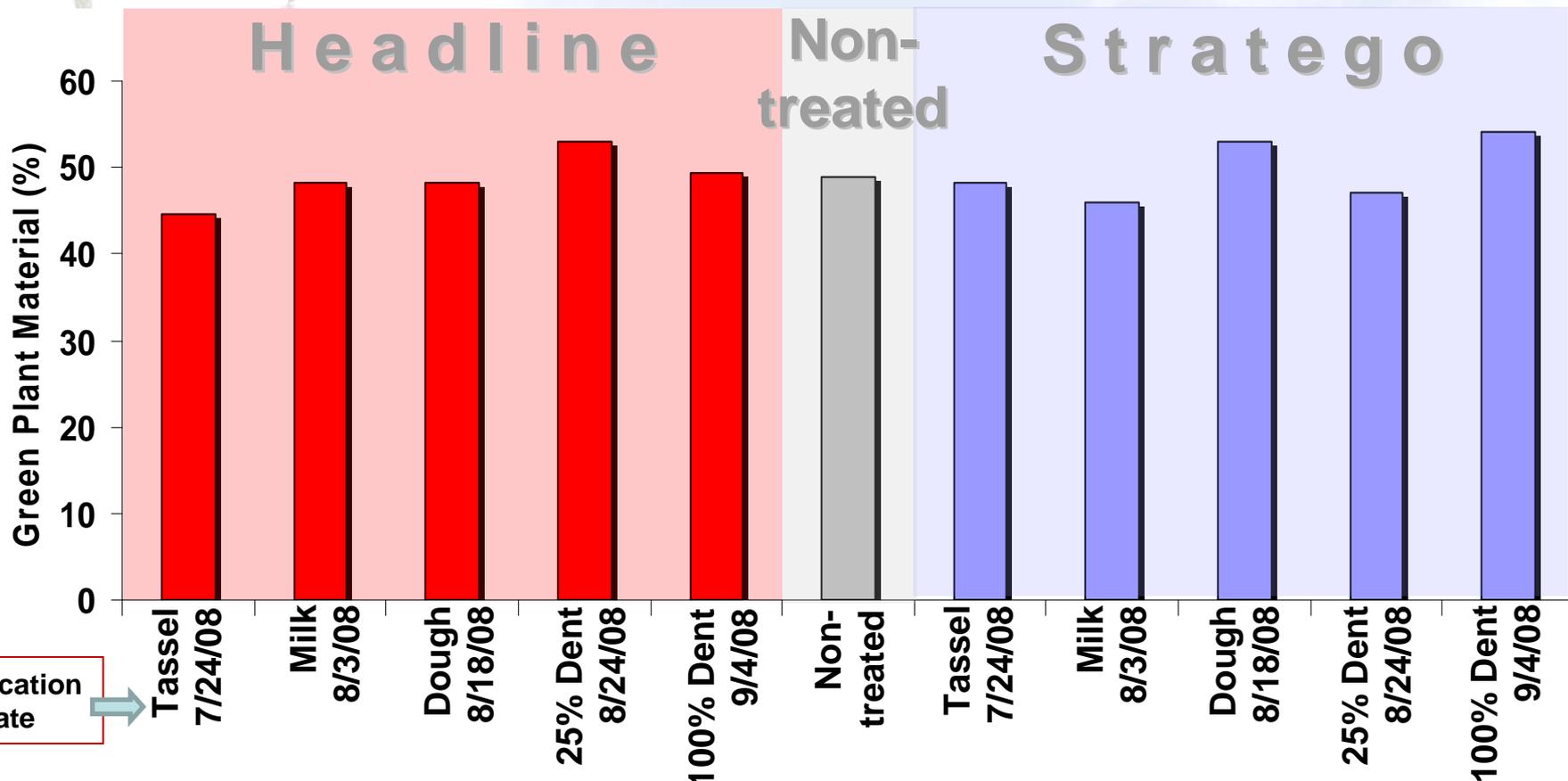
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