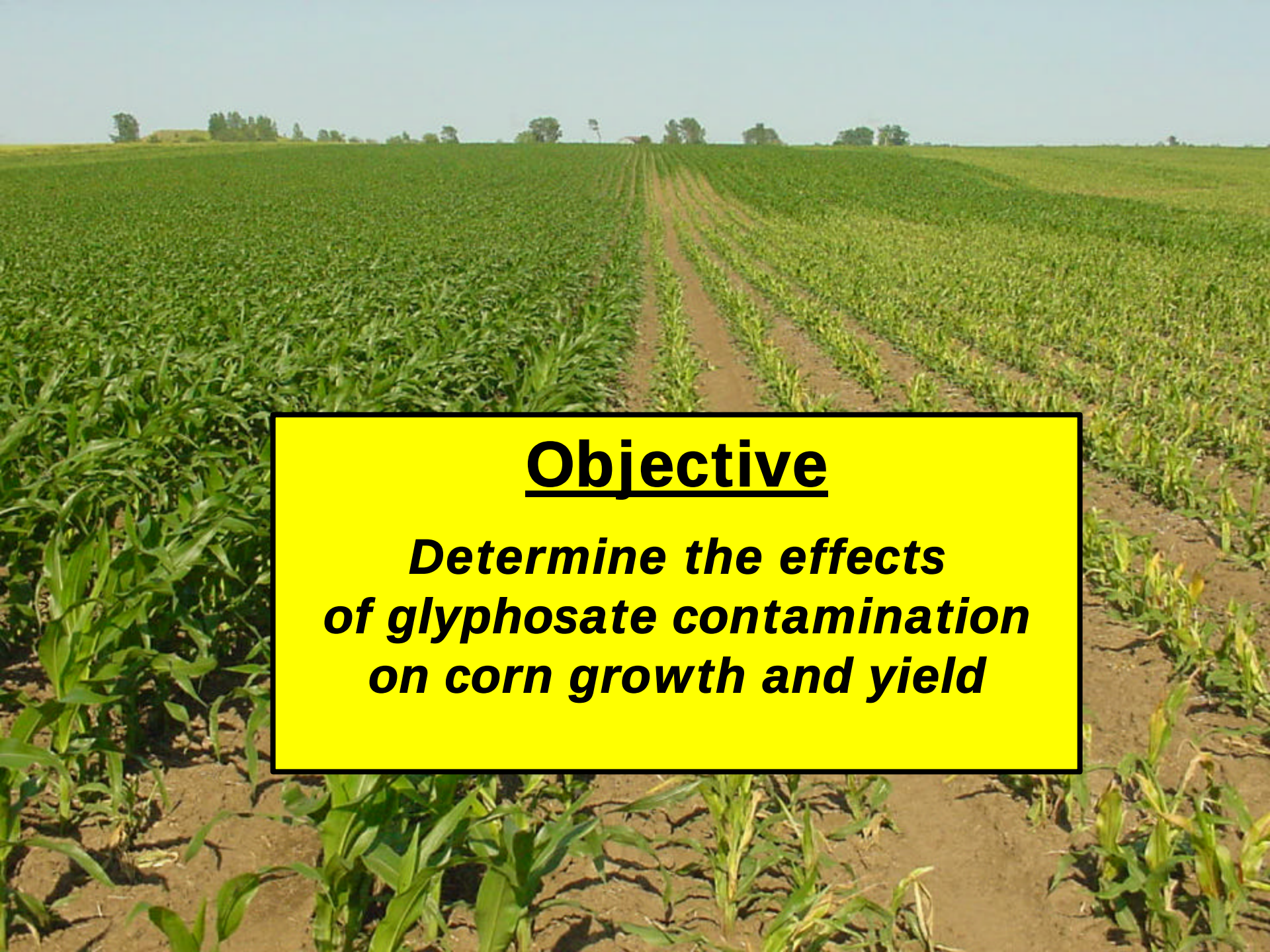




Effects of Glyphosate Contamination on Field Corn

Paul Vassalotti
Technical Service Representative
BASF
Cross Plains, WI



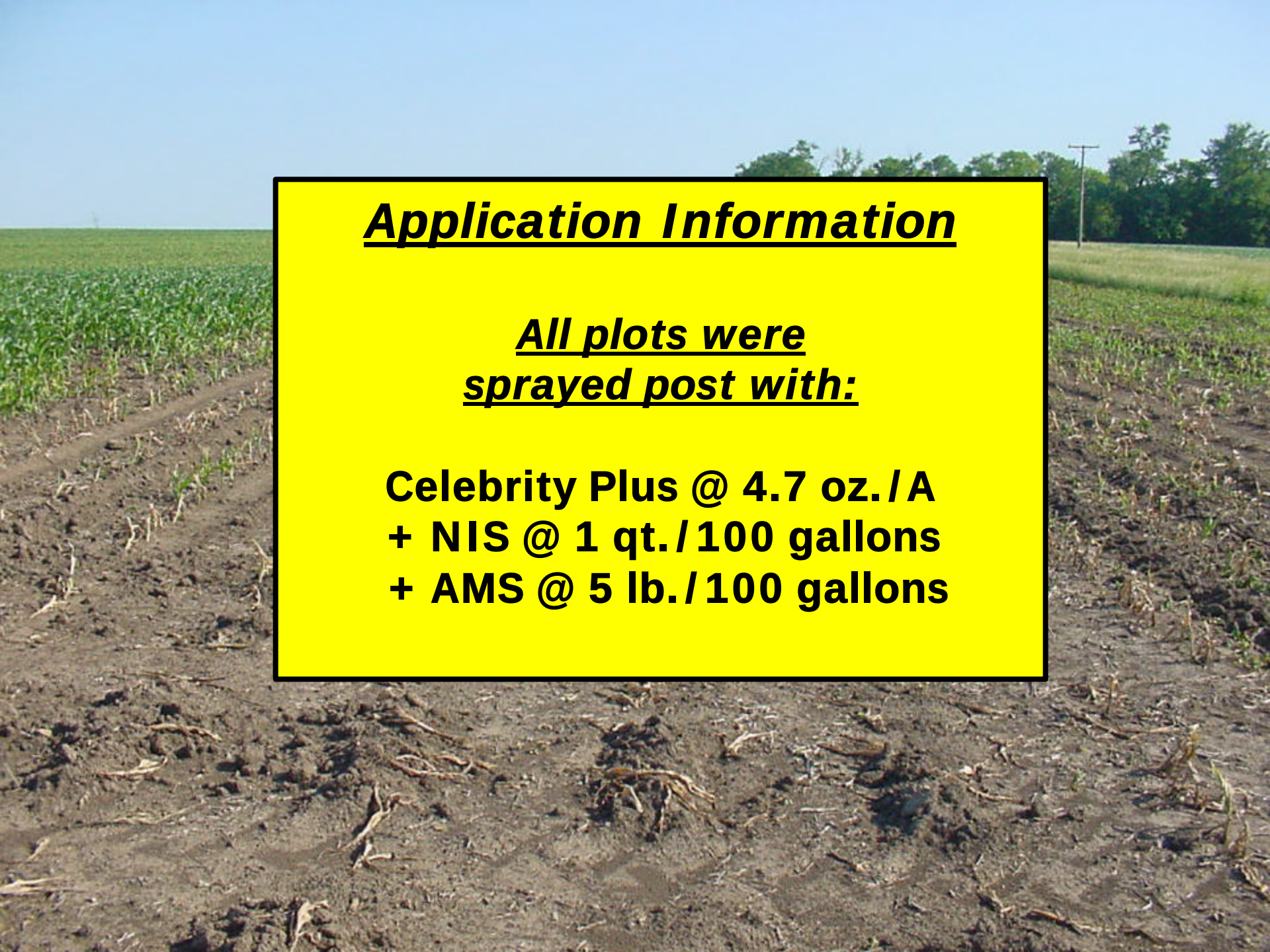


Objective

***Determine the effects
of glyphosate contamination
on corn growth and yield***

Application and Plot Information

<u>Planted:</u>	5 / 19 / 03
<u>Sprayed Pre:</u>	Outlook @ 10 oz./A
<u>Sprayed Post:</u>	6 / 16 / 03
<u>Corn Height:</u>	11-12"
<u>Corn V-Stage:</u>	V3+ -V4
<u>Weeds:</u>	3-6"
<u>Plot size:</u>	4 – 30" rows X 68'
<u># of reps:</u>	2
