

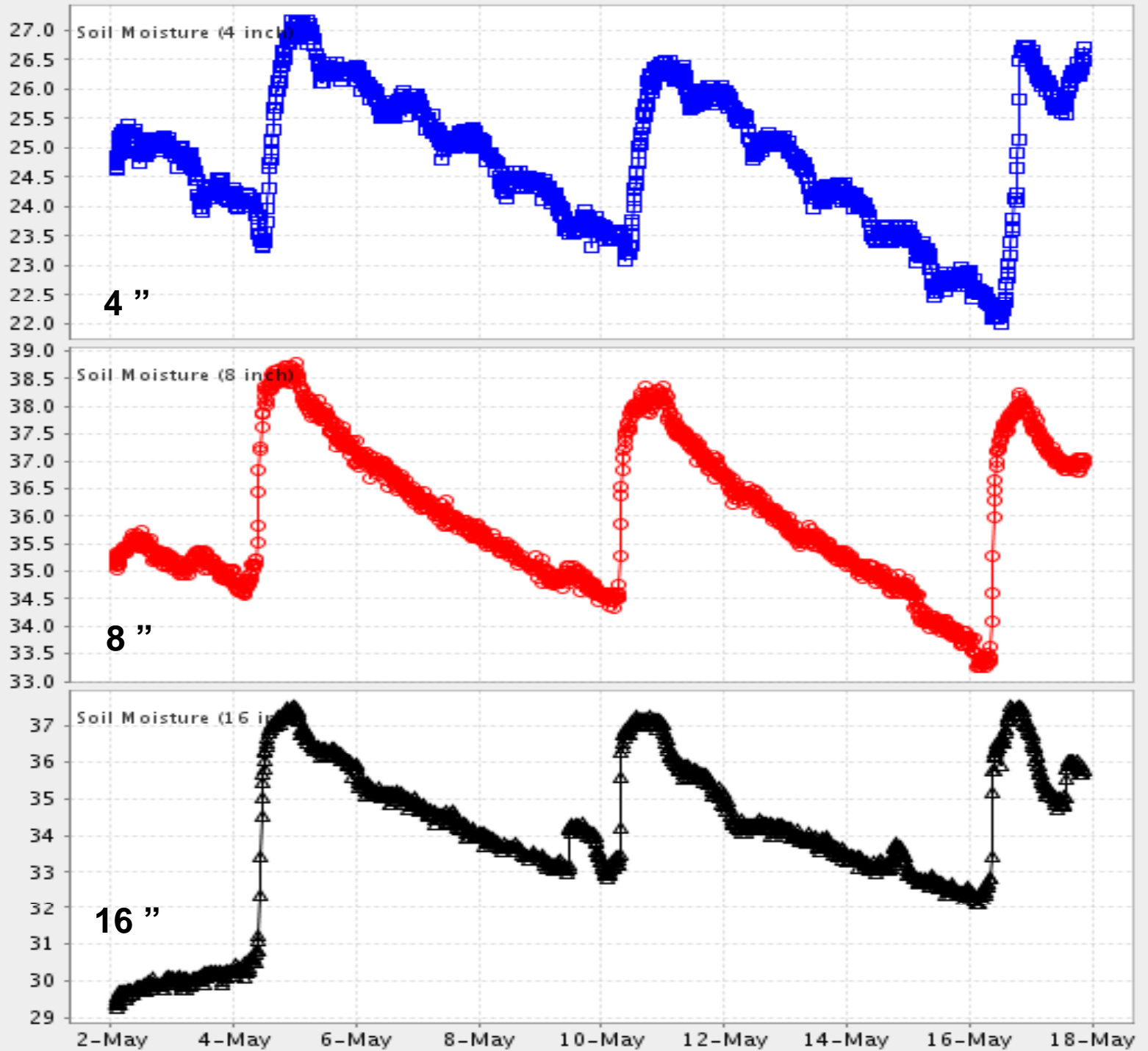
Cabbage and Celery:

Herbicide activation with drip

**Oleg Daugovish, Maren Mochizuki
and Anna Howell; UCCE-Ventura**

Soil moisture: drip - irrigated celery

Recorded by
ClimateMinder
Sensors



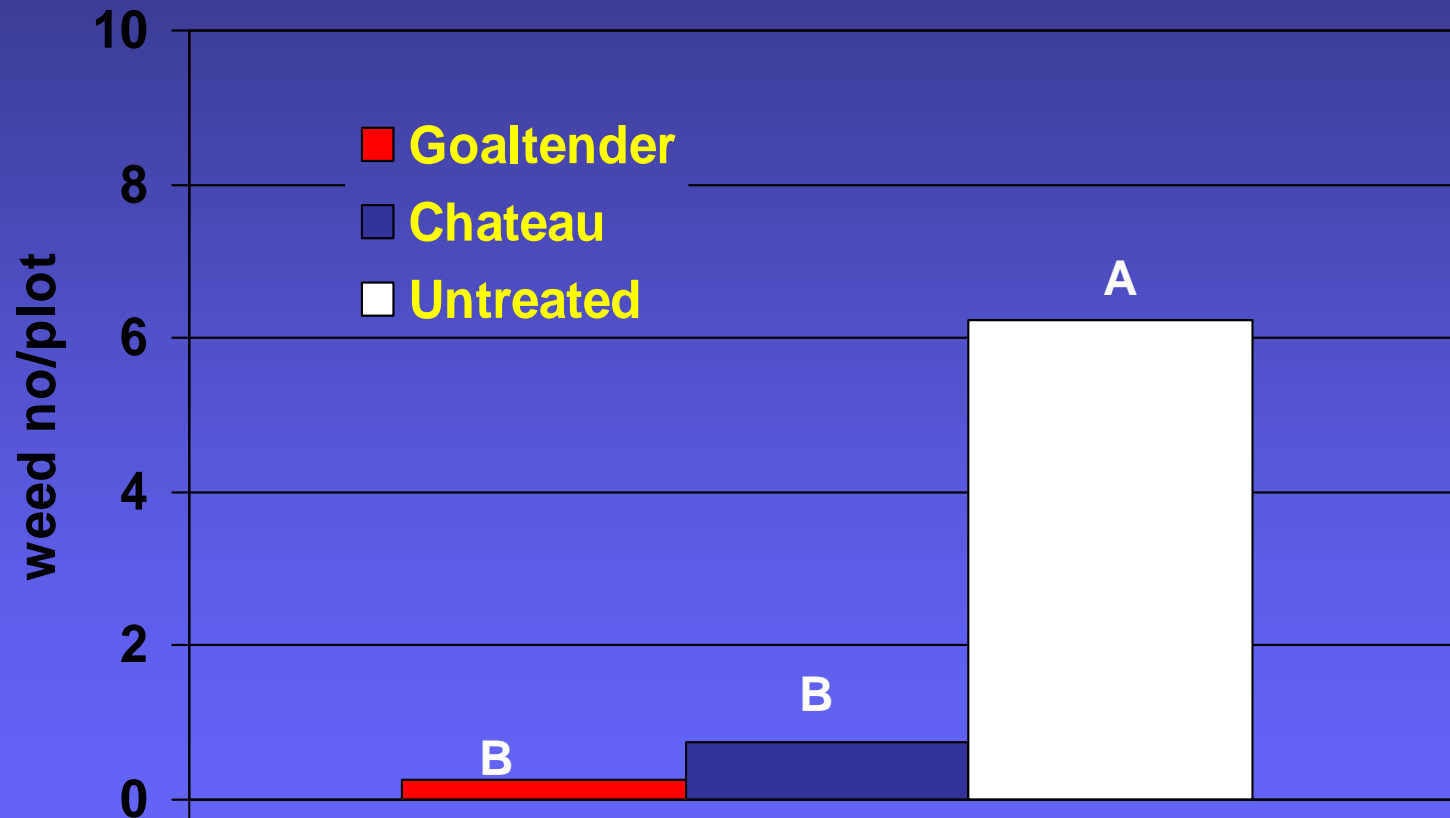
Pre-plant applied herbicides

- Goaltender (oxyfluorfen) 0.25 lb a. i. /acre (1 pint)
- Chateau (flumioxazin) 0.063 lbs a. i. /acre
- (2 oz/acre of product)

- **Application:** Sprayed 1 day before planting to beds.

