

Nutsedge Control in Onions

Michelle Le Strange reporting on Research by:
Richard Smith & Oleg Daugovish
Farm Advisors, Monterey & Ventura Counties



Herbicide Timing

Metam
Paraquat
Roundup
Shark
Scythe

Dacthal
Prefar
Nortron
preemergence
to weeds

1st true leaf

Goal Tender

Nortron

Loop

Prowl H2O

2nd true leaf

Goal
Buctril
Prowl
Outlook
Select Max
Poast
Fusilade
Dual Magnum
(4th True Leaf
October, 2008)

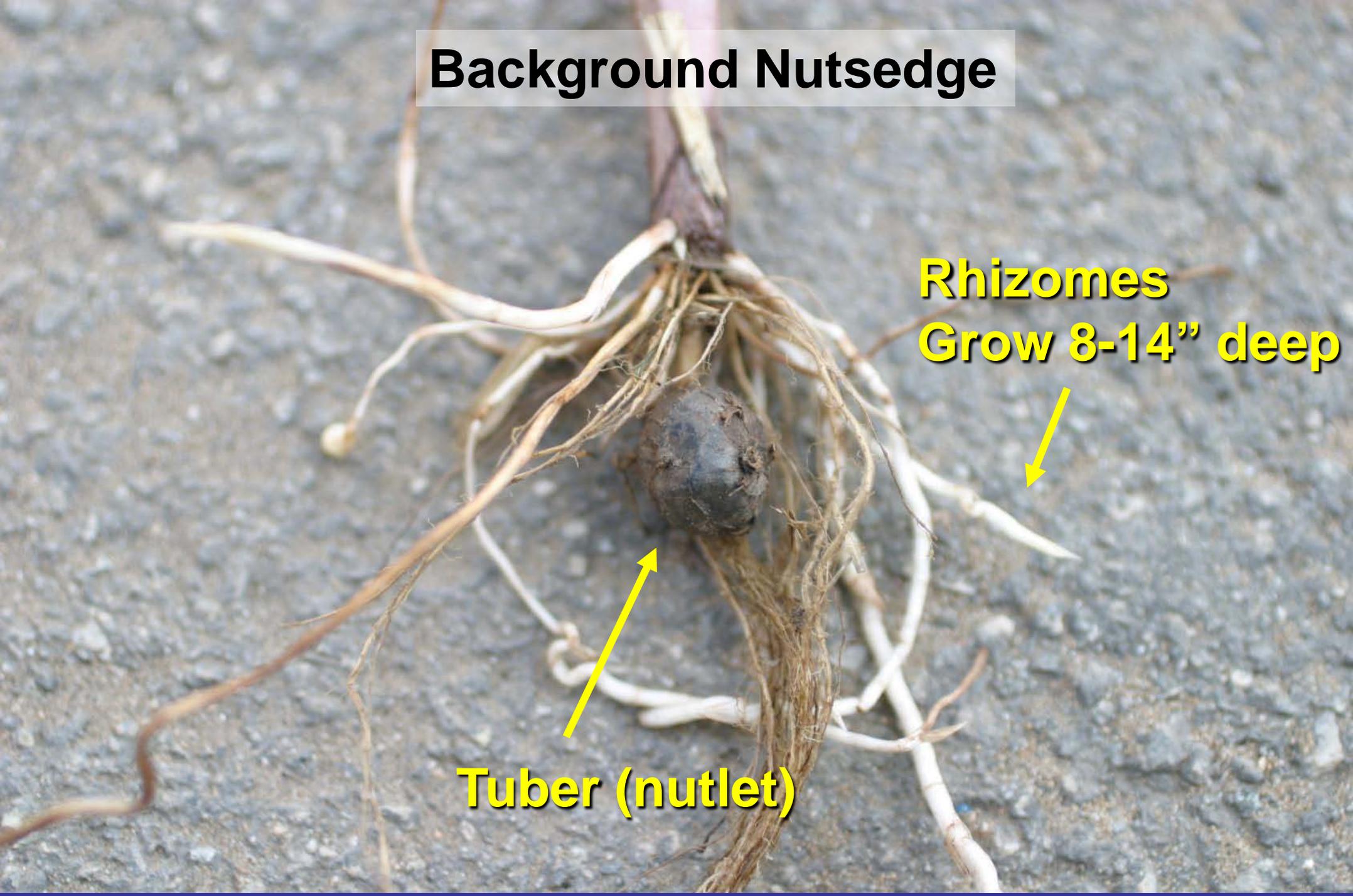
2007 and 2008 Registrations



Background Nutsedge

**Rhizomes
Grow 8-14" deep**

Tuber (nutlet)



**Tuber forming at
end of rhizome**



tuber

- Once the plant has developed more than 5 leaves it begins to form tubers (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)**
- They need to be applied prior to the emergence of nutsedge as it has no postemergence activity
- **They can delay tuber sprouting and kill shoots of yellow nutsedge**
- They 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
ONTCOR