<u>Location:</u>	Lodi, WI

The background of the image is a photograph of a field. On the left, there is a row of green corn plants. The rest of the field is covered in dark, tilled soil with some dry, light-colored plant matter. In the far distance, there is a line of green trees under a clear blue sky. A yellow rectangular box with a black border is centered in the image, containing text.

Application Information

**All plots were
sprayed post with:**

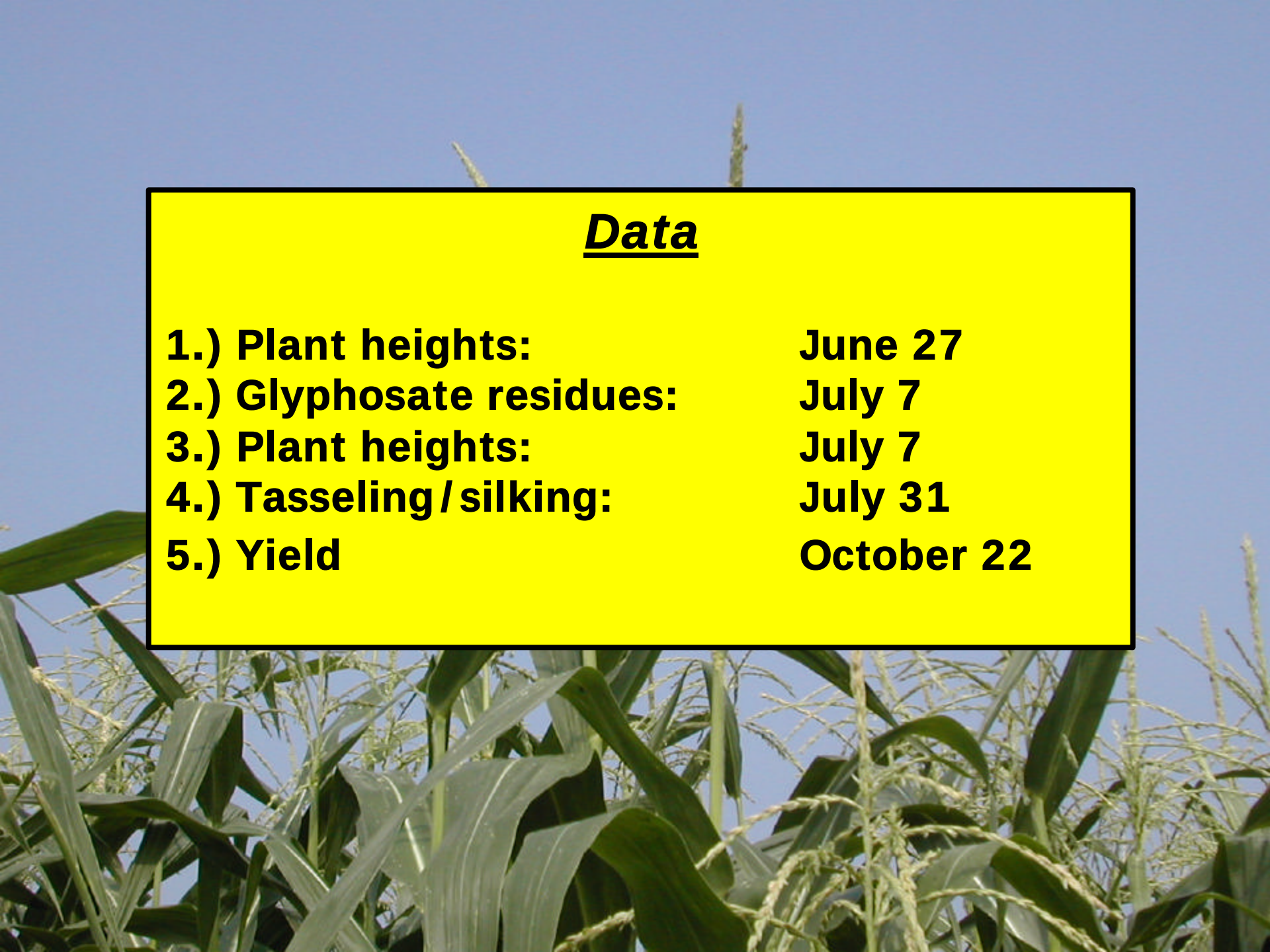
**Celebrity Plus @ 4.7 oz./A
+ NIS @ 1 qt./100 gallons
+ AMS @ 5 lb./100 gallons**