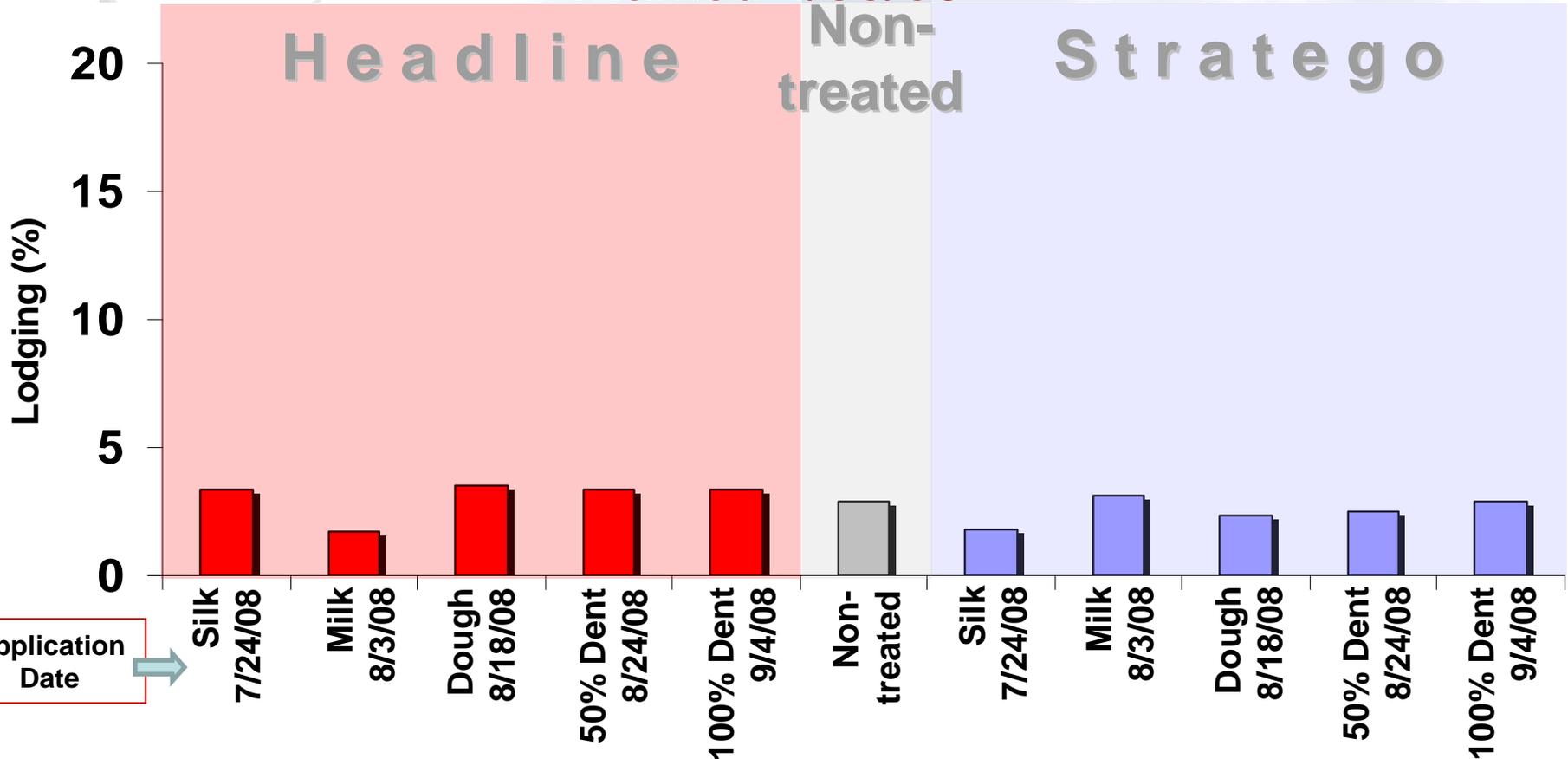
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## Lodging