- **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







7-7-0-7

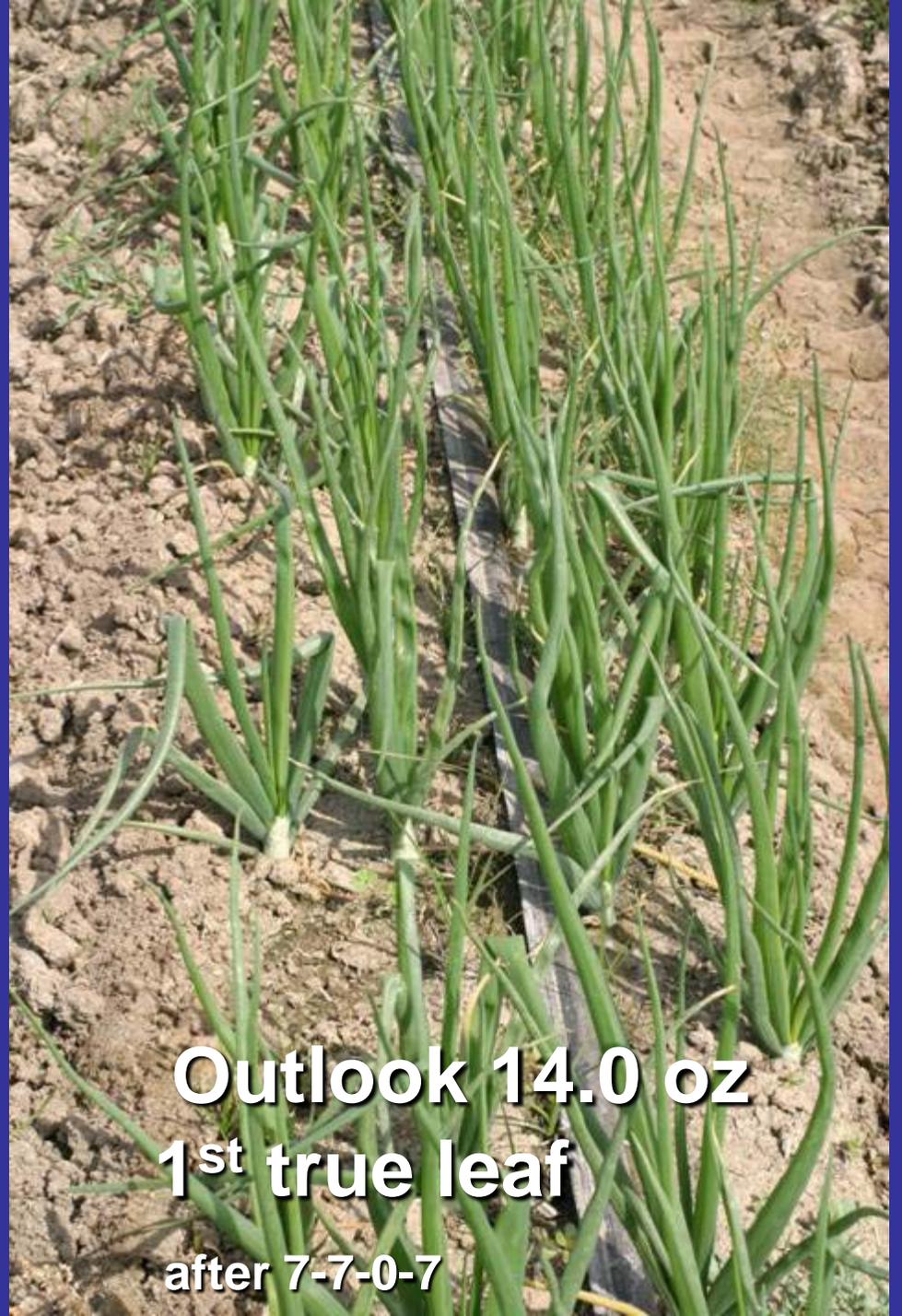
Outlook 7.0 + 7.0
1st true leaf



May 8, 2007



Untreated

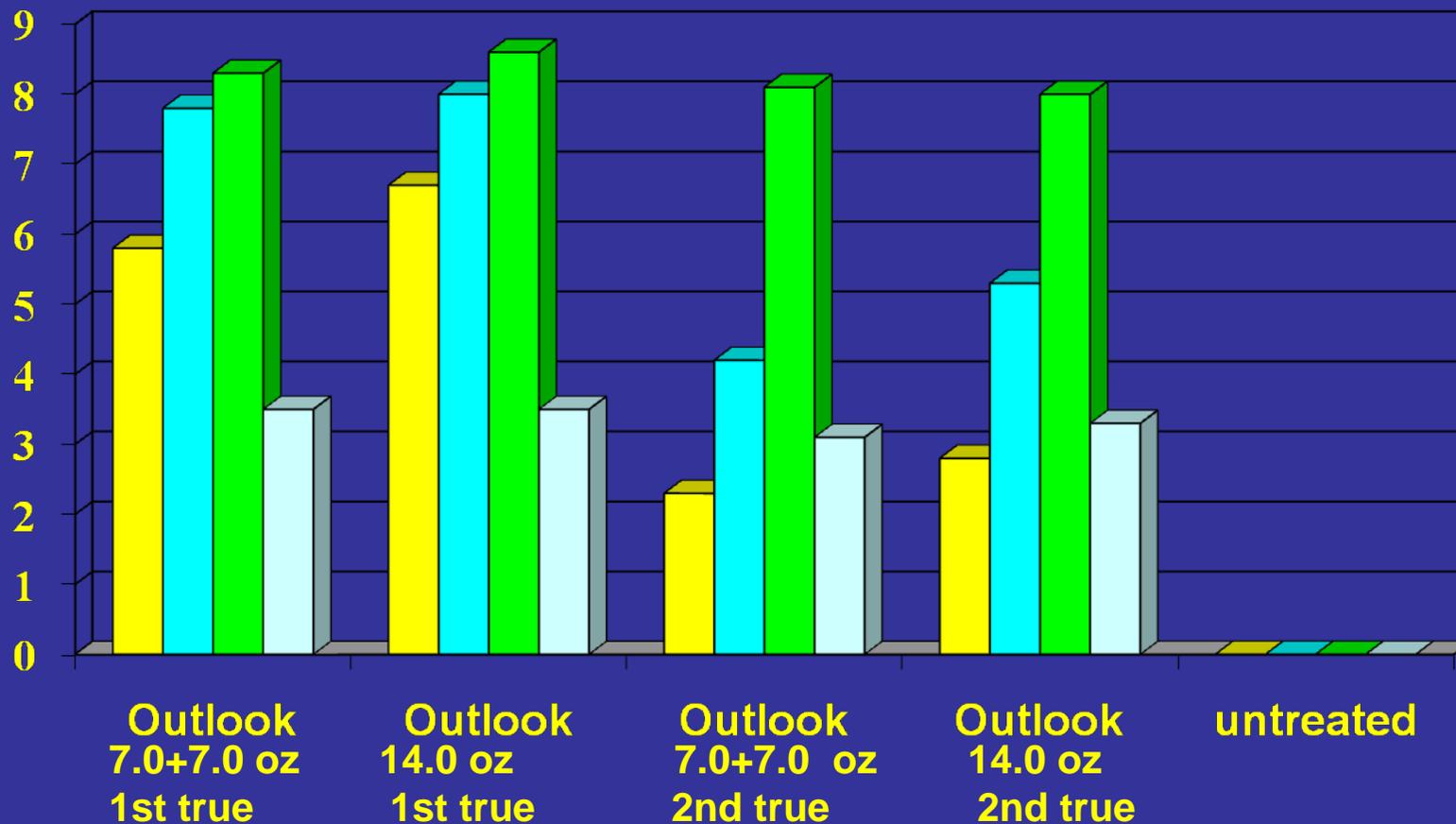


Outlook 14.0 oz
