2016 Salinas Valley Weed School

- **DPR Credits: M-1139-16**
  - **3.0 other category credits**
- **Please put cell phone on quiet mode**
- **Thank you Monterey Bay Chapter of CAPCA for the refreshments**

2016 Weed School

- **8:30 Update on weed control in coastal vegetables**
  Richard Smith, Vegetable Crop and Weed Science Farm Advisor, Monterey County
- **9:00 Mechanized control of weeds in vegetable crops**
  Steve Fennimore, Extension Vegetable Weed Specialist, U.C., Davis, Salinas
- **9:30 Engineering concerns for designing mechanical vegetable weeding systems**
  Mark Siemens, Crop Mechanization Specialist, University of Arizona, Yuma Agricultural Center
- **10:00 Break and weed seedling exhibit**
- **10:30 The effect of irrigation technique and amount on vegetable herbicides**
  Barry Tickes, Weed Science Farm Advisor, La Paz and Mohave Counties, University of Arizona
- **11:00 Recent developments in the cost of hand weeding vegetables**
  Laura Tourte, Farm Management Farm Advisor, Santa Cruz and Monterey Counties
- **11:30 Development (or lack of) of herbicide resistance in weeds**
  Steve Fennimore, Extension Vegetable Weed Specialist, U.C., Davis, Salinas

Weed Control Studies in Vegetable Production

- **Richard Smith, Vegetable Crop and Weed Science Farm Advisor, Monterey County**

Summary of 2016 Efforts

- Low rates of Kerb for baby lettuce
- Zidua (pyroxasulfone) studies
  - Celery
  - Leeks, onions & garlic
  - peppers
- Materials for automated thinner/weeders
- Spin-Aid evaluations on spinach
- Post transplant applications of Goal Tender for Brussels sprouts

All available on the UCCE Monterey County Website: Veg/Weed Program

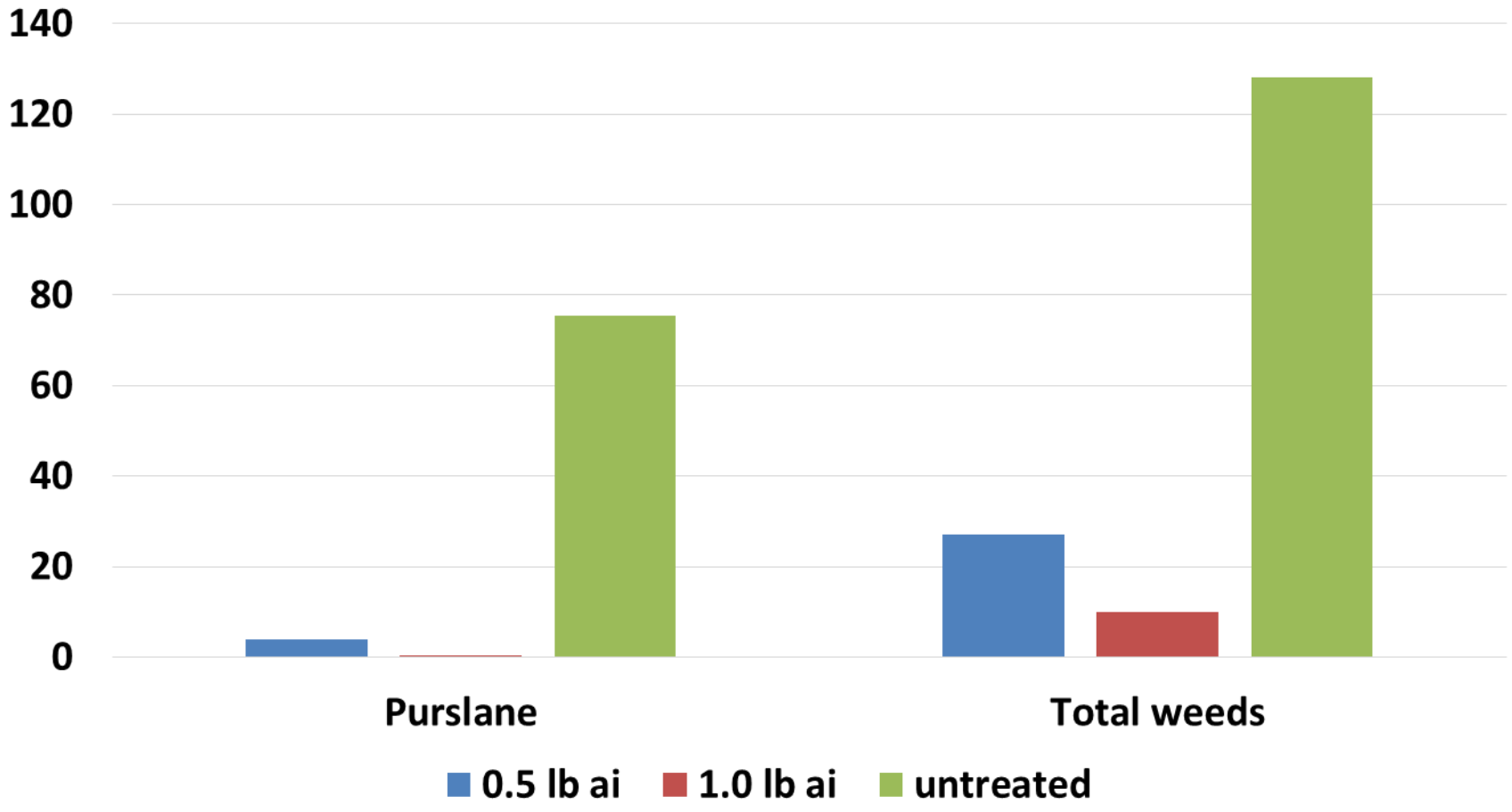
Low Rates of Kerb SC for Baby Leaf Lettuce