Treatment List

- 1.) Celebrity Plus (no Glyphosate)**
- 2.) CP + Glyphosate @ 0.31 oz./A**
- 3.) CP + Glyphosate @ 0.62 oz./A**
- 4.) CP + Glyphosate @ 0.93 oz./A**
- 5.) CP + Glyphosate @ 1.23 oz./A**
- 6.) CP + Glyphosate @ 1.85 oz./A**
- 7.) CP + Glyphosate @ 2.46 oz./A**
- 8.) CP + Glyphosate @ 3.69 oz./A**
- 9.) CP + Glyphosate @ 4.92 oz./A**

**Glyphosate rates = 4 lb. a.i./gallon
or 3 lb. ae/gallon**

0.31 oz./A = 1% of 32 oz./A rate

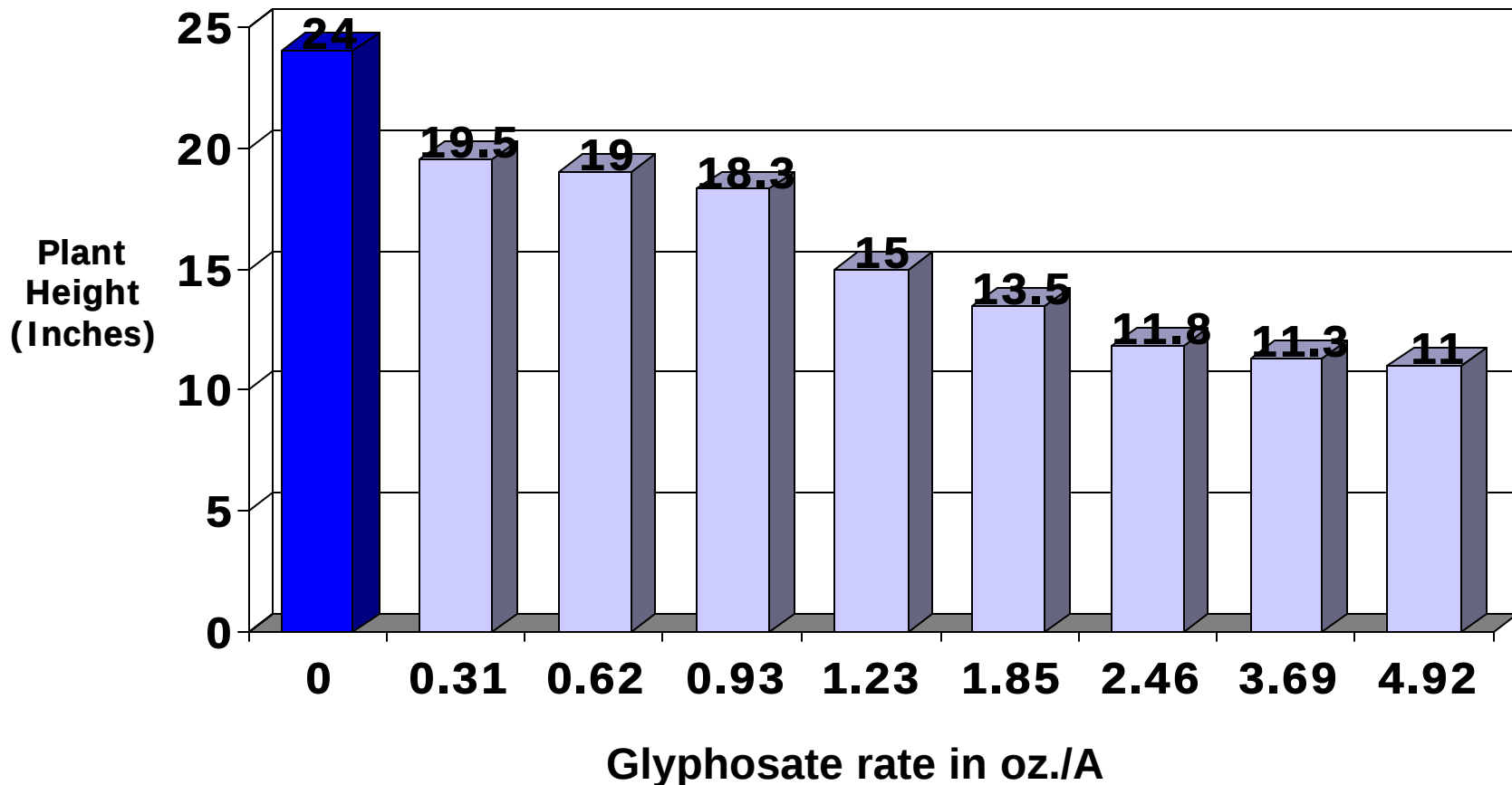
A photograph of a cornfield with green leaves and tassels against a clear blue sky. A yellow rectangular box with a black border is overlaid in the center, containing text.