- **Irrigation:** single drip line for 2 crop rows

Weeds in cabbage, Jan 12



Weeds: sowthistle, mallow, goosefoot

**Injury to cabbage:
0 (none) to 10 (dead)**

Untreated = Chateau = Goaltender

<1

**Number of marketable heads:
Similar in all treatments**

Celery:

- Goaltender (oxyfluorfen) 0.25 lb a. i. /acre
- Chateau (flumioxazin) 0.063 lbs a. i. /acre
- **Spray Application 1 day before planting :**
 - to pre-irrigated beds
 - to dry beds
- **Irrigation:** single drip line for 2 crop rows

Pre-irrigated beds before drip installation and planting



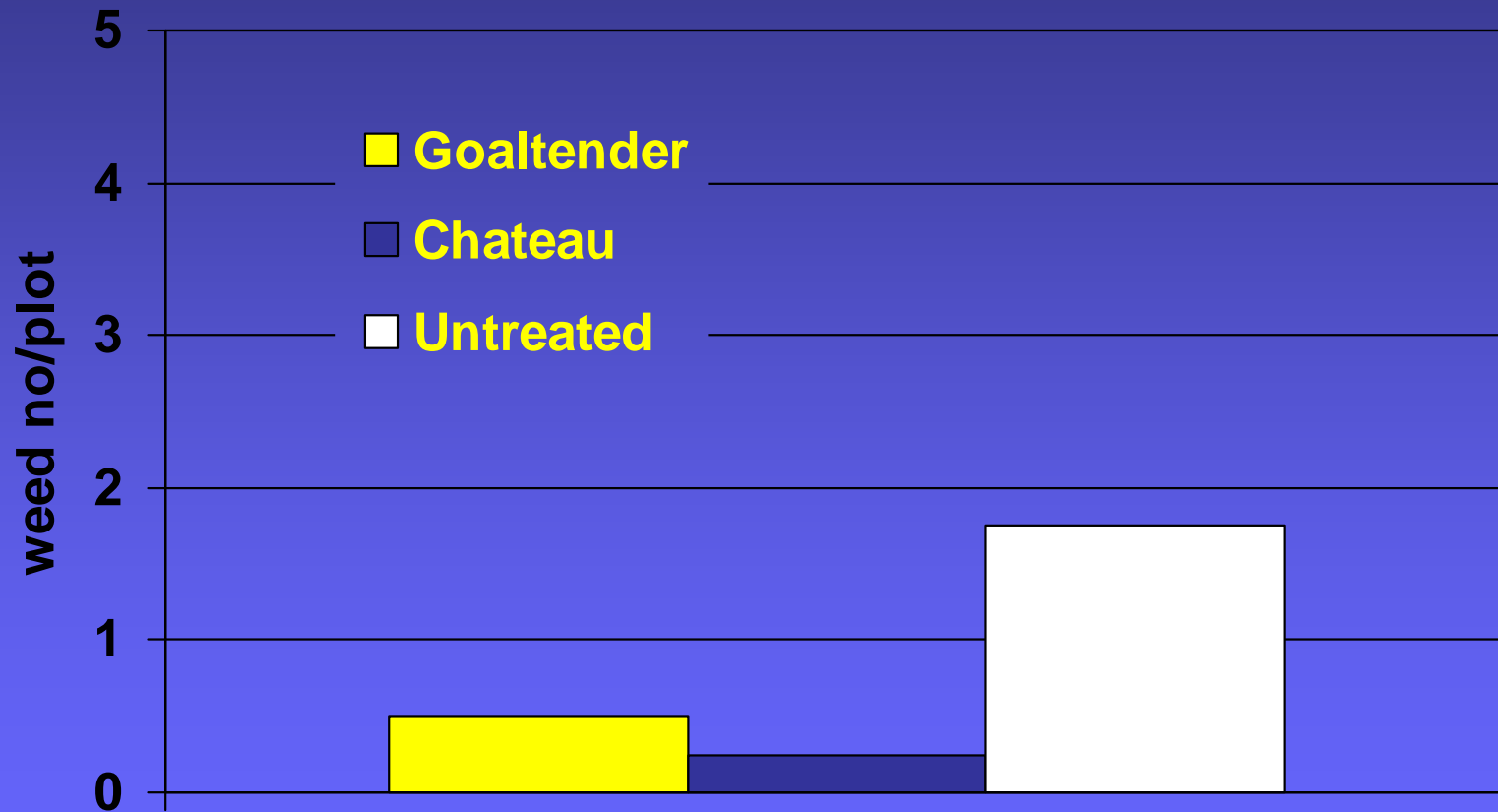
Dry beds before drip installation and planting