- **The new label issued by Dow AgroSciences in January of this year included a 25 day preharvest interval for the use of Kerb**
- **This change in the label was in response to requests from growers to allow the use of Kerb on baby lettuce**

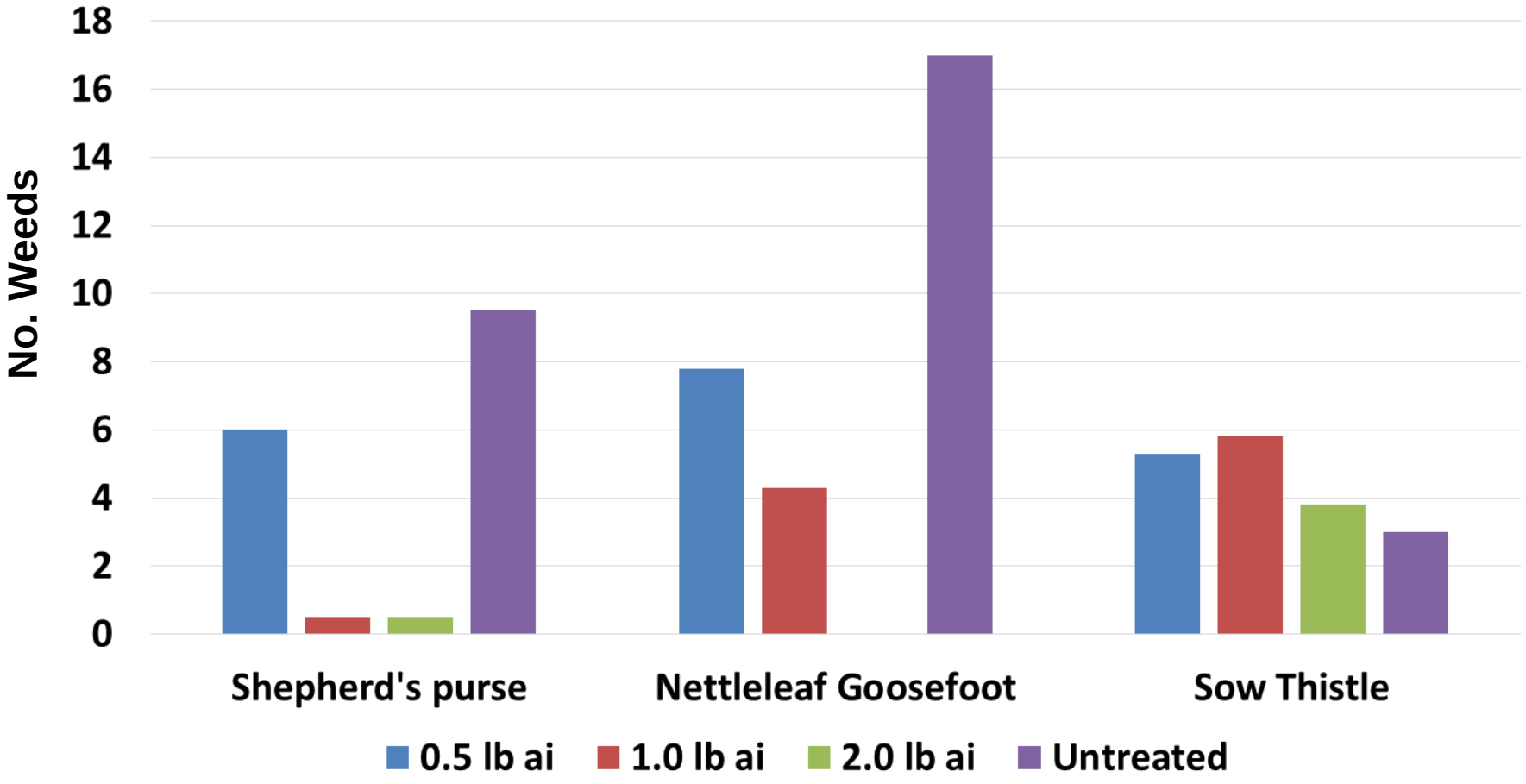
Rate	PHI
up to 1.25 pints/A (0.5 lbs a.i./A)	25 days
up to 1.80 pints/A (0.75 lbs a.i./A)	35 days
up to 3.75 pints/A (1.5 lbs a.i./A)	45 days
up to 5.00 pints/A (2.0 lbs a.i./A)	55 days

Evaluation of low rates of Kerb

Trial No. 2 – Hartnell East Campus



Evaluation of low rates of Kerb



Untreated

0.5 lb ai/A
1.25 pint/A

Weed Control Studies on Spinach

Weed Control Studies on Spinach

- Spinach is susceptible to high levels of weed pressure
- Prior rotations can reduce or increase weeds
- Preemergent options offer good control, but each have an issue
  - RoNeet (48 hour reentry interval)
  - Dual Magnum (50 day PHI and plant back issues)

Spin-Aid

- **Phenmedipham**
- **Registered for processing and seed spinach and table beets**
- **1.3 lbs a.i./gallon**
- **Label has warnings on making applications at temperatures >75º F**
- **12 hour REI**
- **21 day PHI**

