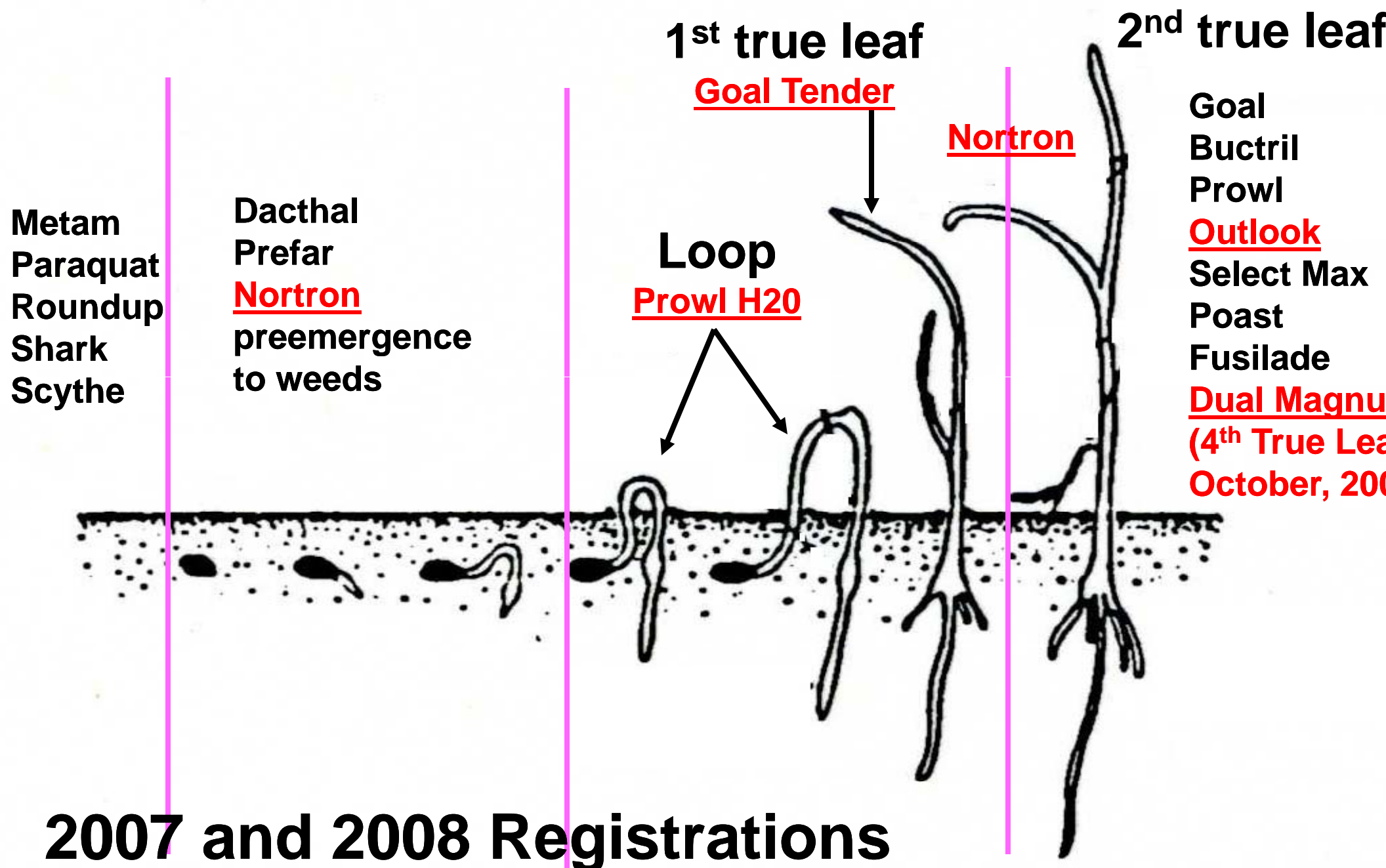




Nutsedge Control in Onions

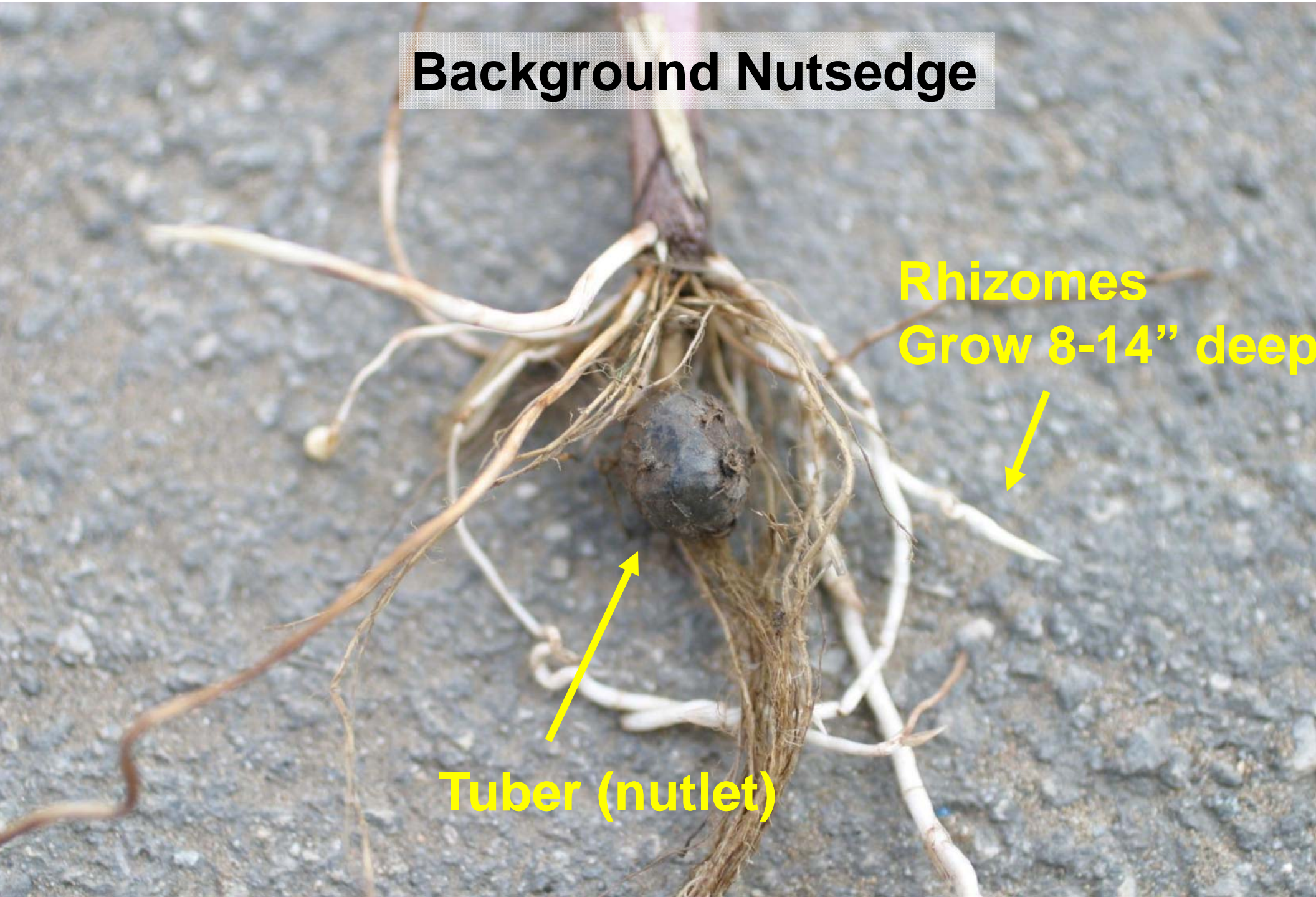
**Richard Smith & Oleg Daugovich
Farm Advisor, Monterey & Ventura
Counties**



Background Nutsedge

Rhizomes
Grow 8-14" deep

Tuber (nutlet)



**Nutlet forming at
end of rhizome**



nutlet

- Once the plant has developed more than 5 leaves it begins to form nutlets



- **Nutsedge cannot tolerate shade**
- **Unfortunately onions do not provide sufficient shade to inhibit the growth of nutsedge**



Background

- **Both Outlook and Dual Magnum are chloroacetamides (mitosis inhibitors)**
- **It needs to be applied prior to the emergence of nutsedge as it has no postemergence activity**
- **It can delay tuber sprouting and kill shoots of yellow nutsedge**
- **It can cause tuber mortality**

Timing of Nutsedge Control

- In 2006, 2nd true leaf applications of Outlook and Dual Magnum were effective in Monterey County
- However, in both 2007 and 2008, nutsedge emerged prior to the 2nd true leaf stage which did not allow Outlook to be applied prior to nutsedge emergence