1st true leaf
after 7-7-0-7

Weed Rating

Outlook After Acid Fertilizer

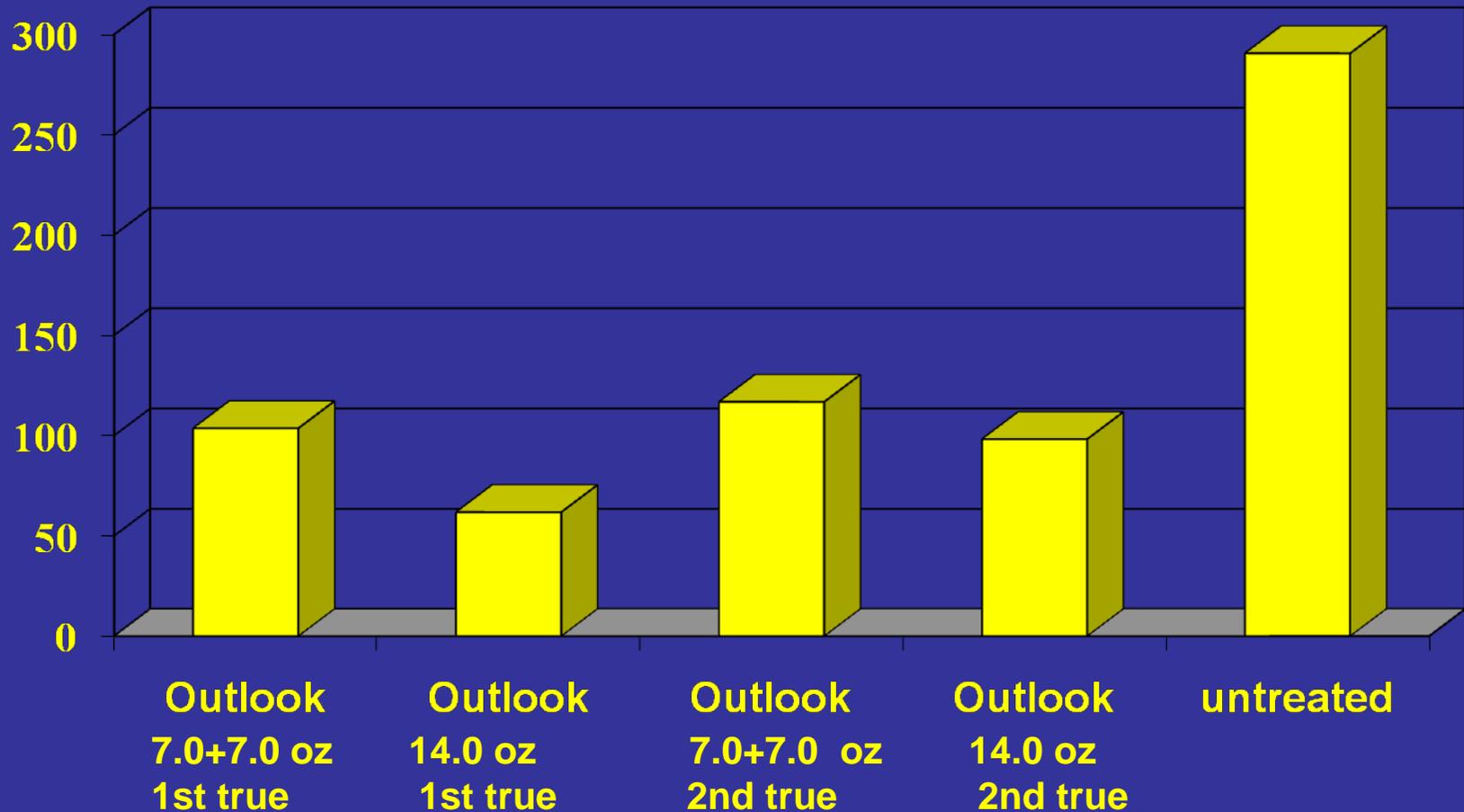
April 23; May 4; June 1; and August 9



Nutsedge tubers in the soil of the Outlook plots



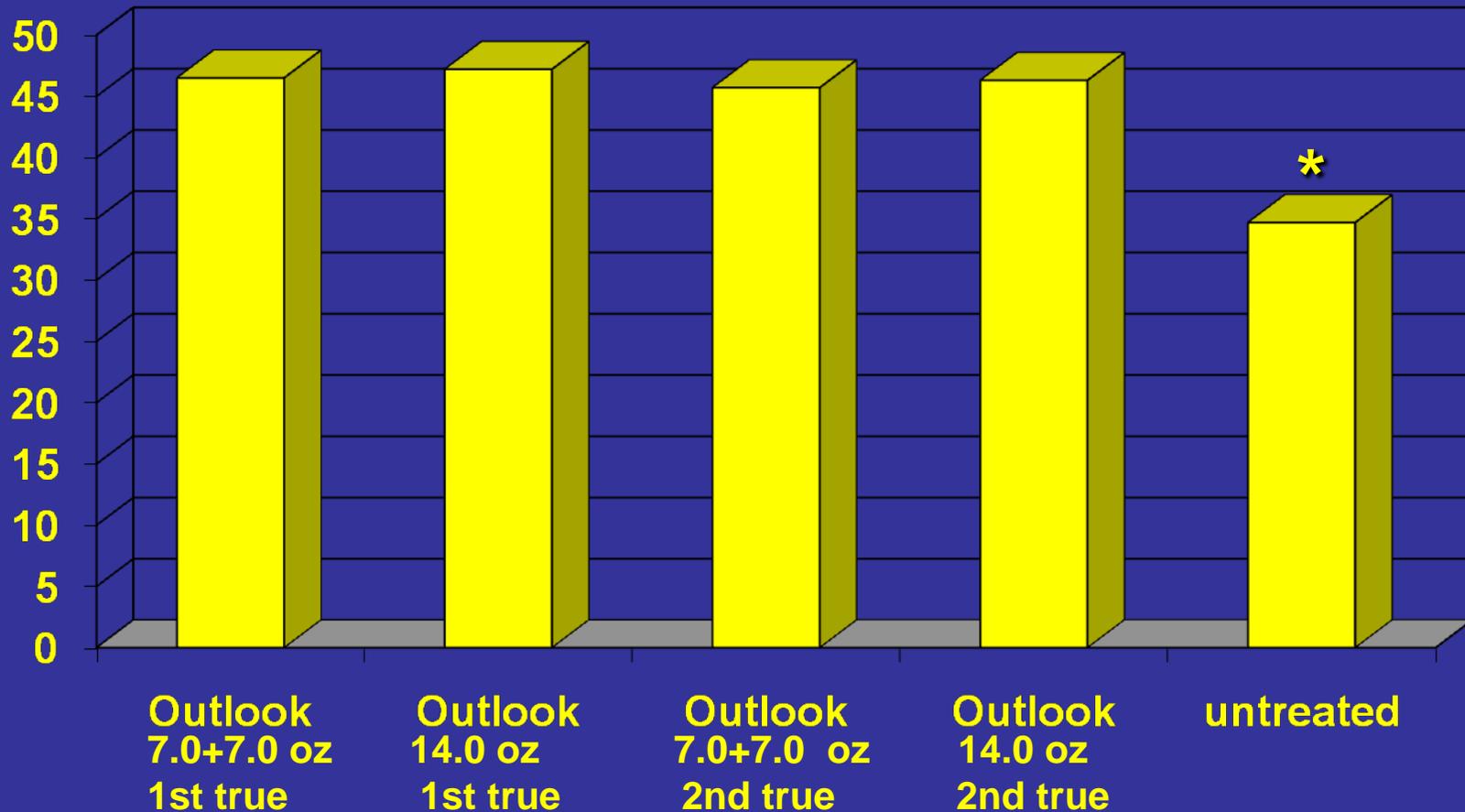