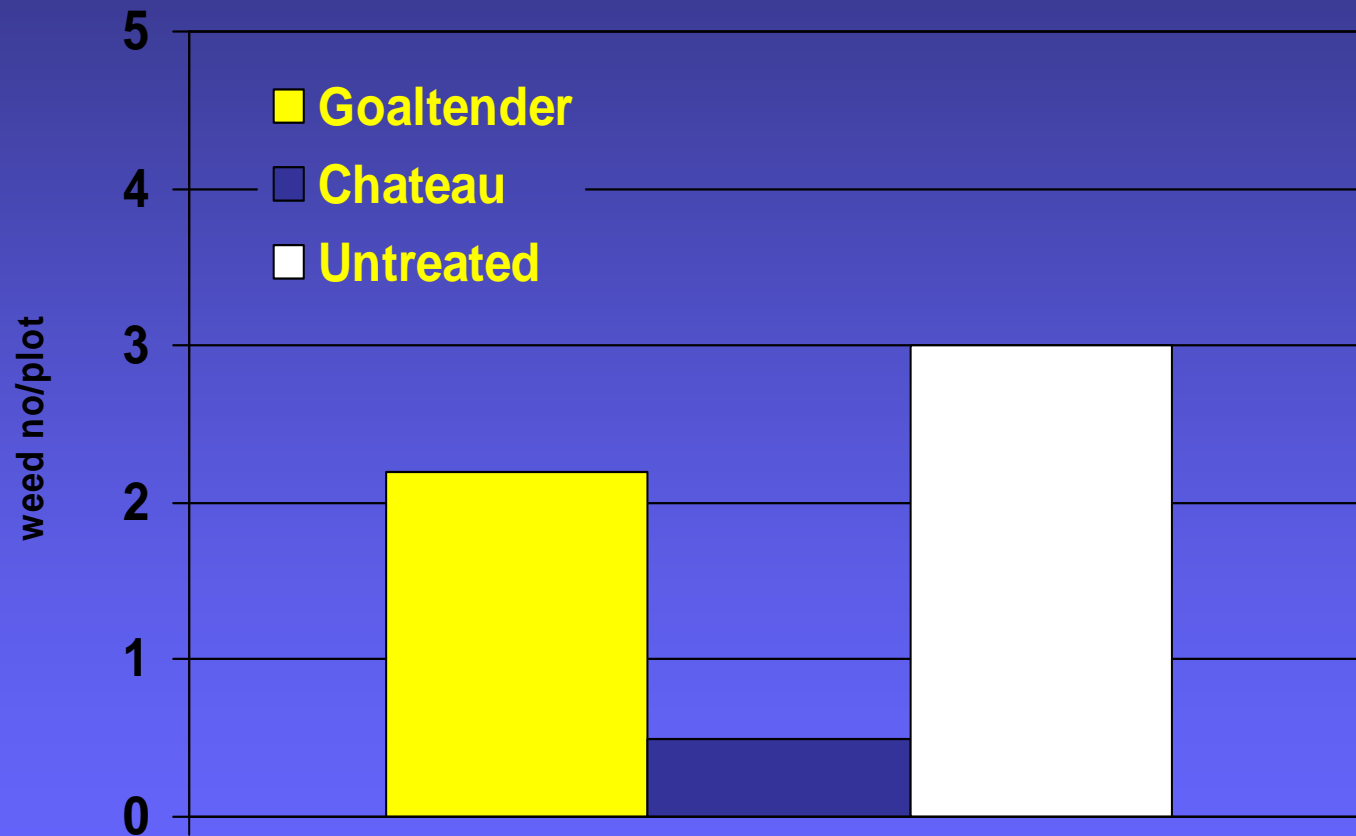
Results: Oxnard

Weeds in celery: pre-irrigated beds, 2 weeks after planting



Weeds: nettle, groundsel