- Both of these materials need to be applied prior to the emergence of nutsedge to be effective

2007 Nutsedge Trials

- In 2007 Outlook (Dimethenamid-p) was registered in California for use on dry bulb onions

2007 Nutsedge Trials

- **Yellow nutsedge was emerged by the 2nd true leaf stage in 2007**
- **We needed to find a way to make Outlook work**
- **Three strategies tested:**
 - **1) 1st true leaf applications**
 - **2) Burn back nutsedge with acid fertilizer then apply Outlook**
 - **3) Basagran evaluations**

April 18, 2007

Test plot

**Grower Acid Fertilizer
Application**

NO
OUTLINE



- **At the 2nd true leaf stage nutsedge was well developed**



Heavily Infested Site

Treatment	Material/A	Application
7-7-0-7 Fb Outlook 6.0 Fb Outlook 6.0	35 gallons 7.0 oz 7.0 oz	Post 1 t. leaf 14 days later
7-7-0-7 Fb Outlook 6.0	35 gallons 14.0 oz	Post 1 t. leaf
7-7-0-7 Fb Outlook 6.0 Fb Outlook 6.0	35 gallons 7.0 oz 7.0 oz	Post 2 t. leaf 14 days later
7-7-0-7 Fb Outlook 6.0	35 gallons 14.0 oz	Post 2 t. leaf
Untreated	----	----