Nutsedge Tubers Per 1000 cm³ of Soil



Yield Evaluations



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



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

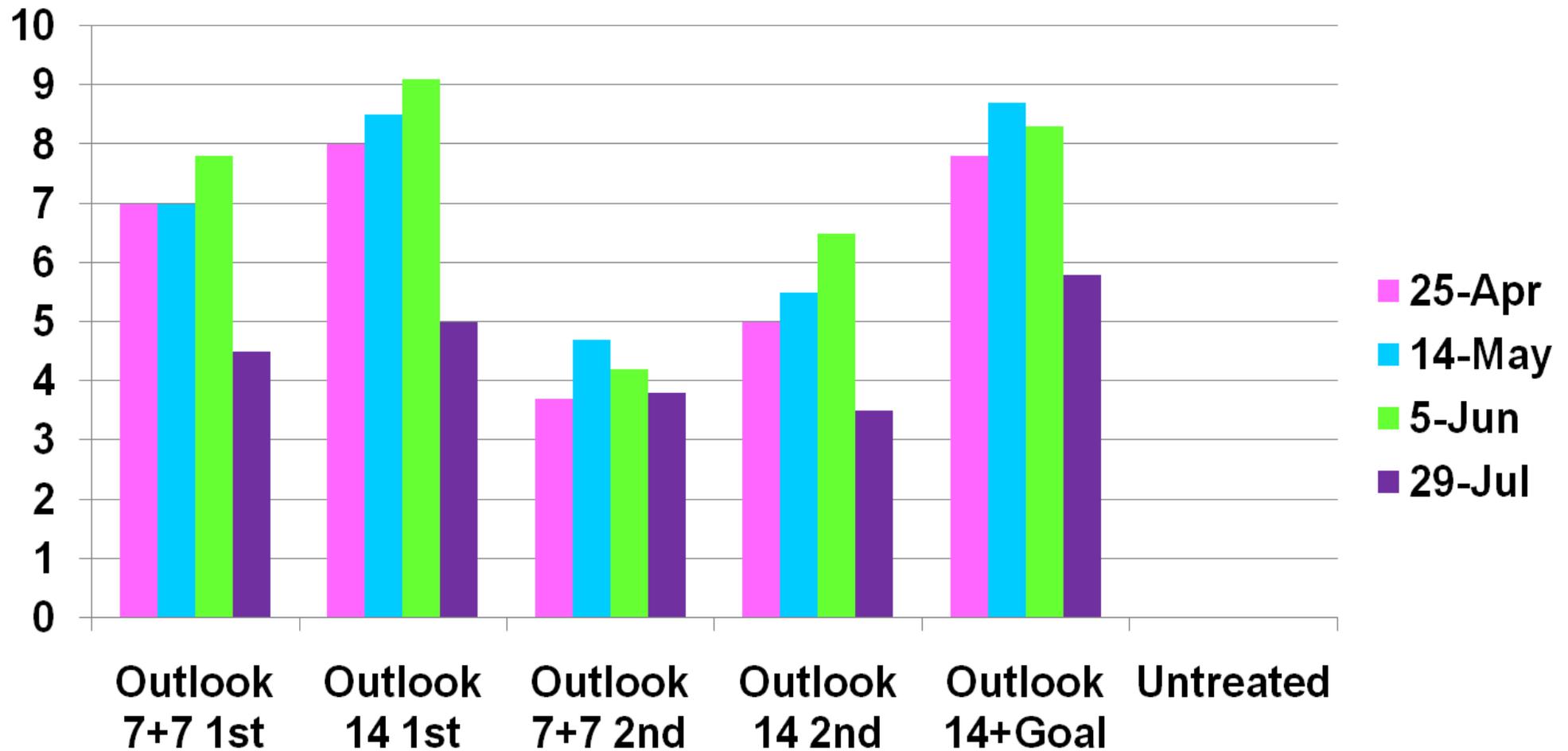


Untreated