Weeds in celery: dry beds, 2 wks after planting



Weeds: nettle, groundsel

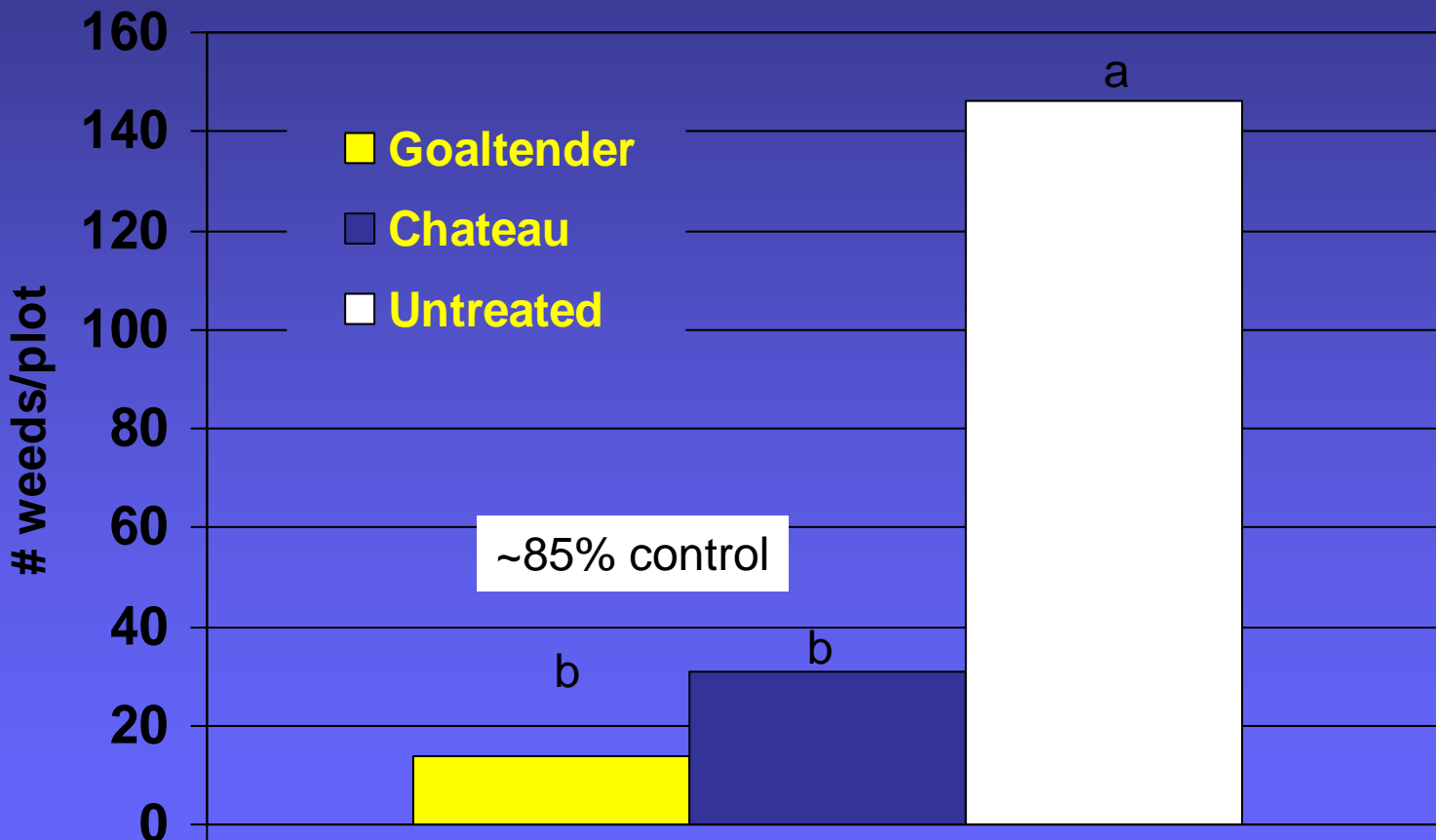
**Injury to celery:
0 (none) to 10 (dead)**