Data

- | | |
|---------------------------------|-------------------|
| 1.) Plant heights: | June 27 |
| 2.) Glyphosate residues: | July 7 |
| 3.) Plant heights: | July 7 |
| 4.) Tasseling / silking: | July 31 |
| 5.) Yield | October 22 |

Glyphosate Contamination Study in Field Corn – Lodi WI 2003

Plant Heights - 11 DAT





No Glyphosate
11 DAT - 6/27/03
24"



Glyphosate @ 0.31 oz./A
19.5"



Glyphosate @ 0.62 oz./A
19.0"



Glyphosate @ 0.93 oz./A
18.3"

Glyphosate @ 1.23 oz./A
15.0"



Glyphosate @ 1.85 oz./A
13.5"



Glyphosate @ 2.46 oz./A
11.8"

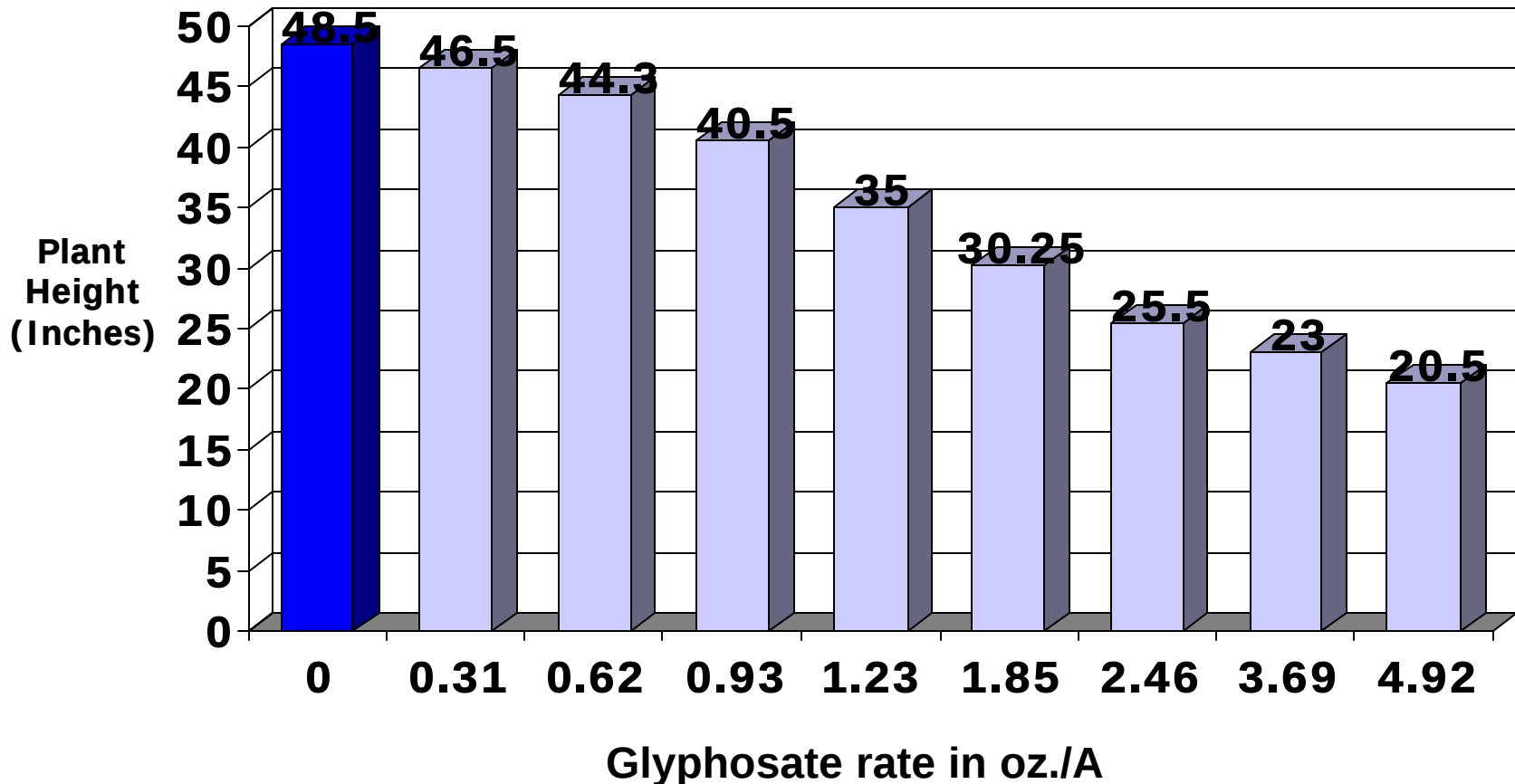


Glyphosate @ 4.92 oz./A
11.0"



Glyphosate Contamination Study in Field Corn – Lodi WI 2003

Plant Heights - 21 DAT



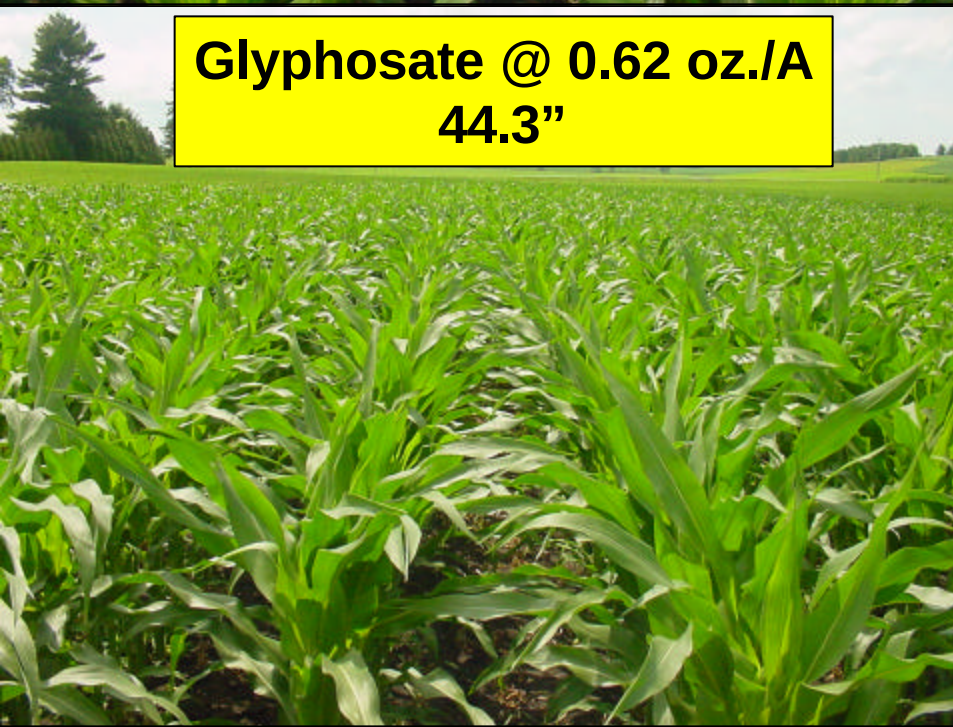
No Glyphosate
21 DAT - 7/7/03
48.5"