Post Acid Fertilizer Application

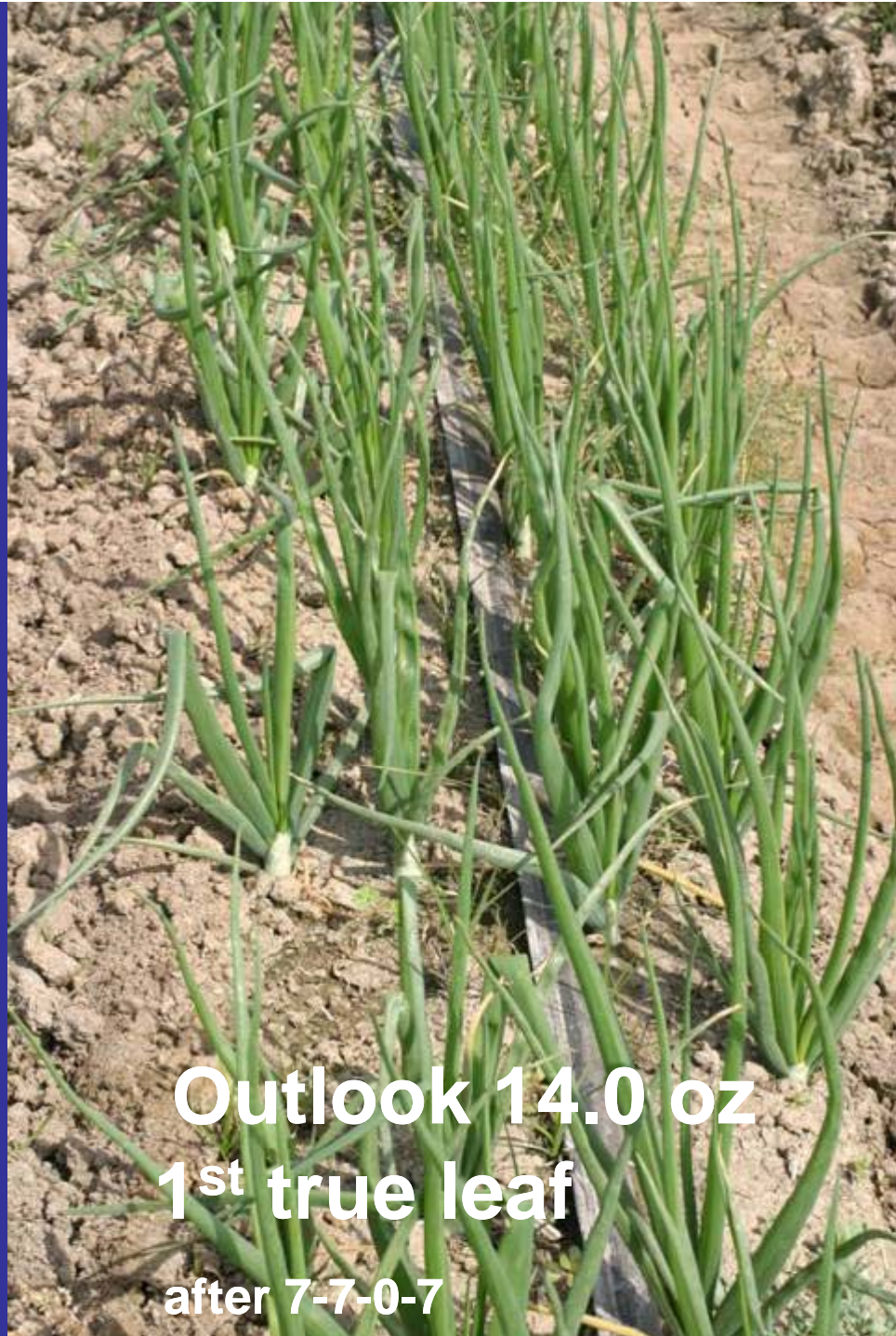








Untreated

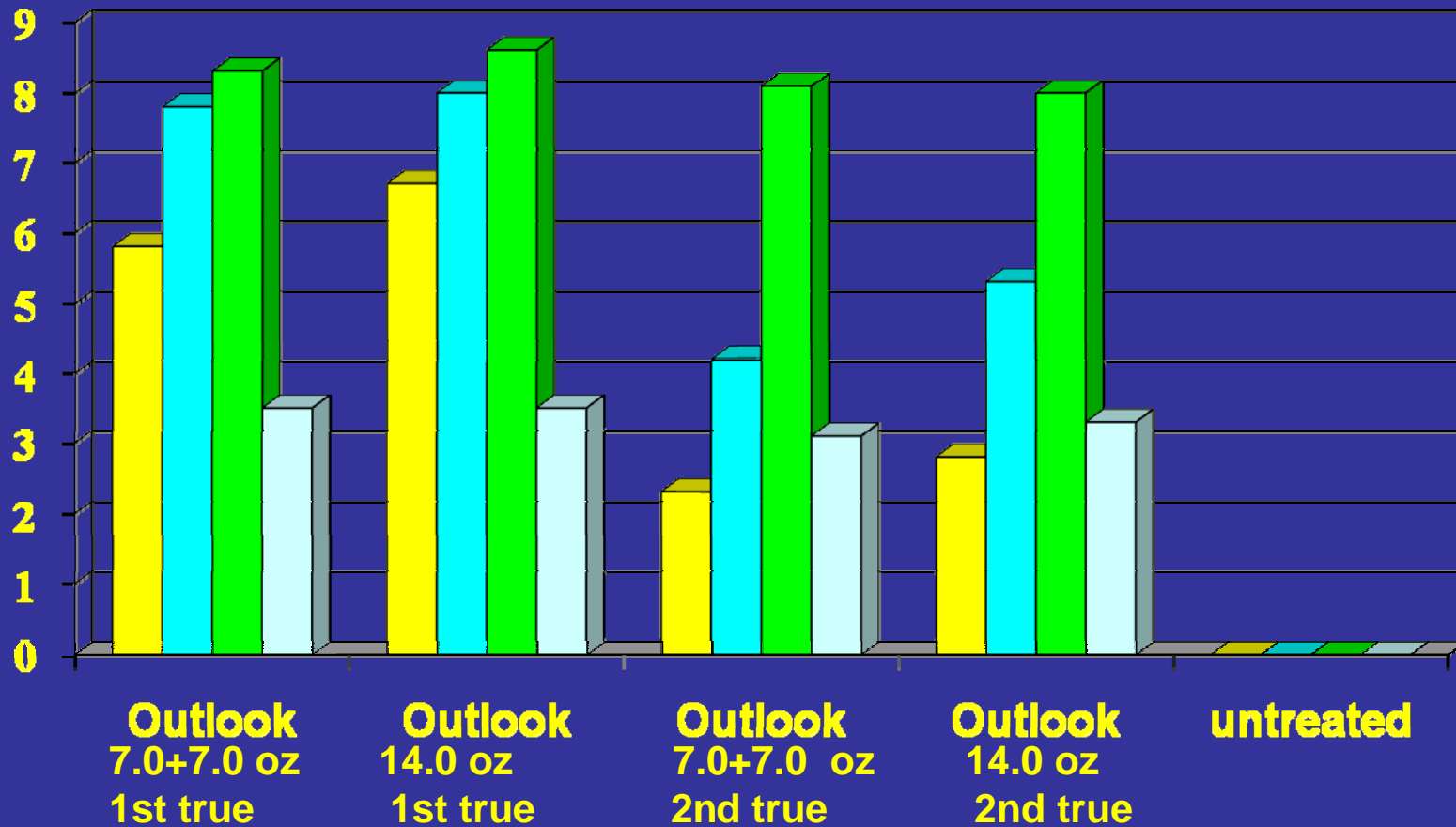


**Outlook 14.0 oz
1st true leaf
after 7-7-0-7**

Weed Rating