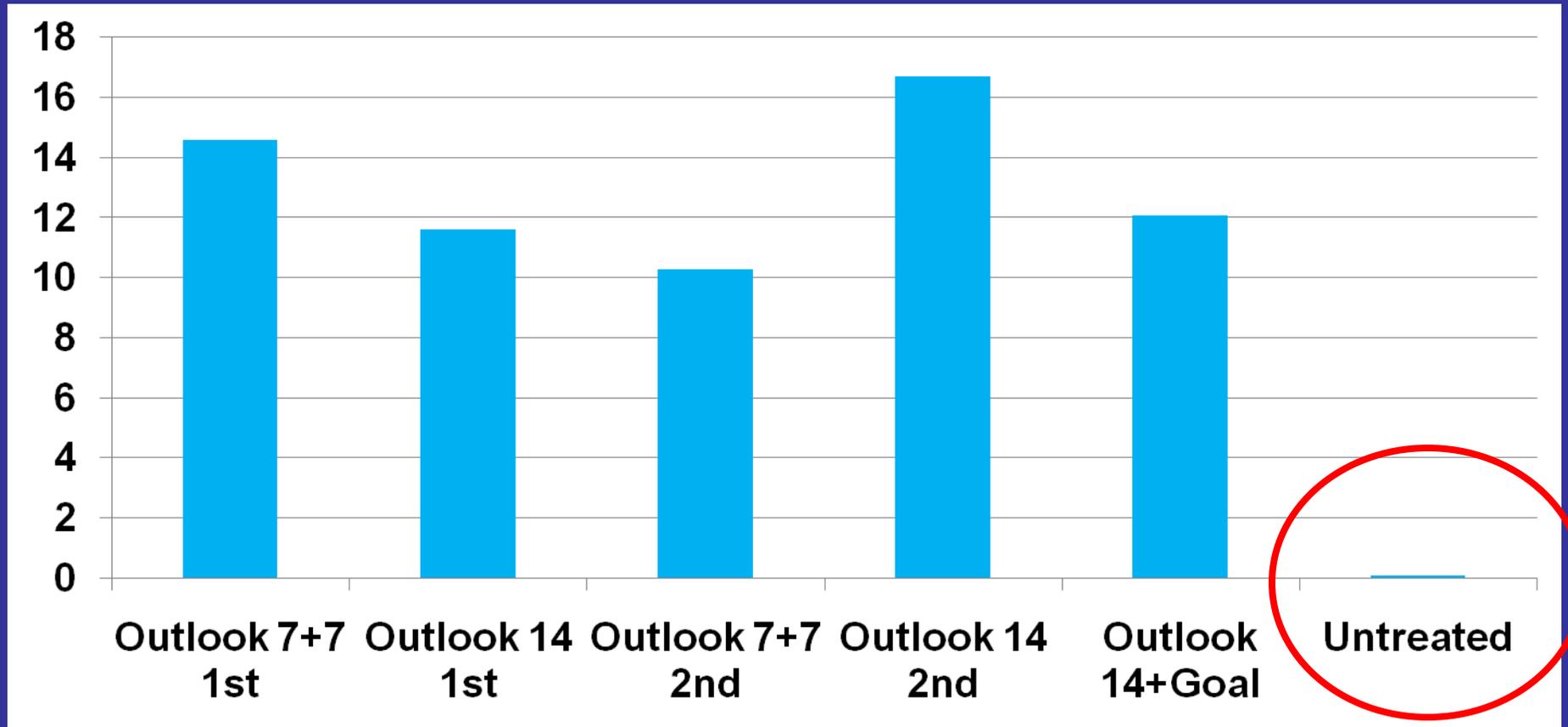
**7-7-0-7 + Outlook 7+7
1st true leaf**



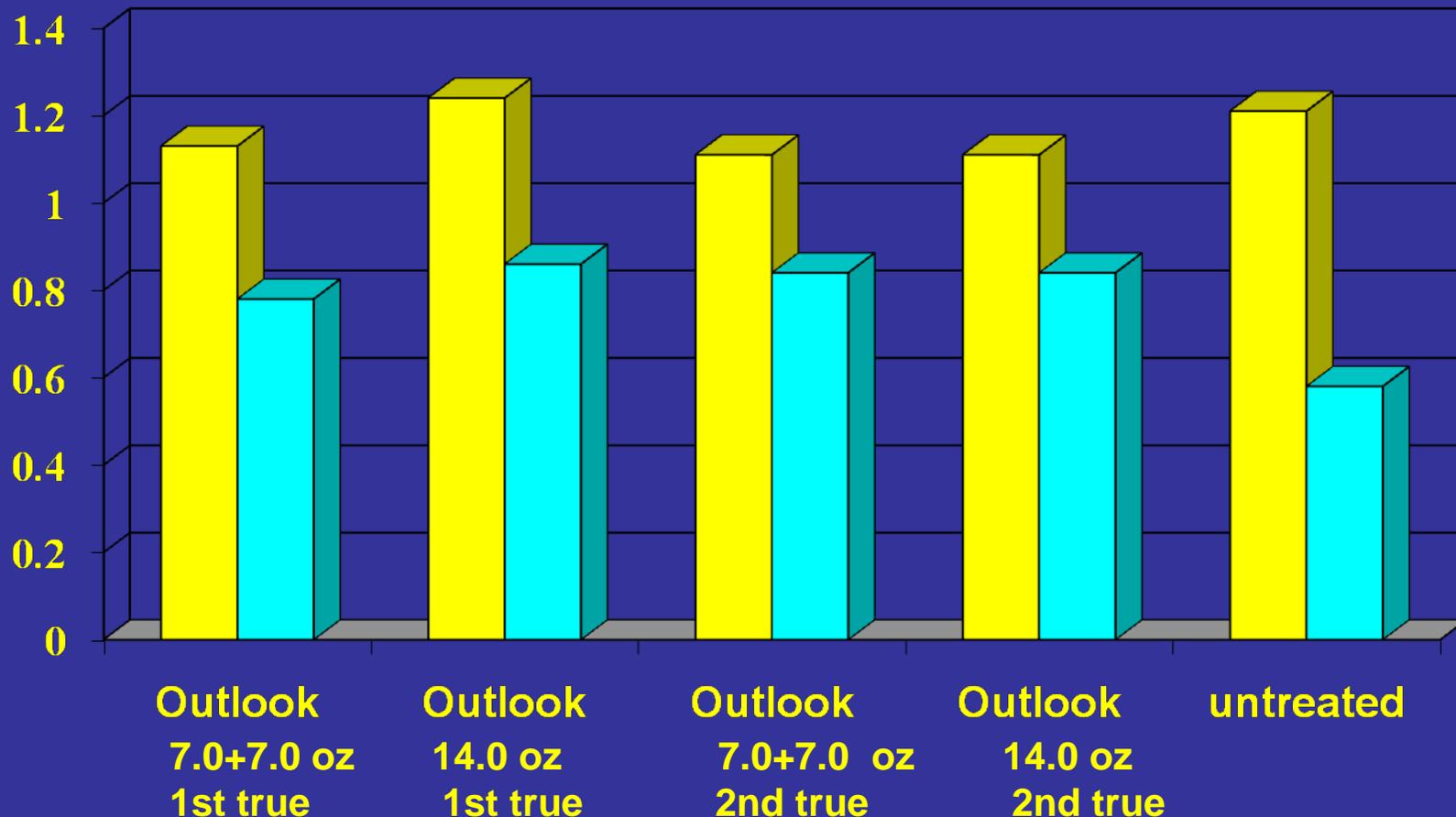
Nutsedge Weed Control Rating



Yield of Onions T/A



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