Spin-Aid

- **Spin-Aid is a photosystem II inhibitor that is applied post emergence**
- **The photosynthetic electron transport chain is disturbed, and plant death is mainly due to disruption of cell membranes**
- **Under some conditions, the crop plant may experience temporary stunting, and/or chlorosis and marginal leaf burn**

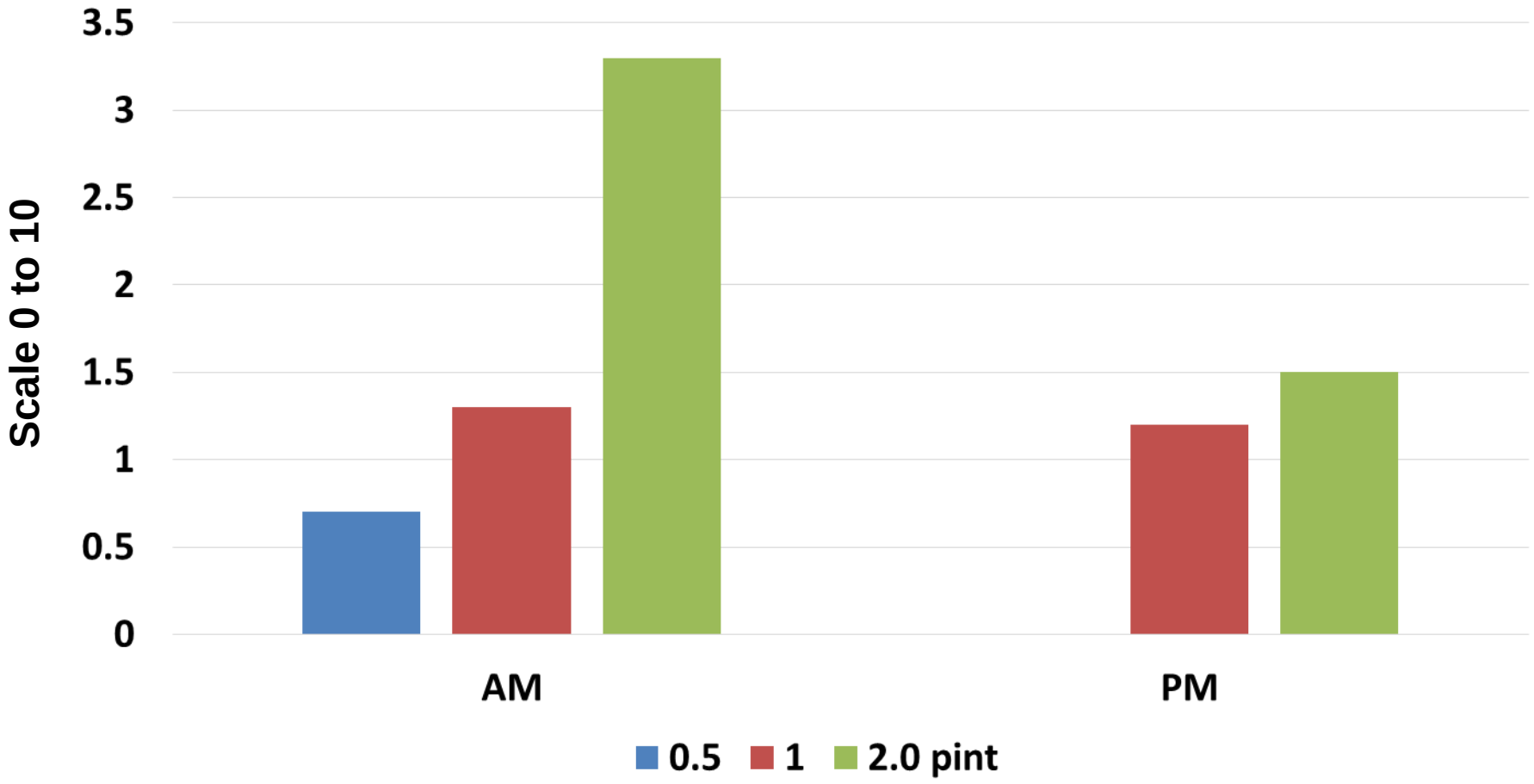
Spin-Aid

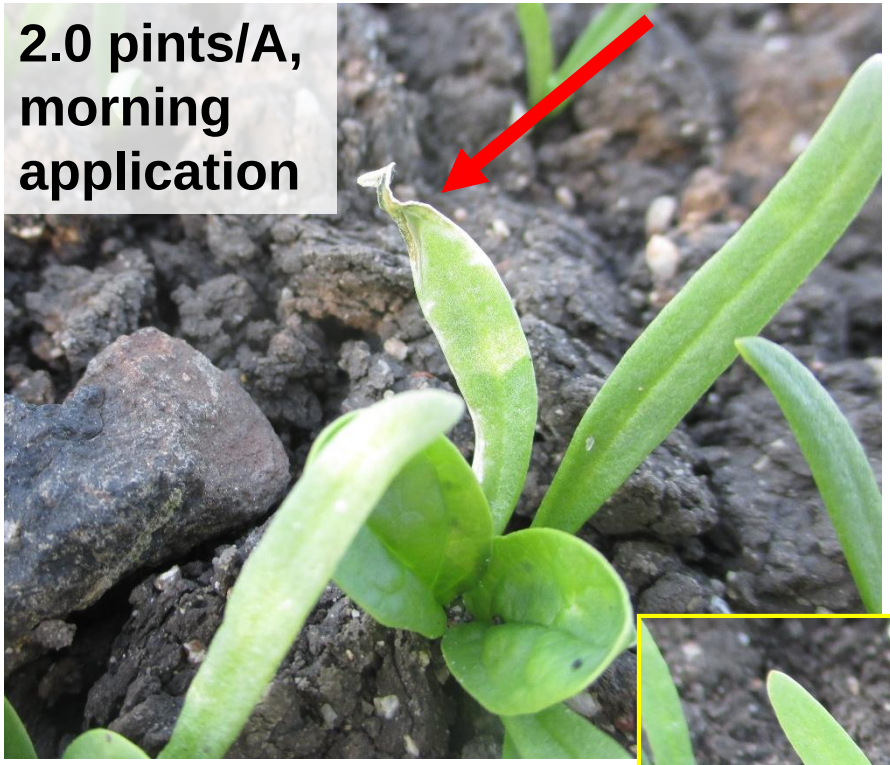
- **Phytotoxicity caused by Spin-Aid my be brought on by environmental conditions such as high temperatures or high light**
- **Steve Fennimore and Ran Lati showed that high light conditions aggravated phytotoxicity of Spin-Aid**
- **Evening or nighttime applications were suggested as a means of mitigating this effect**