Outlook After Acid Fertilizer

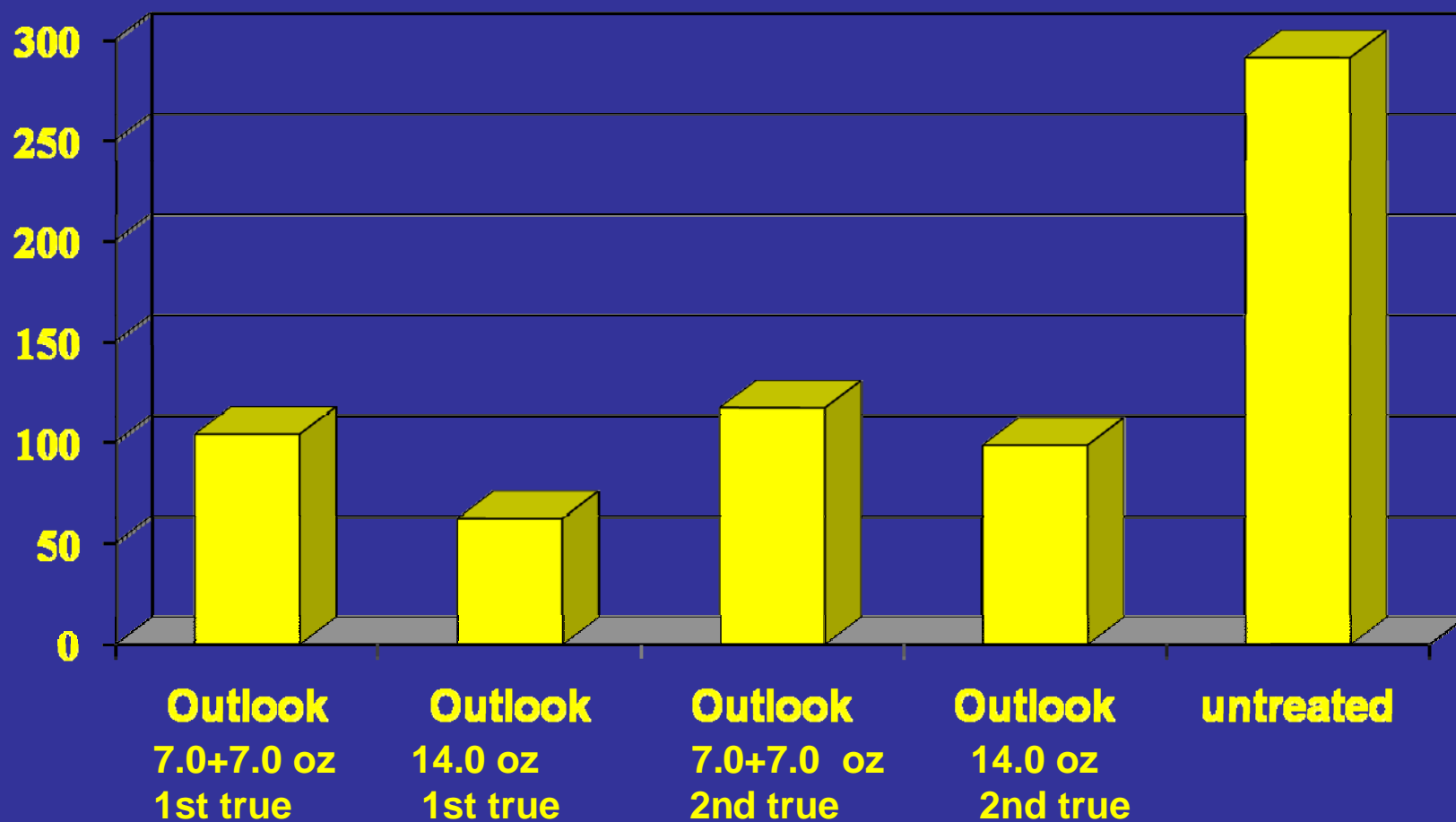
April 23; May 4; June 1; and August 9



Nutsedge nutlets in the soil of the Outlook plots



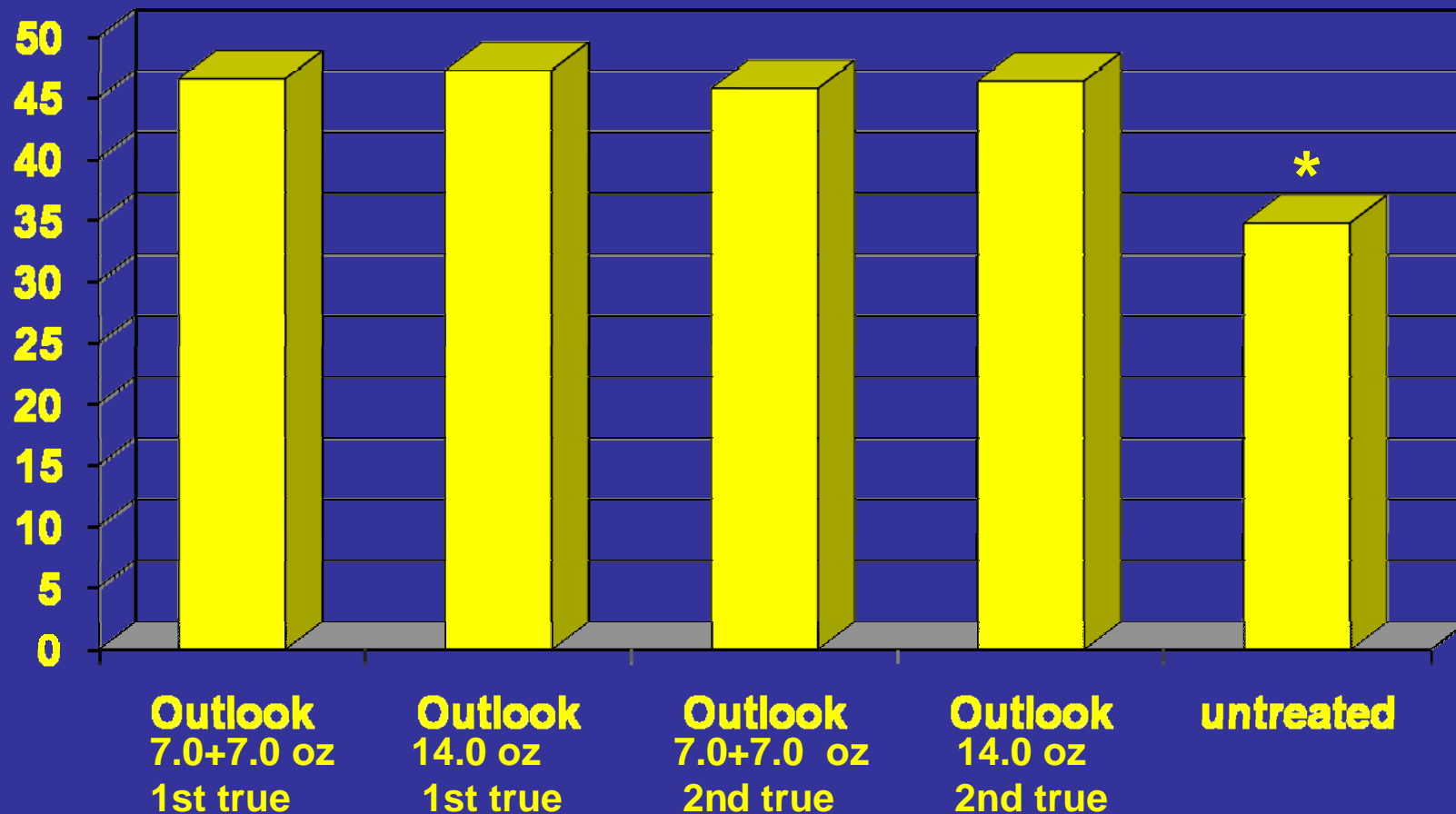