Glyphosate @ 0.31 oz./A
46.5"



Glyphosate @ 0.62 oz./A
44.3"



Glyphosate @ 0.93 oz./A
40.5"



Glyphosate @ 1.23 oz./A
35.0"



Glyphosate @ 1.85 oz./A
30.3"



Glyphosate @ 2.46 oz./A
25.5"



Glyphosate @ 4.92 oz./A
20.5"



Crop Response – 21 DAT

0, 0.31 & 0.62 oz./A:

0 % chlorosis

0.93 & 1.23 oz./A:

Low % chlorosis

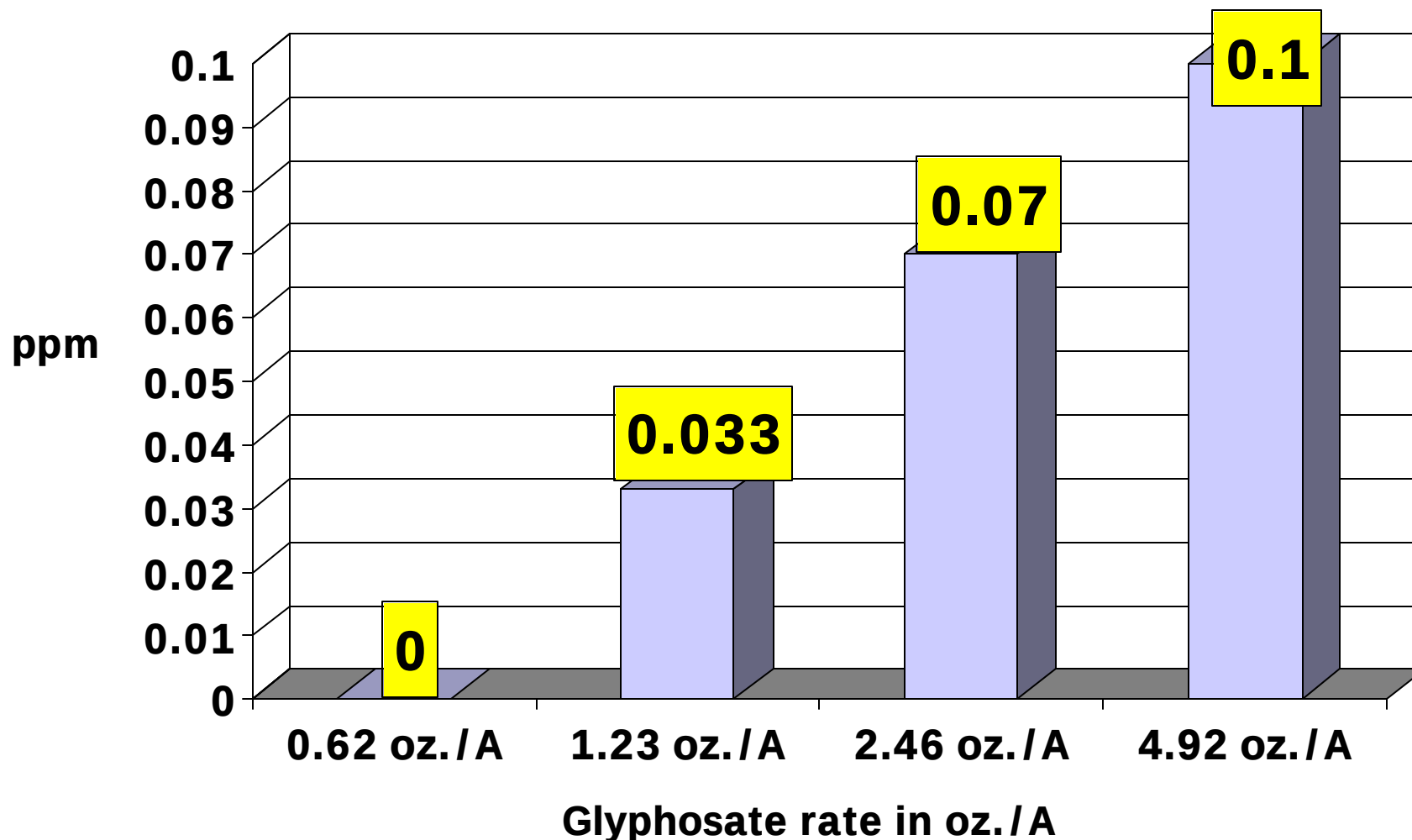
1.85, 2.46, 3.69 & 4.92 oz./A:

High % chlorosis

Glyphosate @ 4.92 oz./A

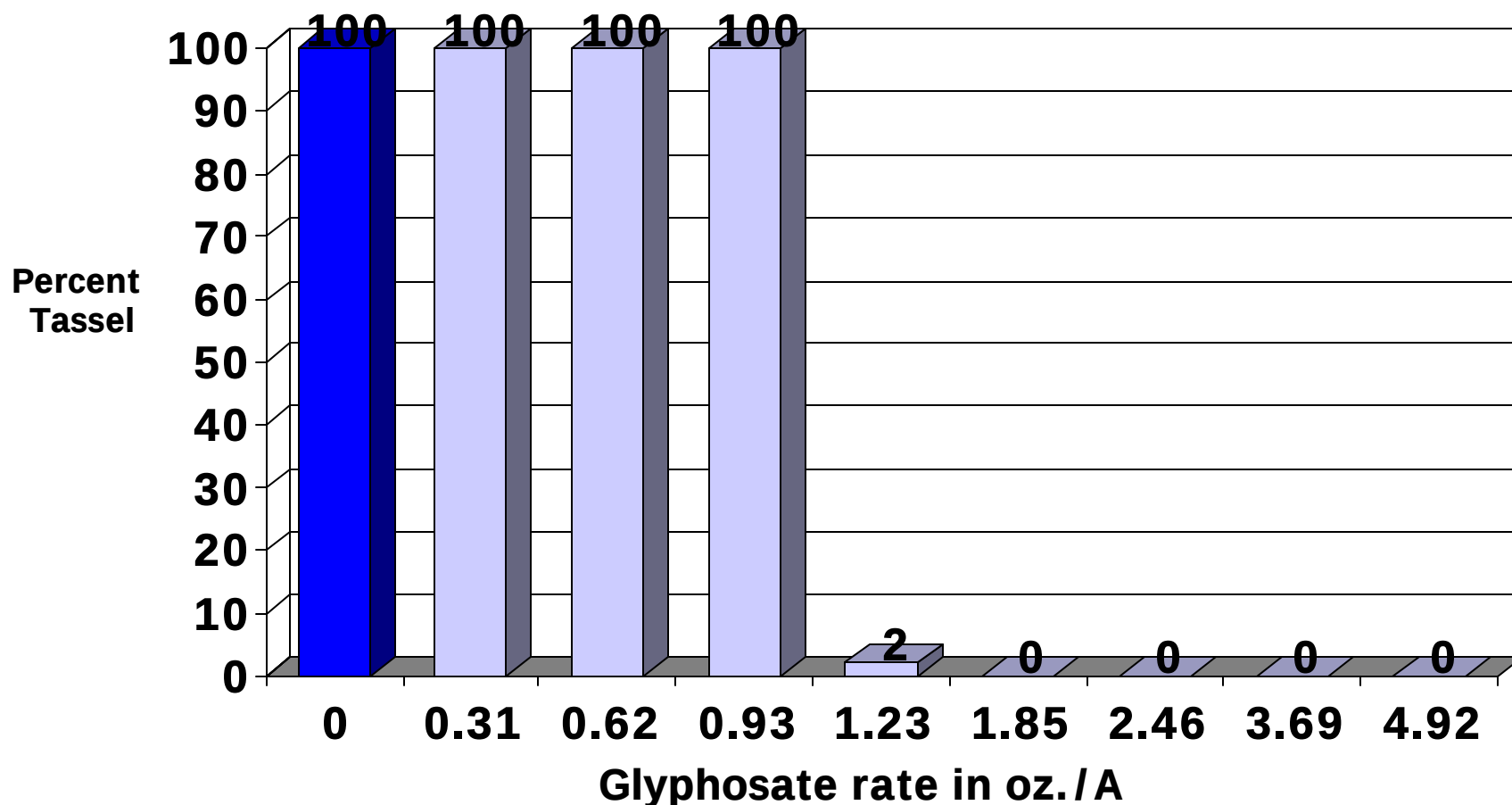
Glyphosate Corn Contamination Study

Glyphosate in ppm in Corn - 21 DAT



Glyphosate Contamination Study in Field Corn – Lodi WI 2003

% Tasseling- 45 DAT

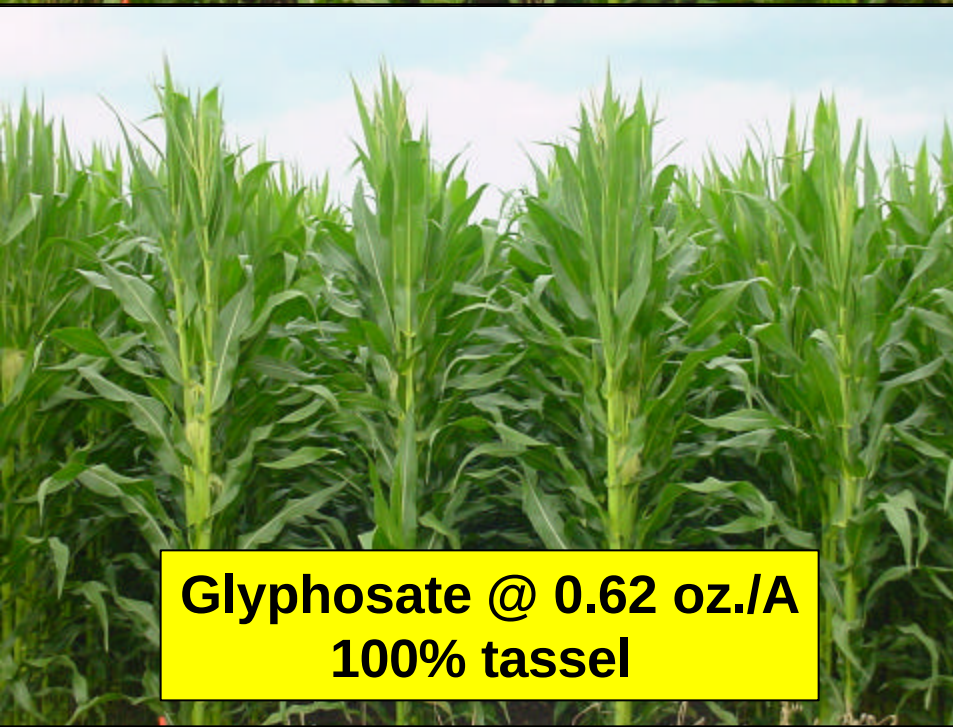




**No Glyphosate
45 DAT - 7/31/03
100% tassel**



**Glyphosate @ 0.31 oz./A
100% tassel**



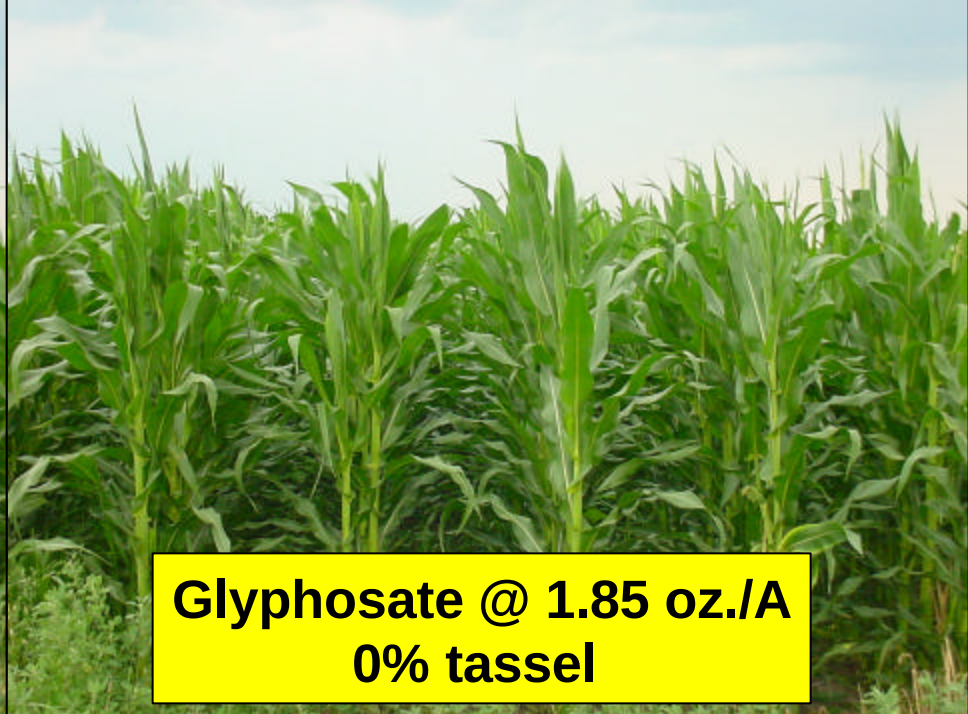
**Glyphosate @ 0.62 oz./A
100% tassel**