Untreated = Chateau = Goaltender

<1

Results: Santa Paula

Weeds in celery: pre-irrigated beds, 2 weeks after planting



Weeds: goosefoot, mustards, nettle

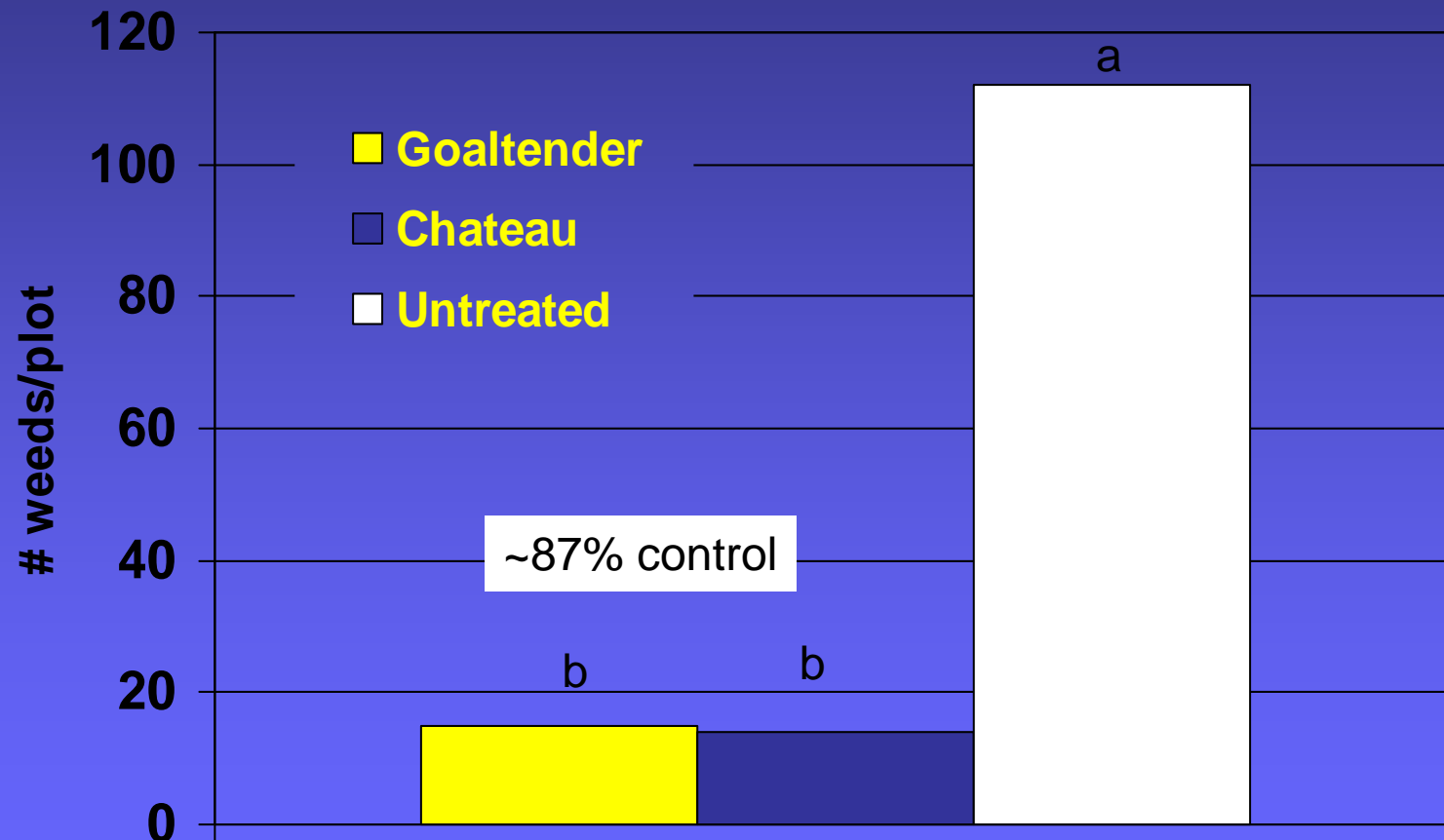
Pre-irrigated beds: Chateau vs Untreated