Nutsedge Tubers Per 1000 cm³ of Soil



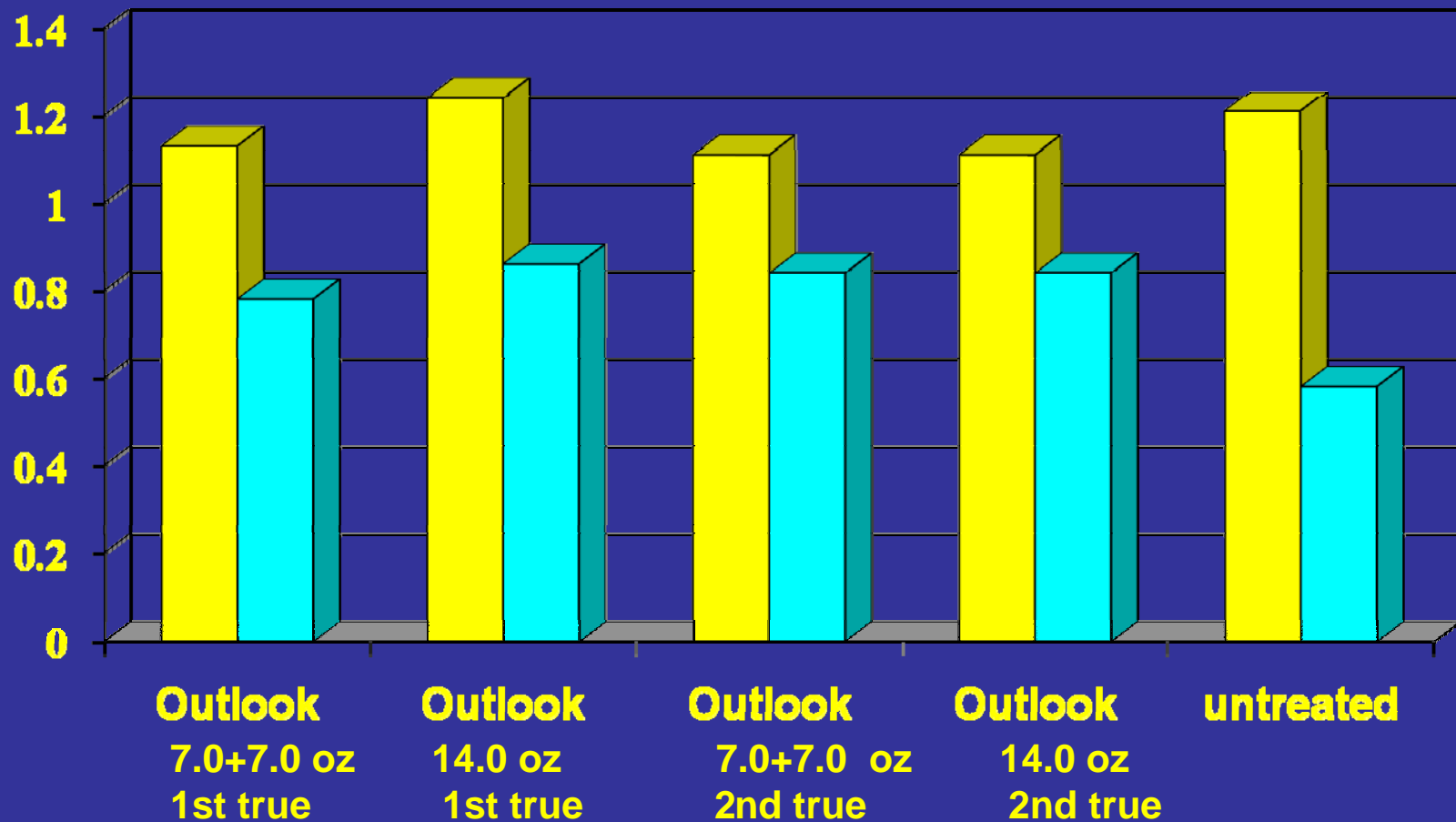
Yield Evaluations



Onion Trial Heavy Infestation With 7-7-0-7 Yield – Tons/A



Comparison of Light vs Heavy Yield – Mean Head Wt (lbs)