2016 Evaluations in Commerical Production Fields

Phytotoxicity of Spin-Aid

Rates vs Timing

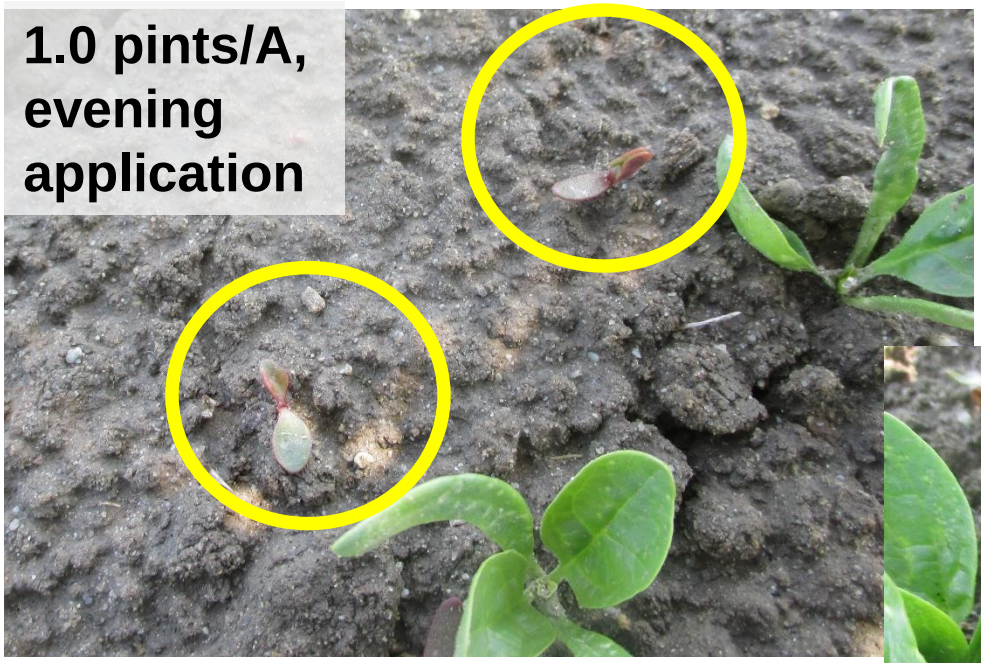



2.0 pints/A, morning application


2.0 pints/A, evening application

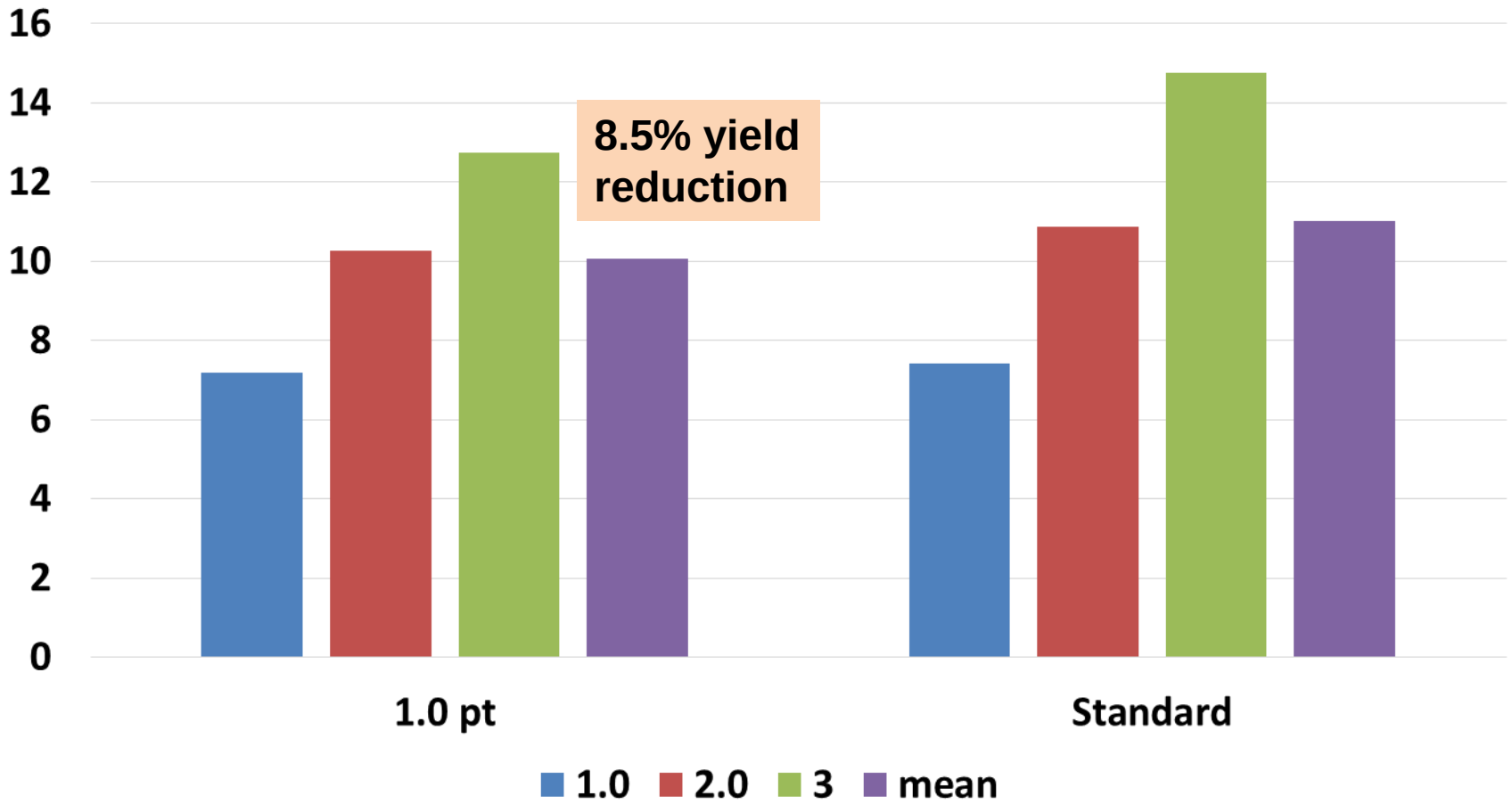
Commercial Trial

Applied at night with commercial applicator



Yield of Three Spin-Aid Trials

1.0 pt/A vs Standard




May Provide a tool to deal with difficult situations
We are working with the registrant to see if changes can be made to the label to allow its use on clip spinach – that will require a reduction in the PHI

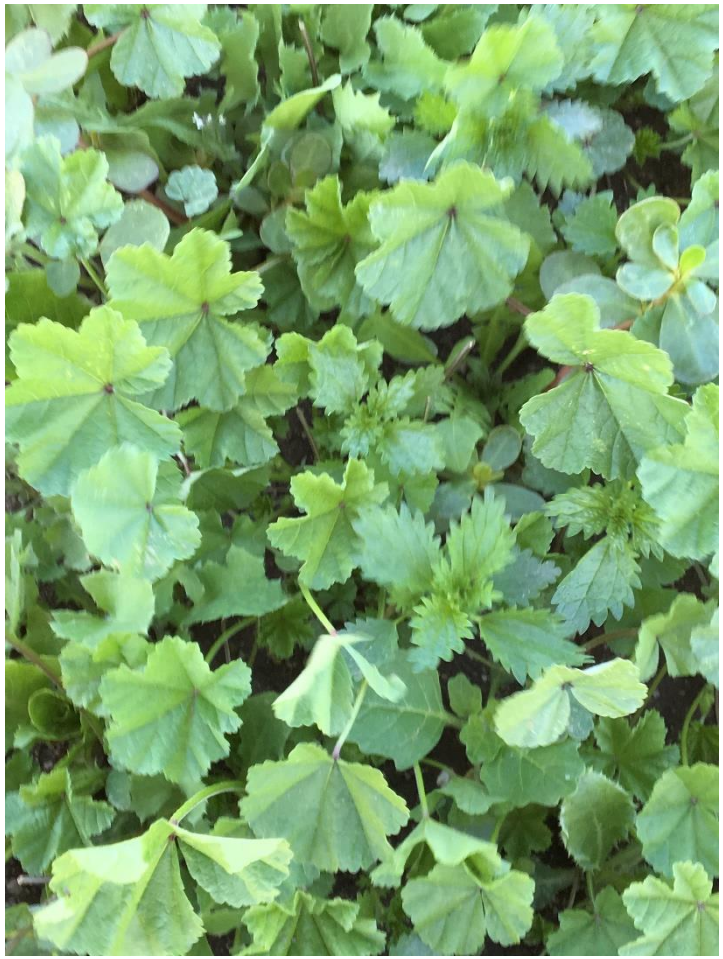
Evaluation of Materials for Use in Automated Thinners/Weeders

Material	Rate	2 days after application
Suppress	6% v/v	69.9
Suppress	6% v/v @pH-6.5	68.5
Suppress	9% v/v	68.5
Suppress	9% v/v @pH-6.5	90.1
Scythe	9% v/v	81.2
Rely	29 oz/A	31.1
Rely	43 oz/A	32.5
Shark	1 oz/A	89.1
27-0-0-5	37 gal/A	67.9
27-0-0-5 MSO	37 gal/A 1% v/v	93.9
SF exp.	12% v/v	77.4
Untreated	---	0.0

Material	Rate	8 days after application
Suppress	6% v/v	62.2
Suppress	6% v/v @pH-6.5	60.7
Suppress	9% v/v	64.6
Suppress	9% v/v @pH-6.5	80.1
Scythe	9% v/v	73.4
Rely	29 oz/A	96.1
Rely	43 oz/A	97.5
Shark	1 oz/A	96.7
27-0-0-5	37 gal/A	71.9
27-0-0-5 MSO	37 gal/A 1% v/v	94.6
SF exp.	12% v/v	70.9
Untreated	---	0.0