Pre-irrigated beds: GoalTender vs Untreated



Weeds in celery: dry beds, 2 weeks after planting



Weeds: goosefoot, mustards, nettle

Dry beds: Chateau vs Untreated



Dry beds: GoalTender vs Untreated



Injury to celery: 0 (none) to 10 (dead)

Untreated = Chateau = Goaltender

Pre-irrigated	1.5	1.7	1.6
Dry	2.4	2.5	2.1

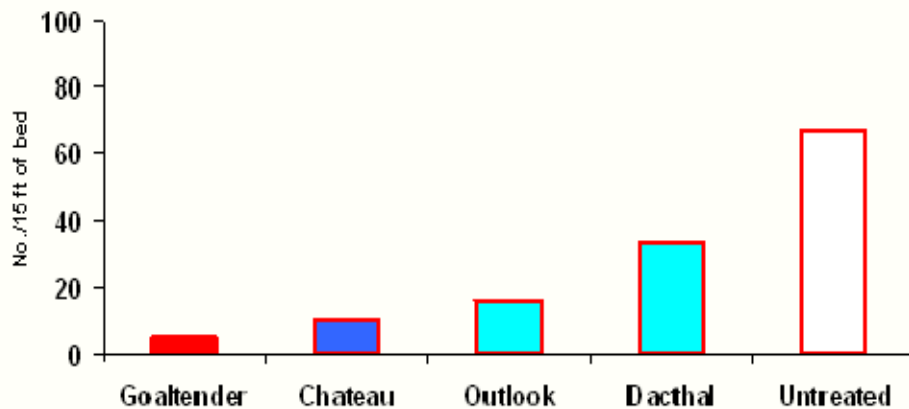
NO SIGNIFICANT INJURY



**NO SIGNIFICANT
Yield /head weight differences**

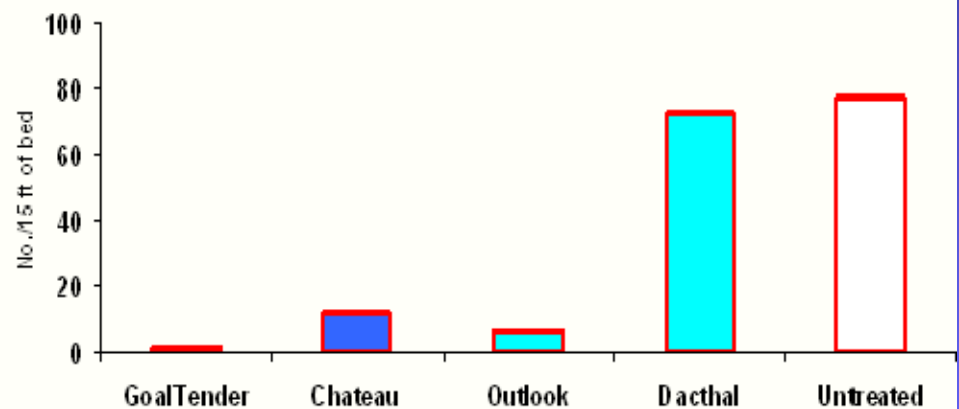
How does this compare to sprinkler activation?