2008 Nutsedge Control Trial Dehydrator Onions





Untreated

7-7-0-7+Outlook
Goal Tender
1st true leaf



7-7-0-7 + Outlook 7+7
1st true leaf

7-7-0-7 + Outlook 7+7
2nd true leaf

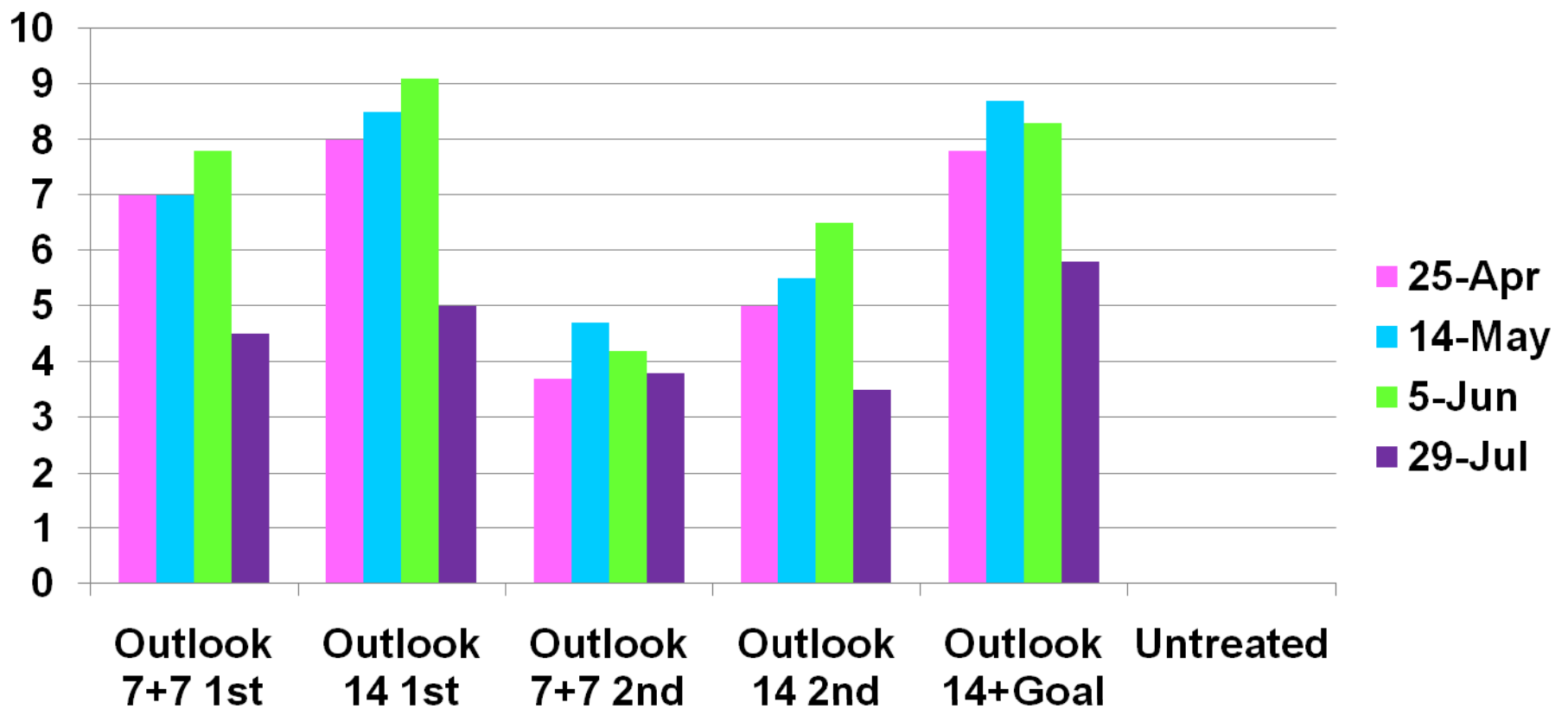


Untreated

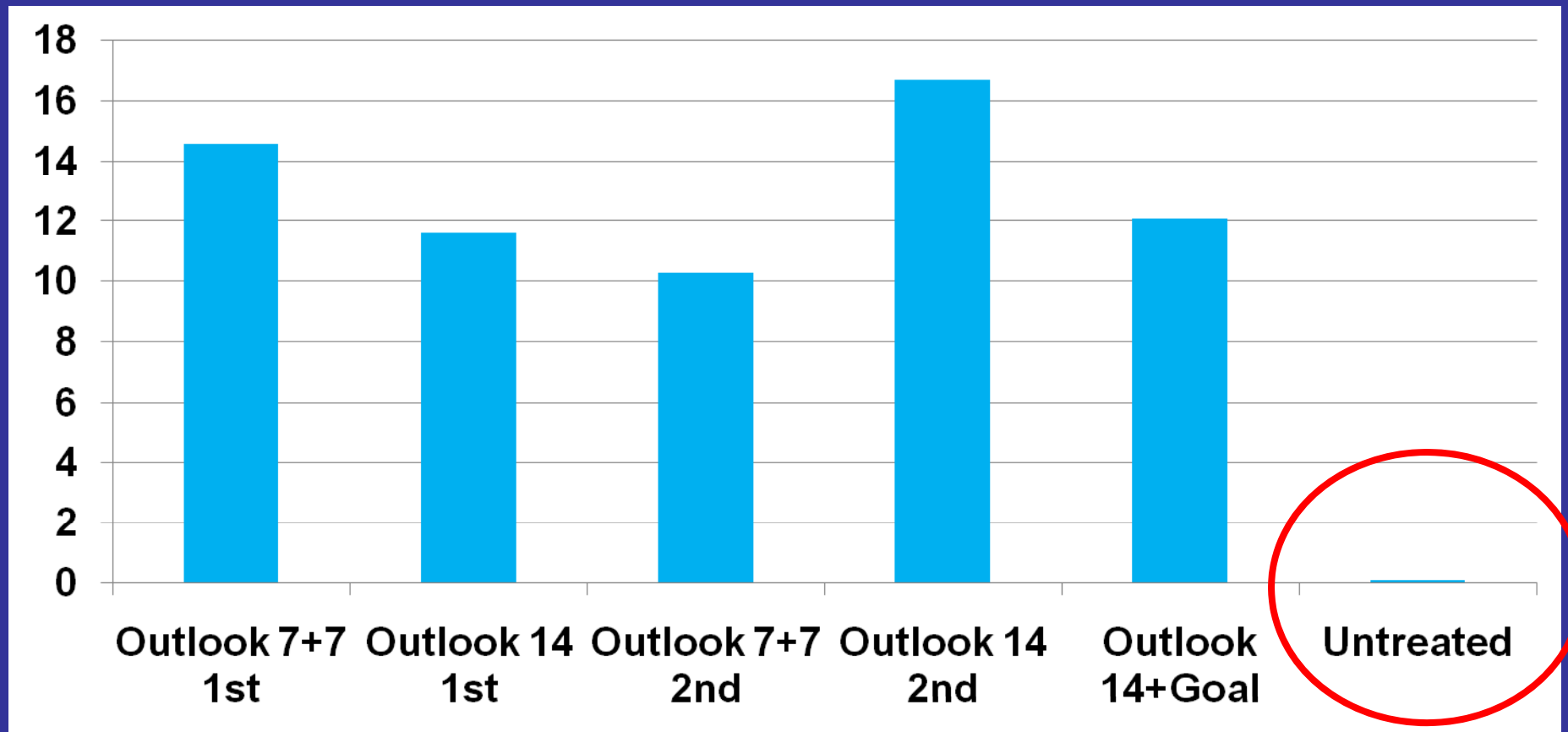
7-7-0-7 + Outlook 7+7
1st true leaf



Nutsedge Weed Control Rating



Yield of Onions T/A

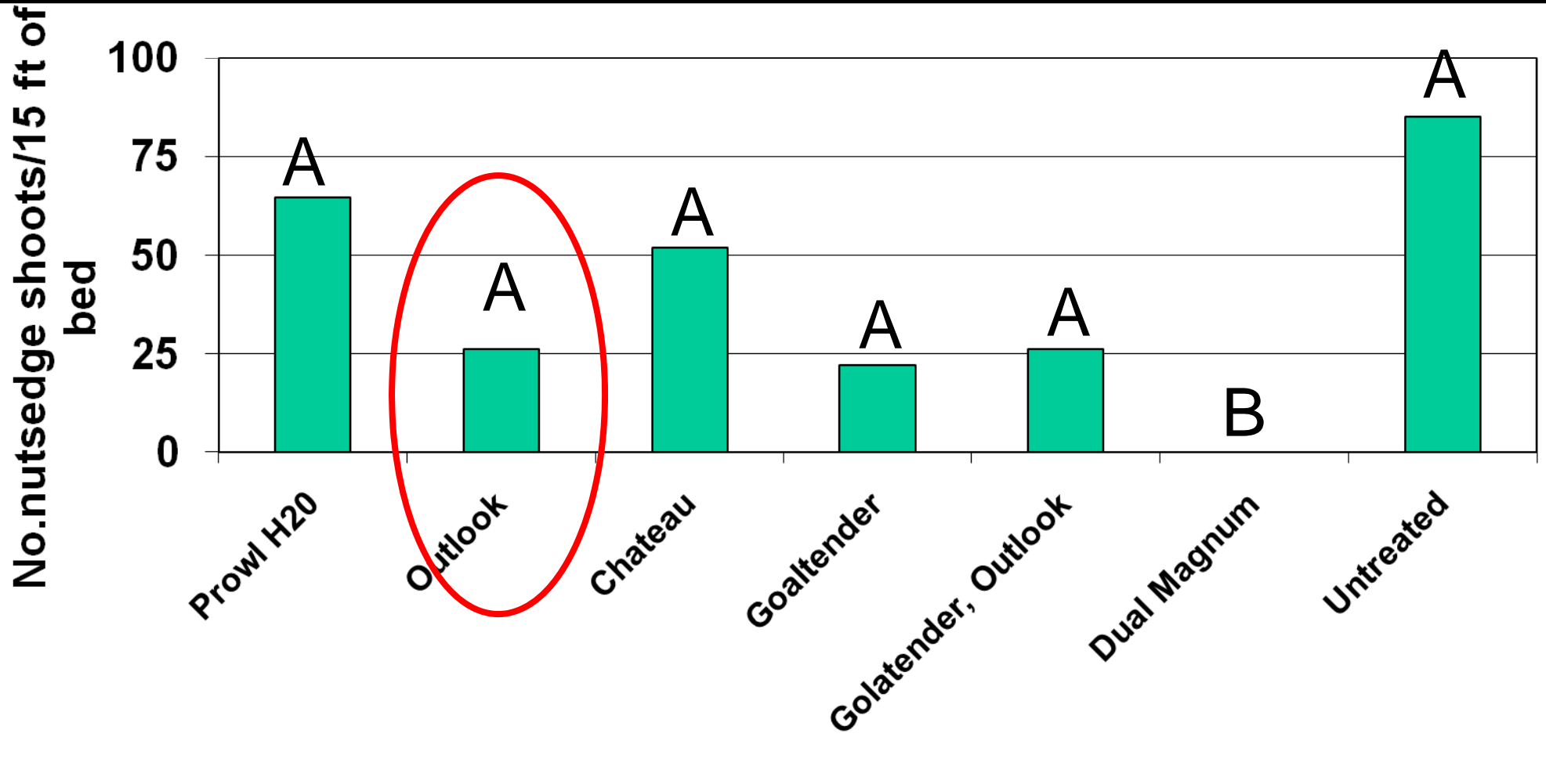




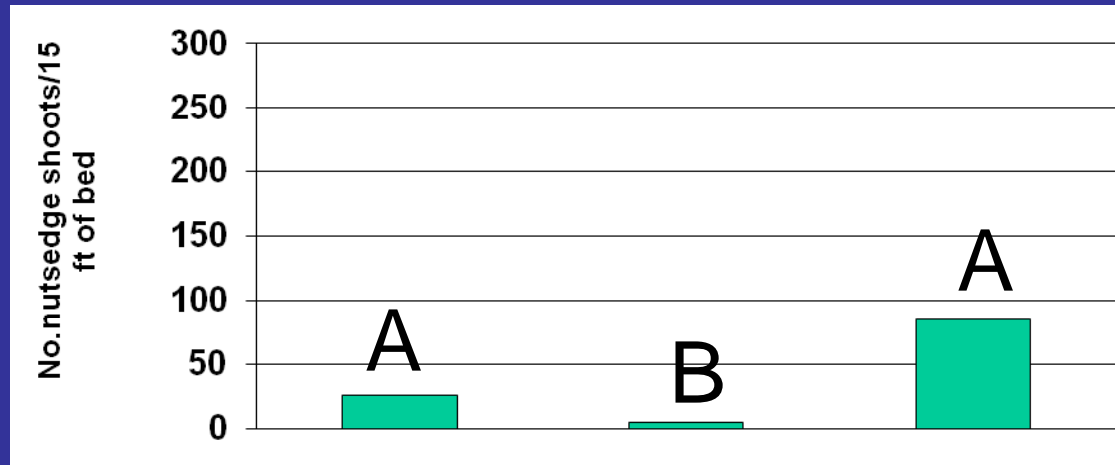
Ventura Trials



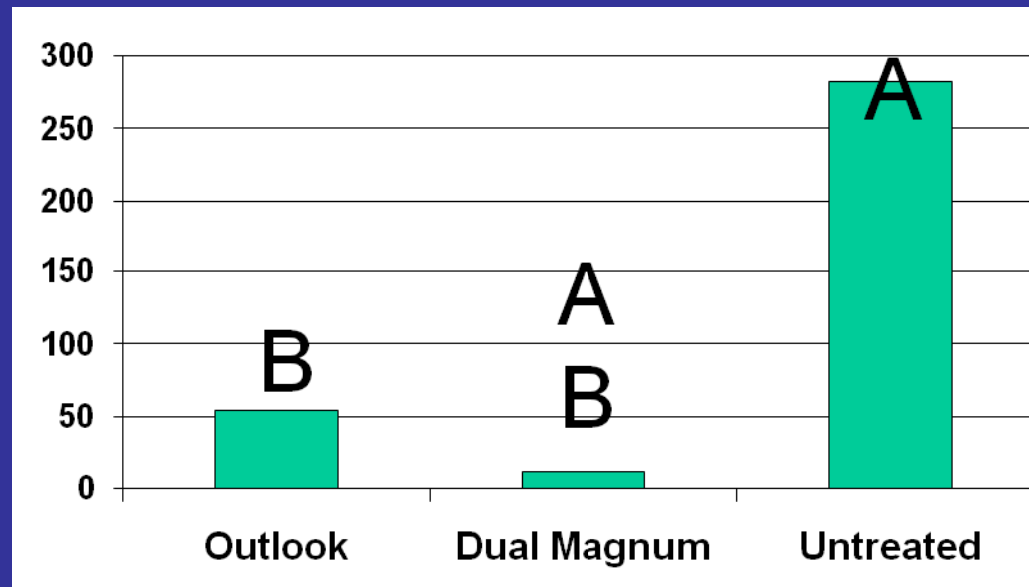
Nutsedge emerged 5/21 to 6/26



Nutsedge emerged after final Dual Magnum and Outlook application



7/11 (1 week)



8/7 (4 weeks)

Dual Magnum: nutsedge control



Untreated check



Summary

- **The Ventura trials showed good efficacy of Dual Magnum for controlling yellow nutsedge in onions**
- **It is unclear why there is a difference in activity of Dual Magnum and Outlook in Ventura County**
- **No difference between the two herbicides was observed in Monterey County**

Summary

- **Burning back nutsedge with acid fertilizer provides an opportunity to make Outlook work if nutsedge is emerged by the 2nd true leaf stage**
- **There may be a yield reduction from the caustic action of the fertilizer but it is much less than letting the nutsedge go uncontrolled**

Summary

- **Both Outlook and Dual Magnum will be able to help to safeguard the yield of onions at sites with significant yellow nutsedge pressure**

Acknowledgements

- **Bob Martin, Rio Farms**
- **James Guidici, Christensen & Giannini**
- **Don Burgeson, ConAgra Foods**
- **Miriam Silva Ruiz, Research Assistant**