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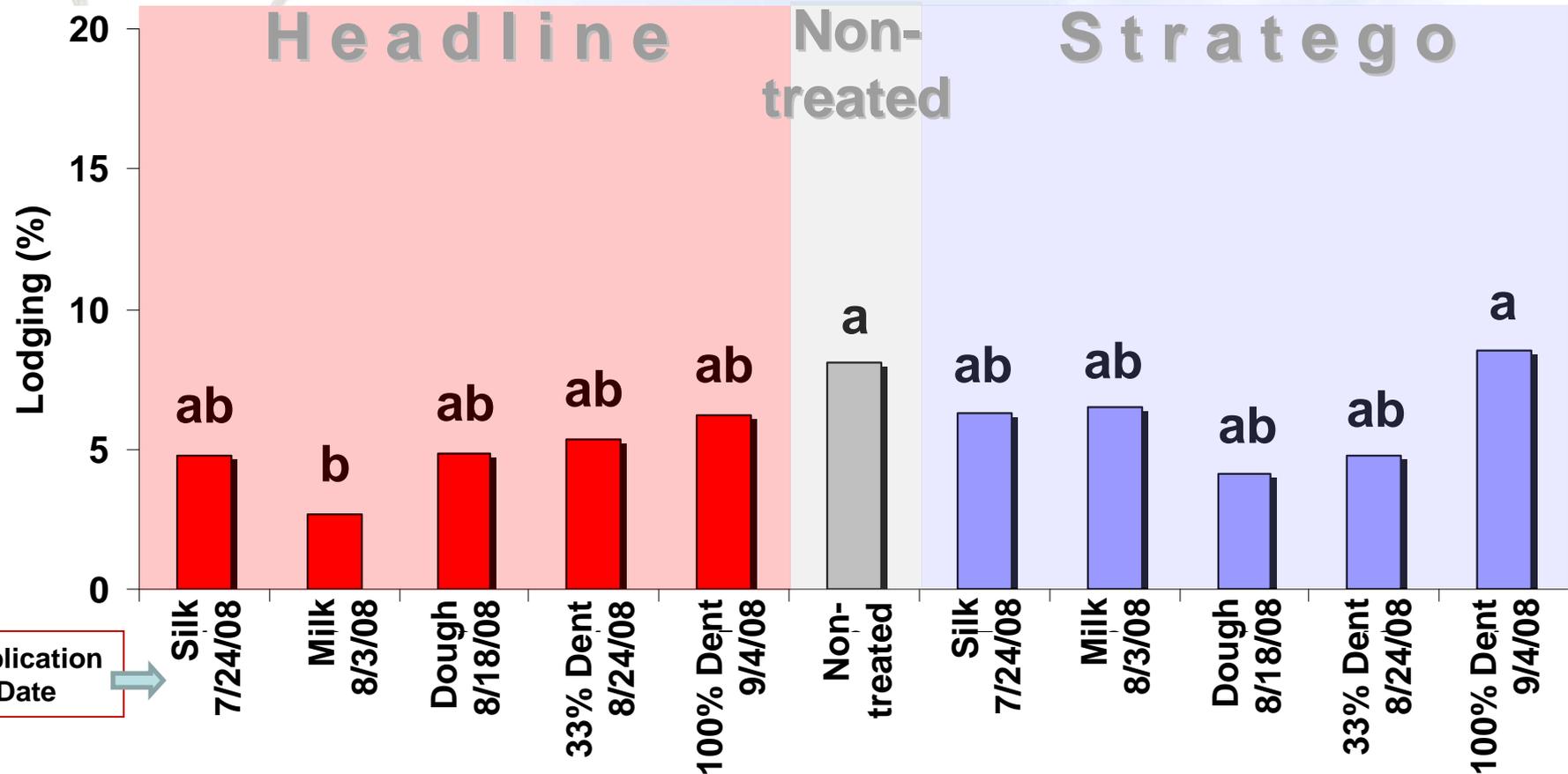
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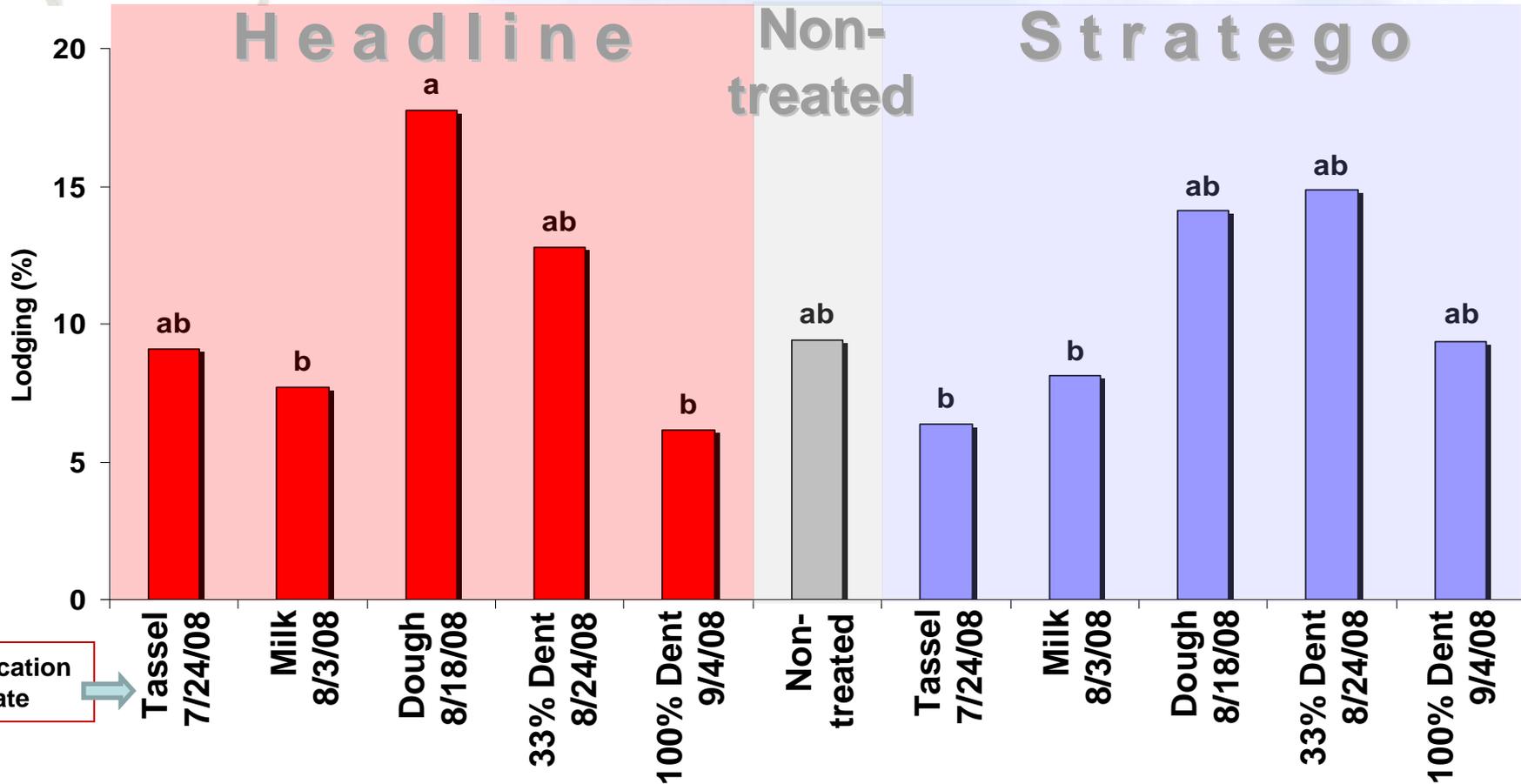