**Glyphosate @ 0.93 oz./A
100% tassel**



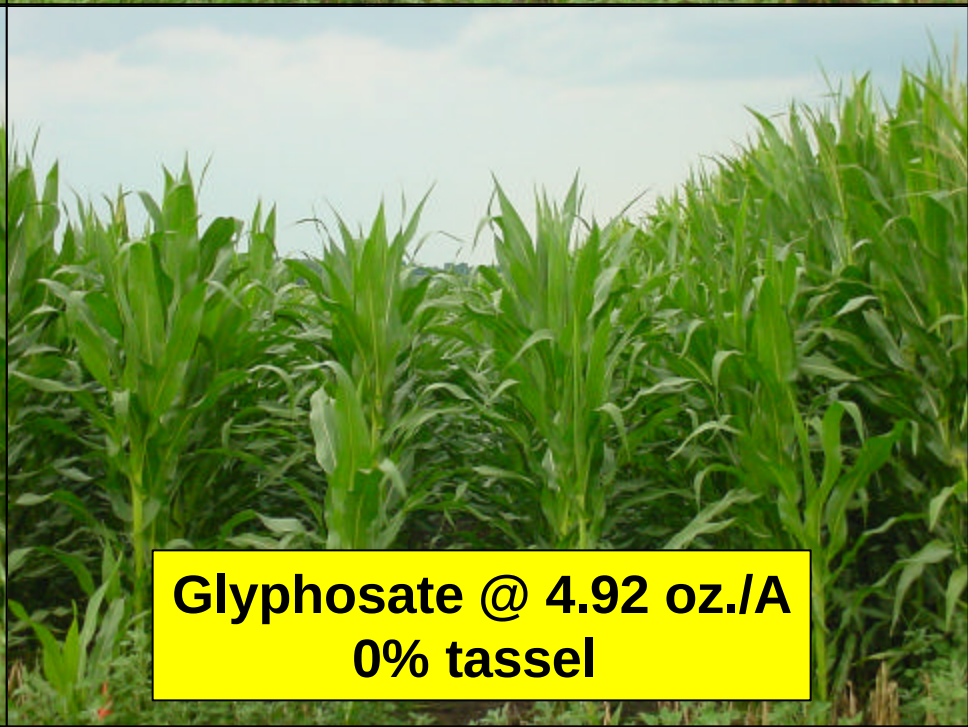
Glyphosate @ 1.23 oz./A
2% tassel



Glyphosate @ 1.85 oz./A
0% tassel



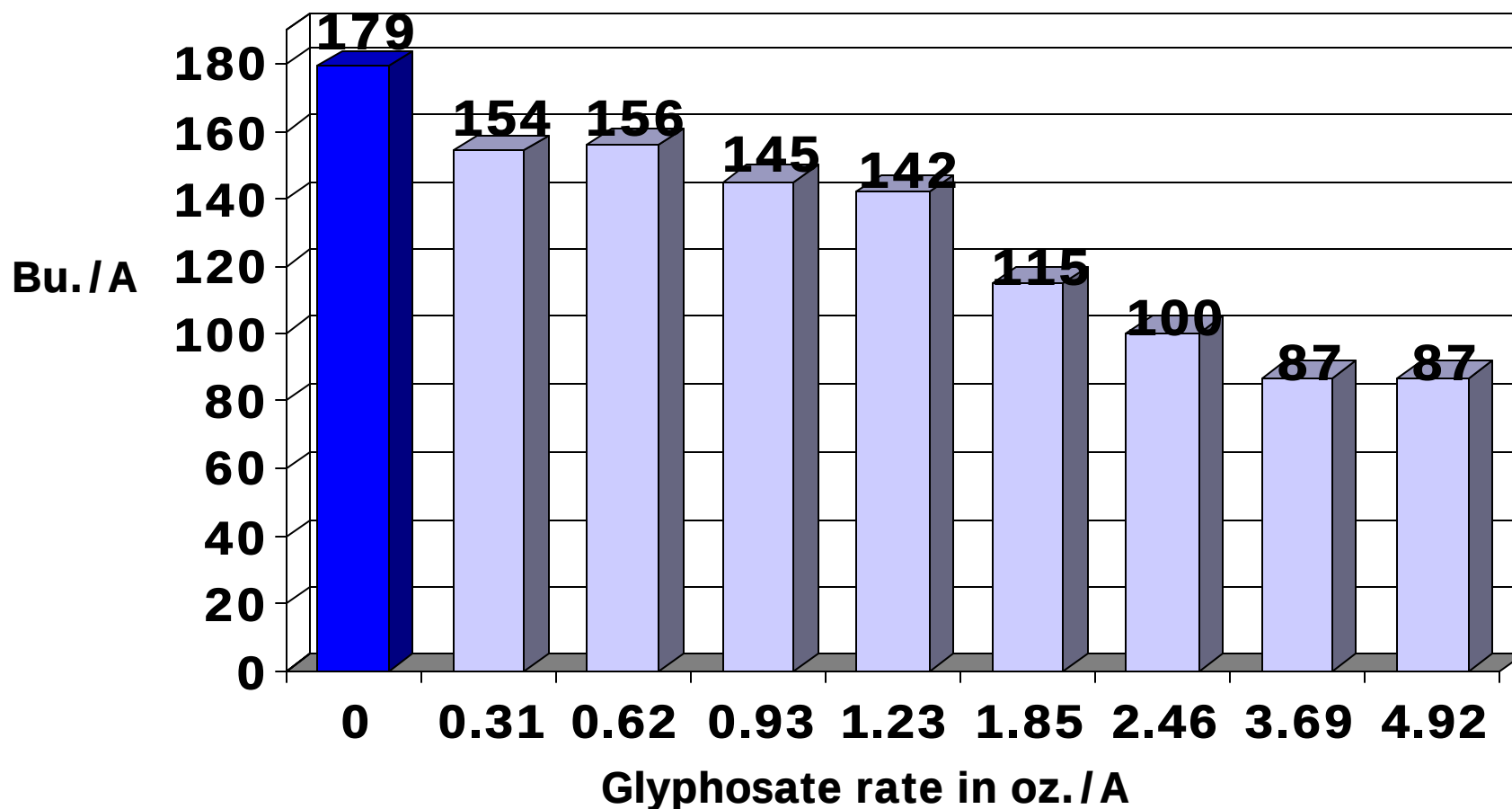
Glyphosate @ 2.46 oz./A
0% tassel



Glyphosate @ 4.92 oz./A
0% tassel

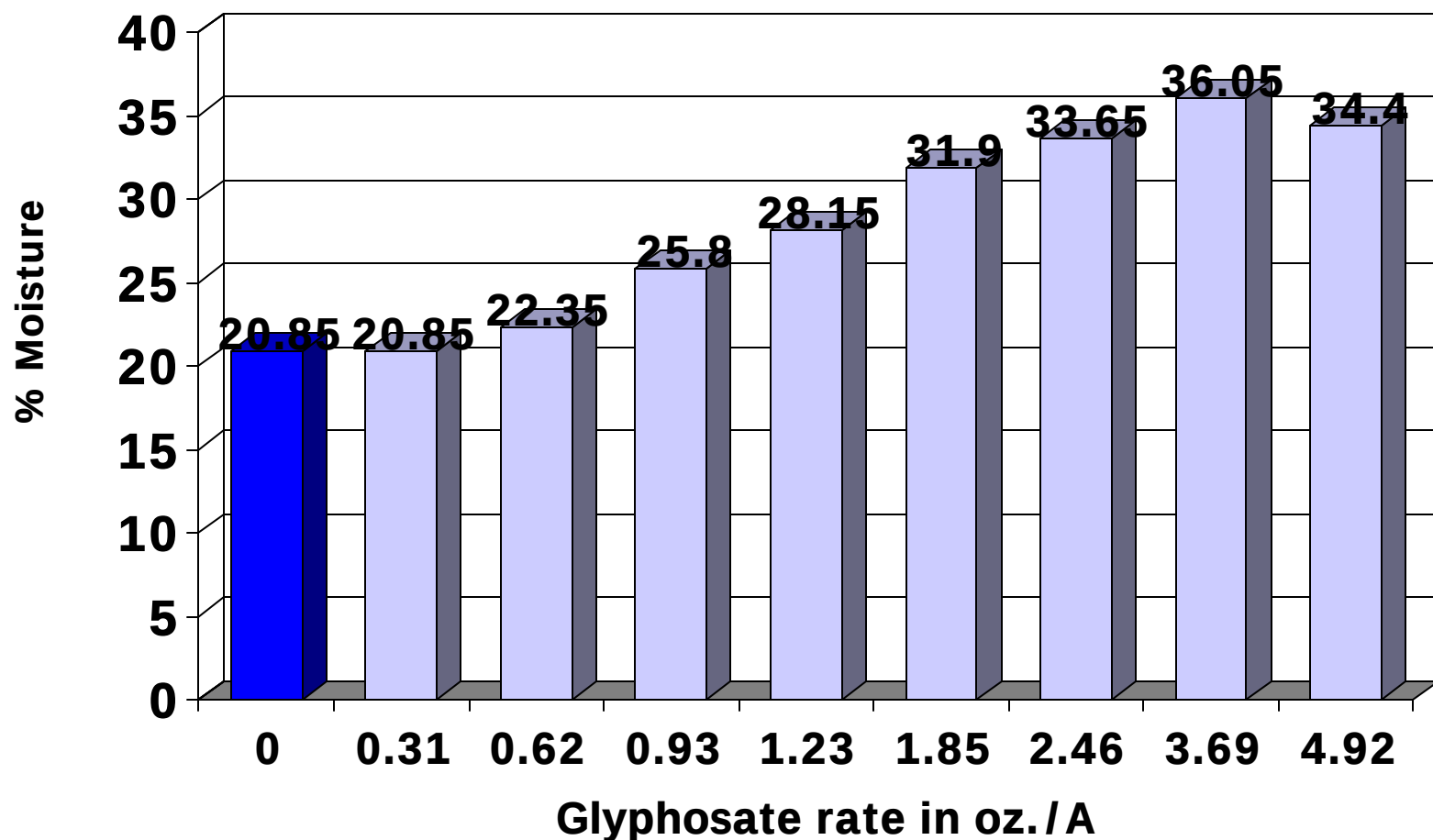
Glyphosate Contamination Study in Field Corn - Lodi, WI 2003

Corn Yield (Bu./A)



Glyphosate Contamination Study in Field Corn - Lodi, WI 2003

% Moisture



0



1.23 oz./A

0



2.46 oz./A

0



4.92 oz./A

Ear samples
at harvest

Conclusions

- 1.) Corn plant heights were reduced and yield losses occurred with all rates of glyphosate contamination.***
- 2.) Corn yields were reduced from 13 – 51 % due to glyphosate contamination.***
- 3.) Yield losses occurred with low rates of glyphosate contamination in the absence of visual symptoms.***
- 4.) CLEAN THE SPRAYER!***