Untreated Control

All photos 8 days after application



Suppress 9% @pH 6.5

Suppress 9% @pH 6.5

Scythe 9%

Rely 29 ounces/A

Shark 1.0 ounce/A

27-0-0-5

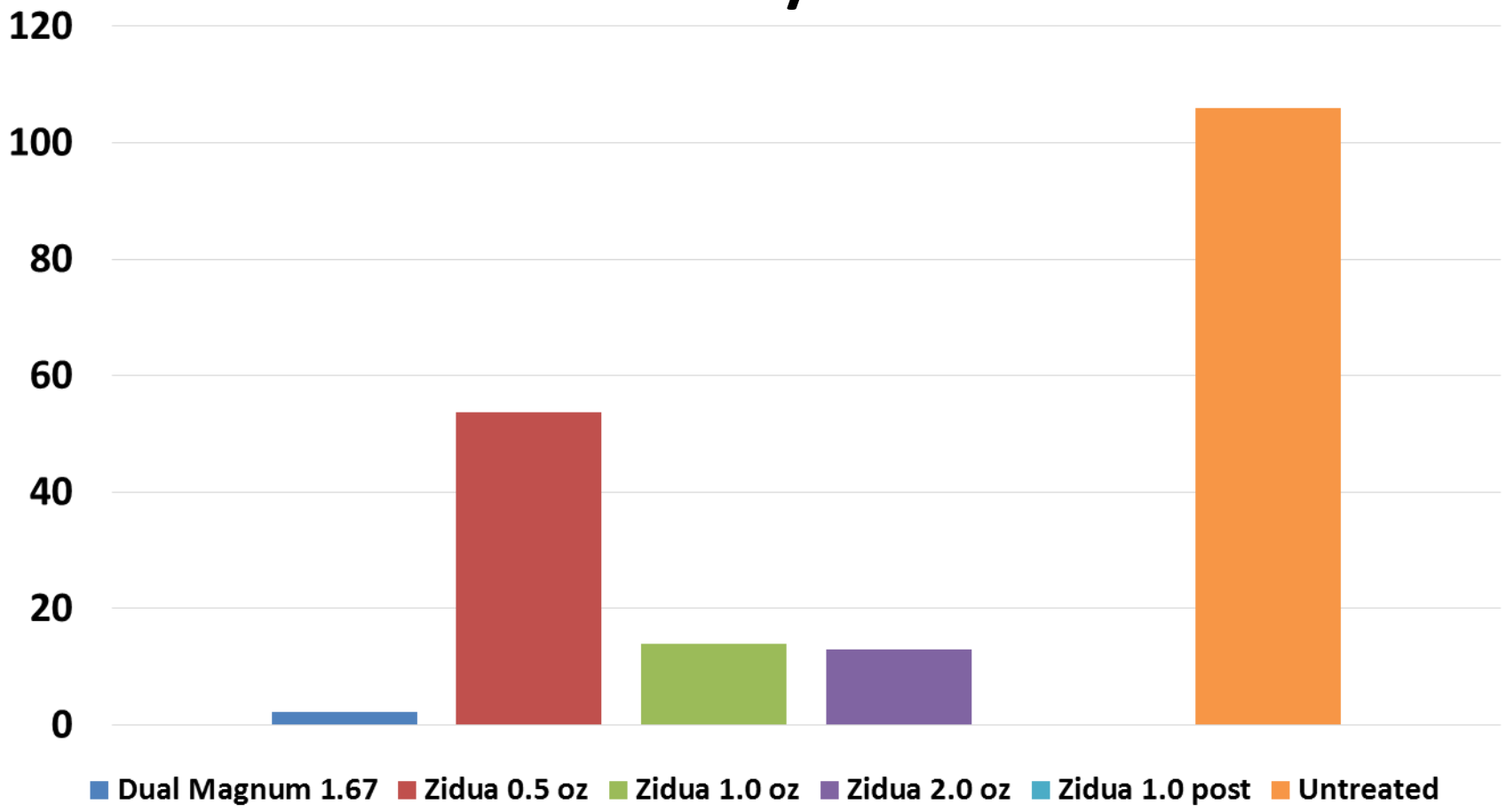
27-0-0-5+MSO

SF Experimental

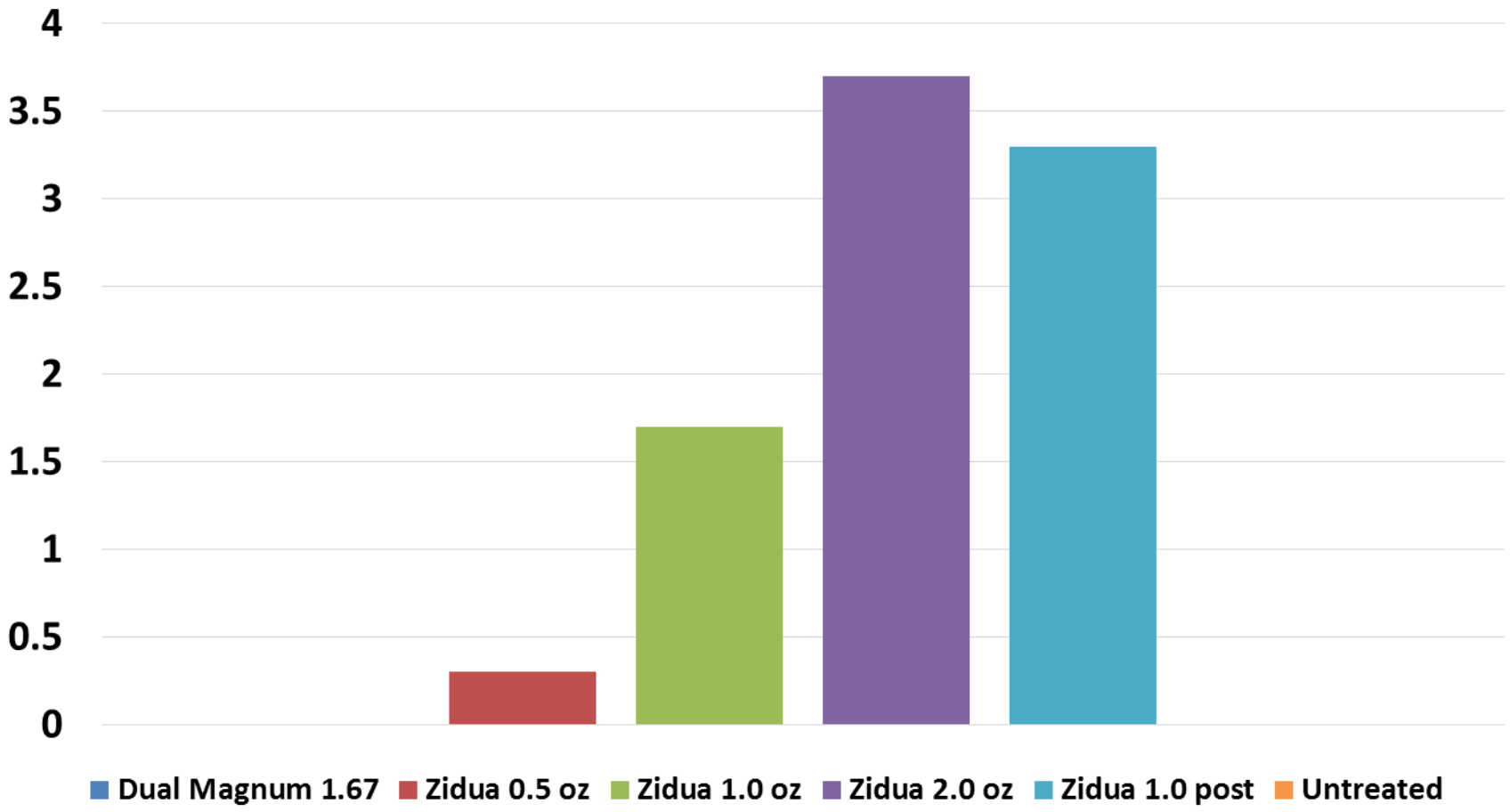
Zidua Evaluations

- **Zidua did not look promising:**
  - **Onions preemergence**
  - **Celery at transplanting**
- **Zidua looks more promising:**
  - **Leeks pre and post transplanting**
  - **Garlic preplant**
  - **Peppers?**