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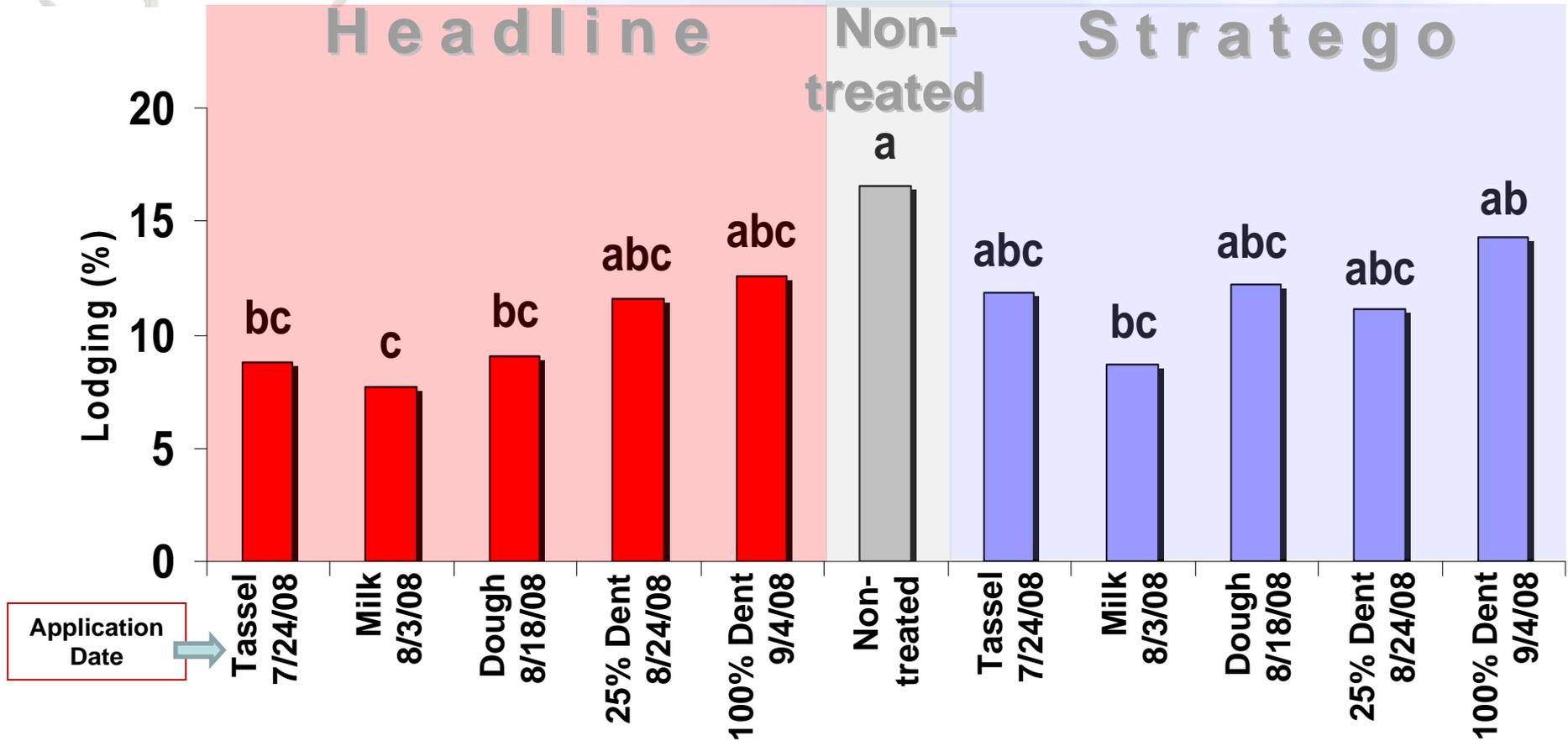
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# 2008 Rainfall