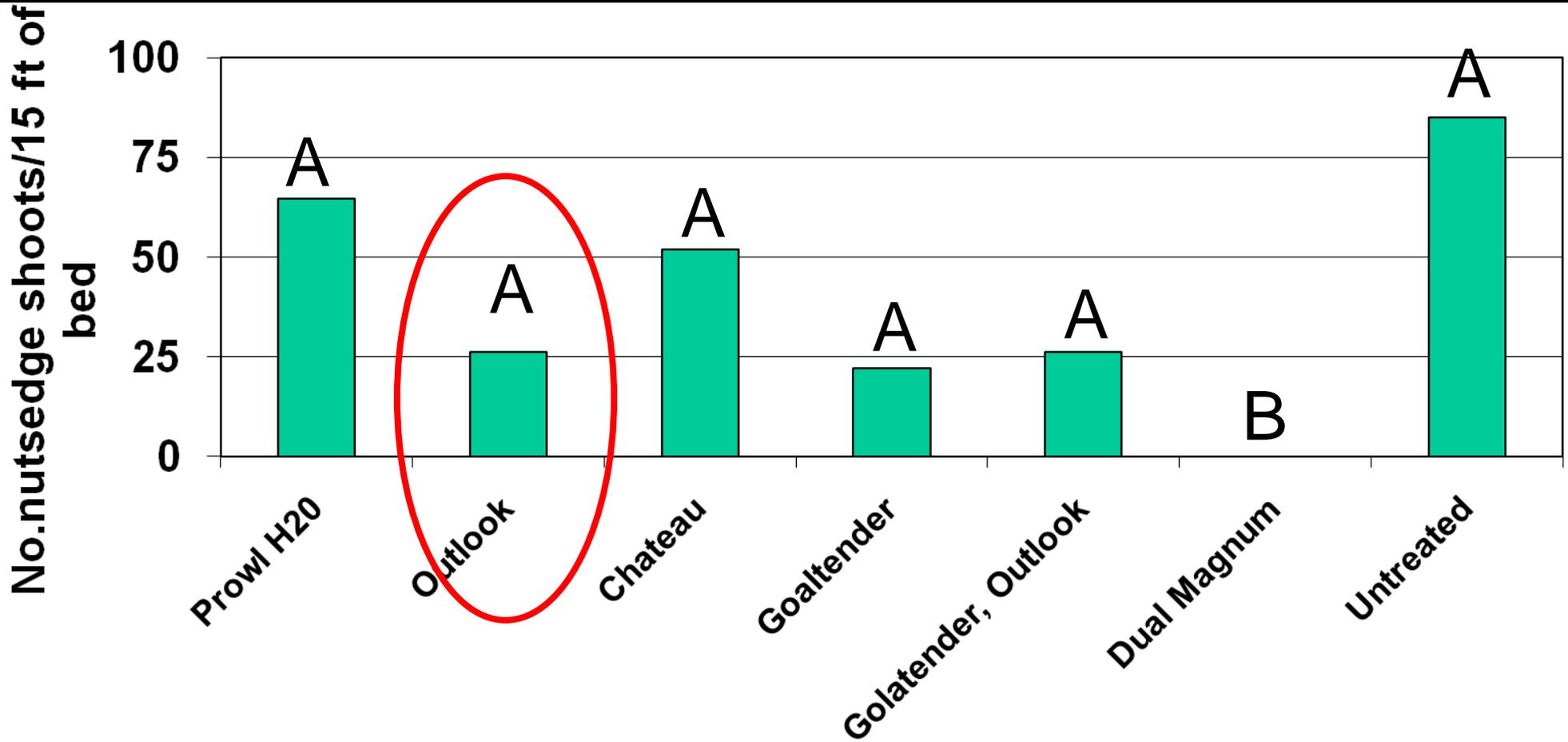




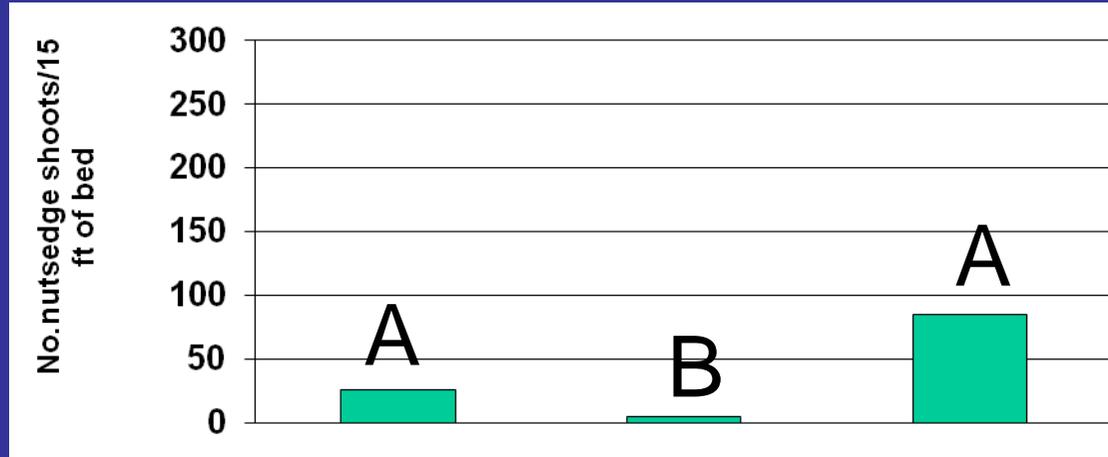
Ventura Trials



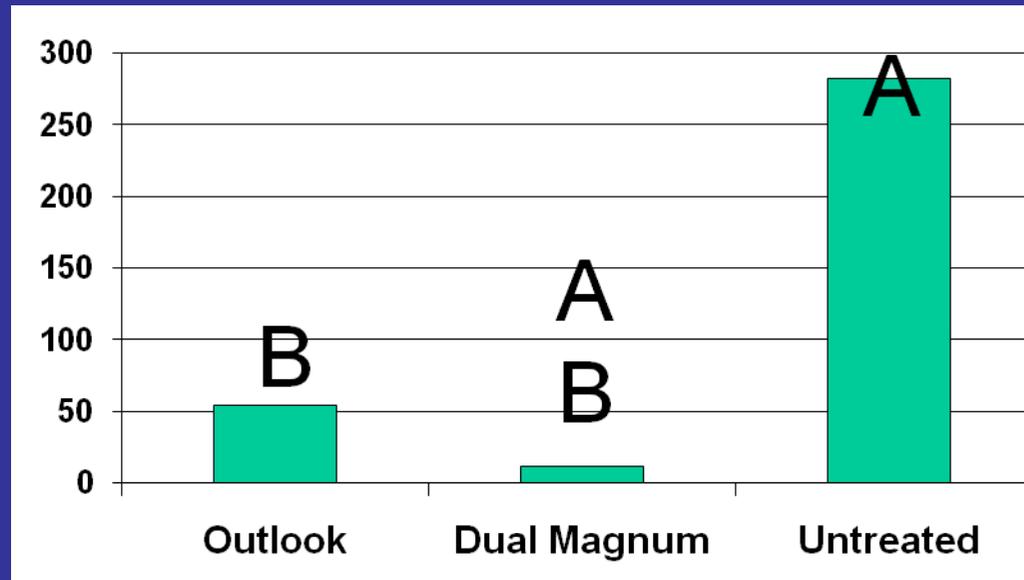
Nutsedge emerged 5/21 to 6/26



Nutsedge emerged after final Dual Magnum and Outlook application



7/11 (1 week)



8/7 (4 weeks)

Dual Magnum: nutsedge control



Untreated check



Summary

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

Summary

- 4. Burning back nutsedge with acid fertilizer provides an opportunity to make Outlook work if nutsedge is emerged by the 2nd true leaf stage**
- 5. 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

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



Acknowledgements



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