Pepper Trial
Hairy Nightshade
Number/10 ft^2

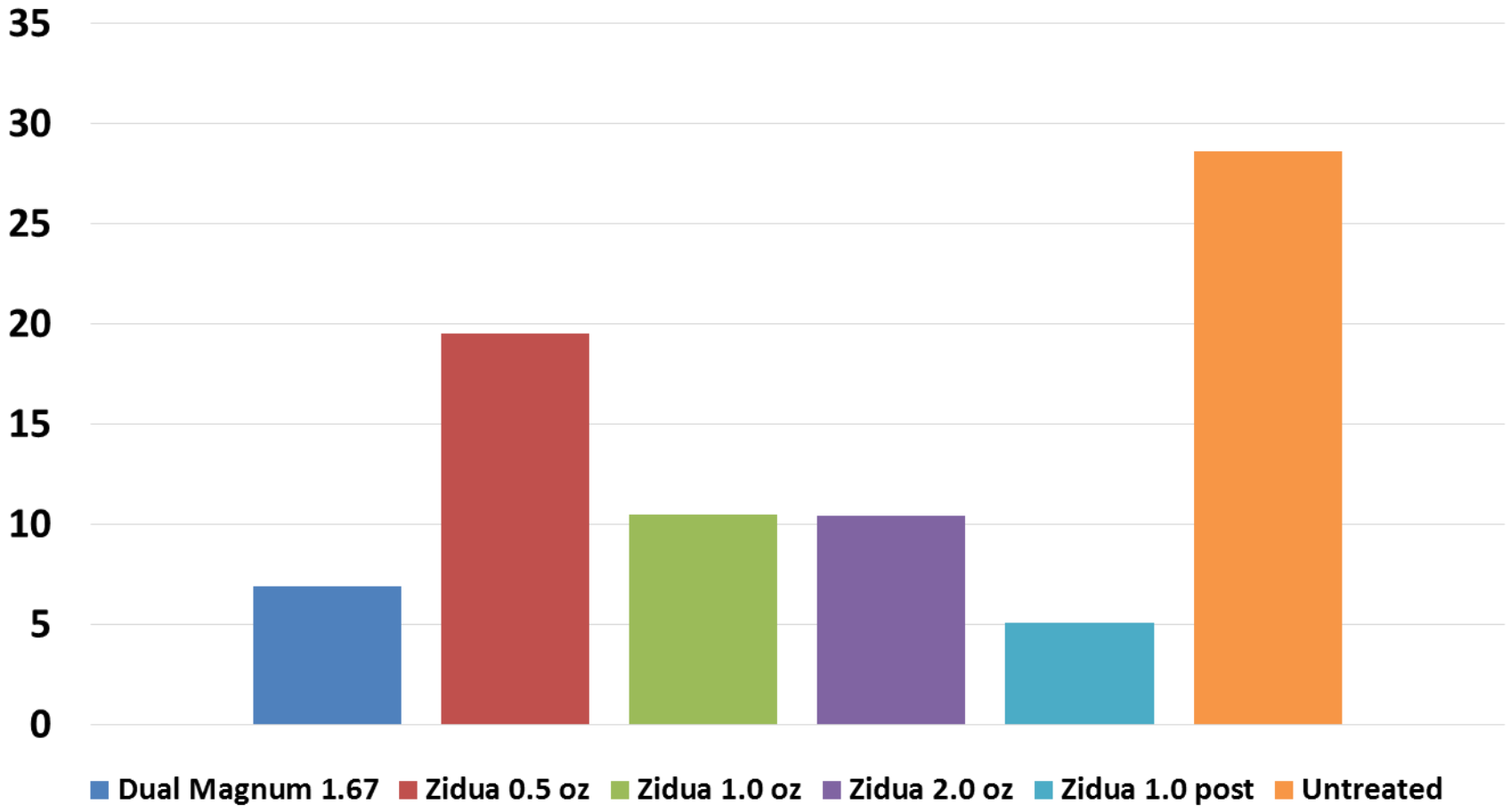


Phytotoxicity



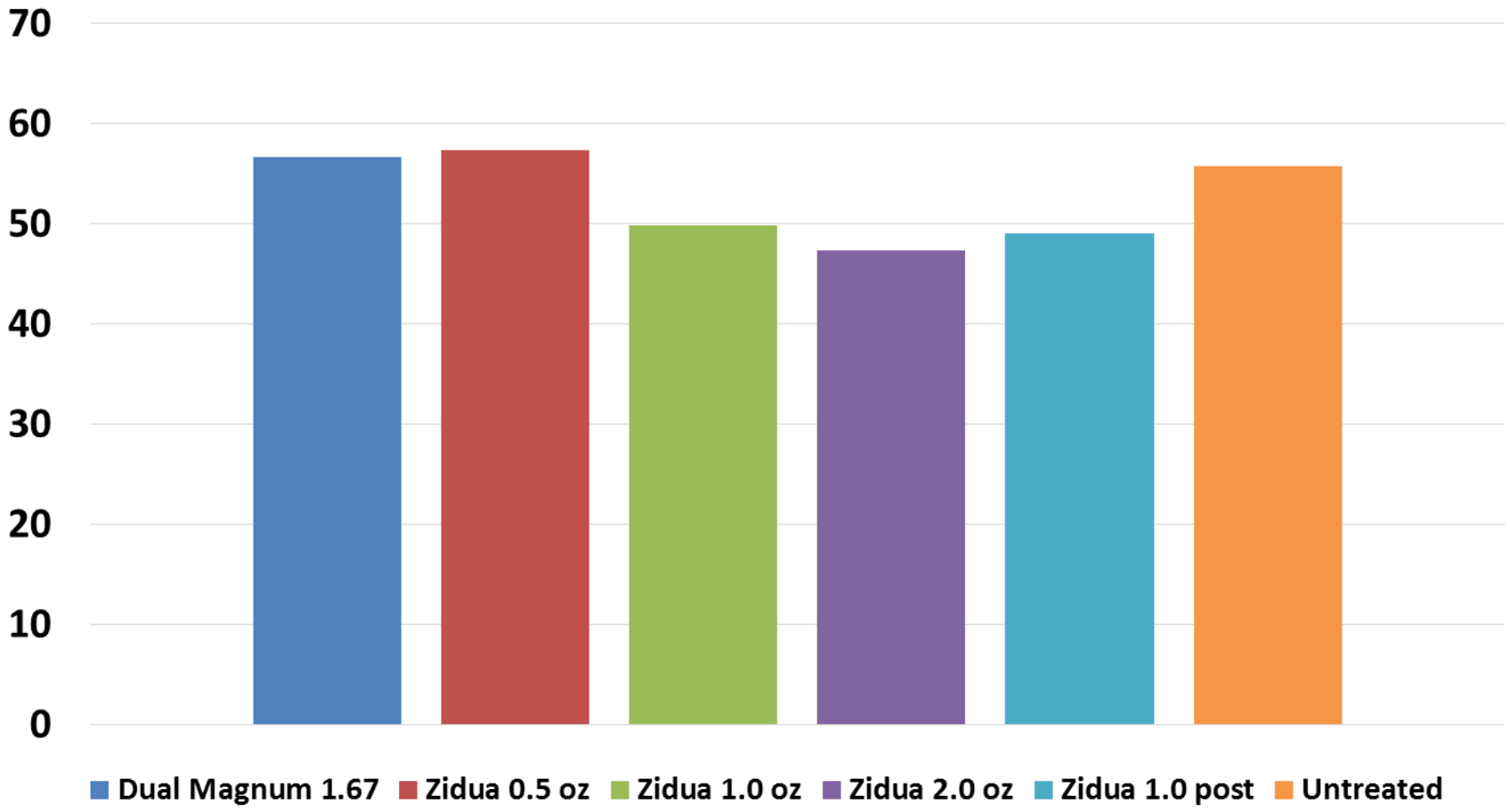
Weeding Time

hrs/A



Yield

Tons/A


70
60
50
40
30
20
10
0
Dual Magnum 1.67
Zidua 0.5 oz
Zidua 1.0 oz
Zidua 2.0 oz
Zidua 1.0 post
Untreated

Acknowledgements

- **Tricia Love, Karina Mendez, Kacie Wynn**
- **Cooperating Growers and PCA's**