## Clay Center, NE

	<b>Total Rain (in.)</b>	<b>Avg. High Temp (F)</b>	<b>Avg. Low Temp (F)</b>	<b>High Temp. (F)</b>	<b>Low Temp. (F)</b>
<b>May</b>	<b>10.15</b>	<b>67</b>	<b>46</b>	<b>86</b>	<b>34</b>
<b>June</b>	<b>10.65</b>	<b>81</b>	<b>59</b>	<b>90</b>	<b>55</b>
<b>July</b>	<b>4.6</b>	<b>87</b>	<b>65</b>	<b>97</b>	<b>55</b>
<b>August</b>	<b>1.67</b>	<b>85</b>	<b>64</b>	<b>100</b>	<b>55</b>
<b>September</b>	<b>1.79</b>	<b>75</b>	<b>53</b>	<b>91</b>	<b>40</b>
<b>October</b>	<b>8.53</b>	<b>63</b>	<b>42</b>	<b>79</b>	<b>25</b>
<b>November</b>	<b>0</b>	<b>73</b>	<b>47</b>	<b>73</b>	<b>34</b>

•Does not include irrigation.

\*Source used: Nebraska Department of Natural Resources: <http://dnrdata.dnr.ne.gov/NeRAIN/>

# Acknowledgments

- Tamra Jackson, Extension Specialist
- Jae Behn, Research Technologist
- UNL-SCAL Staff and Faculty
  - David Althouse
  - Perry Ridgway
- Mark Hinze
- Julie Breathnach Stevens
- Corn Pathology Lab Staff

# 2008 Foliar Fungicide Timing Trials

## Summary

- Under disease pressure, foliar fungicides applied as late as the dough stage in 2008 were as effective in most treatments at protecting yield as earlier treatments.
- Most treatments receiving fungicides yielded more than the non-treated controls, but not always statistically higher.
- Delaying fungicide applications would likely provide control later in the season, 2-3 weeks beyond tasseling, in case of late season disease onset.

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**University of Nebraska-Lincoln**  
**Institute of Agriculture and Natural Resources**