BROCCOLI: Total weed number



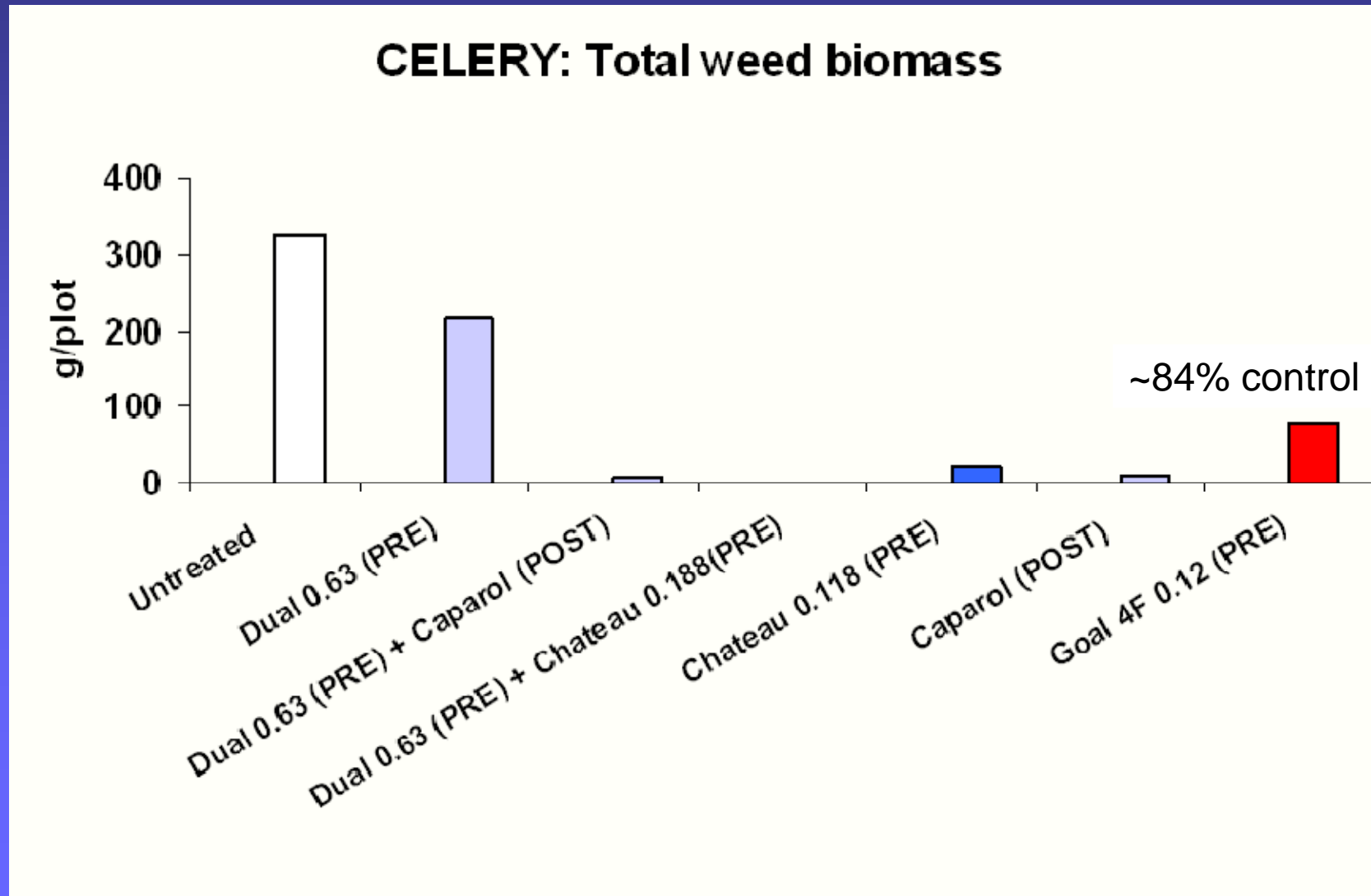
~88% control

CABBAGE: Total weed number



~92% control

How does this compare to sprinkler activation?



Goatender application



- Effective in strawberry: - applied to bare beds before mulching
- Drip irrigation+fumigation activates the herbicide (sprinkler not necessary)
- **UC-IPM Guidelines: After application at least 0.25 inch rainfall or irrigation is needed to activate the herbicide**
- Does not photo-degrade, absorbed to soil
- Protox inhibitor: lipid peroxydation = leaky cell membranes = drying tissue

Chateau application



- Effective in strawberry: - applied to bare beds before mulching
- Drip irrigation+fumigation activates the herbicide (sprinkler not necessary)
- Does degrade 3-8 days, primarily via hydrolysis

Summary: drip activation

- Pre-wetted and dry beds :
effective and non-injurious
- Goaltender – available, Chateau – IR4

Does plastic mulch improve herbicide efficacy?

- Oxyfluorfen (Goaltender, Goal XL): prevents co-distillation
- S-metolachlor (Dual Magnum) ?

Purple nutsedge

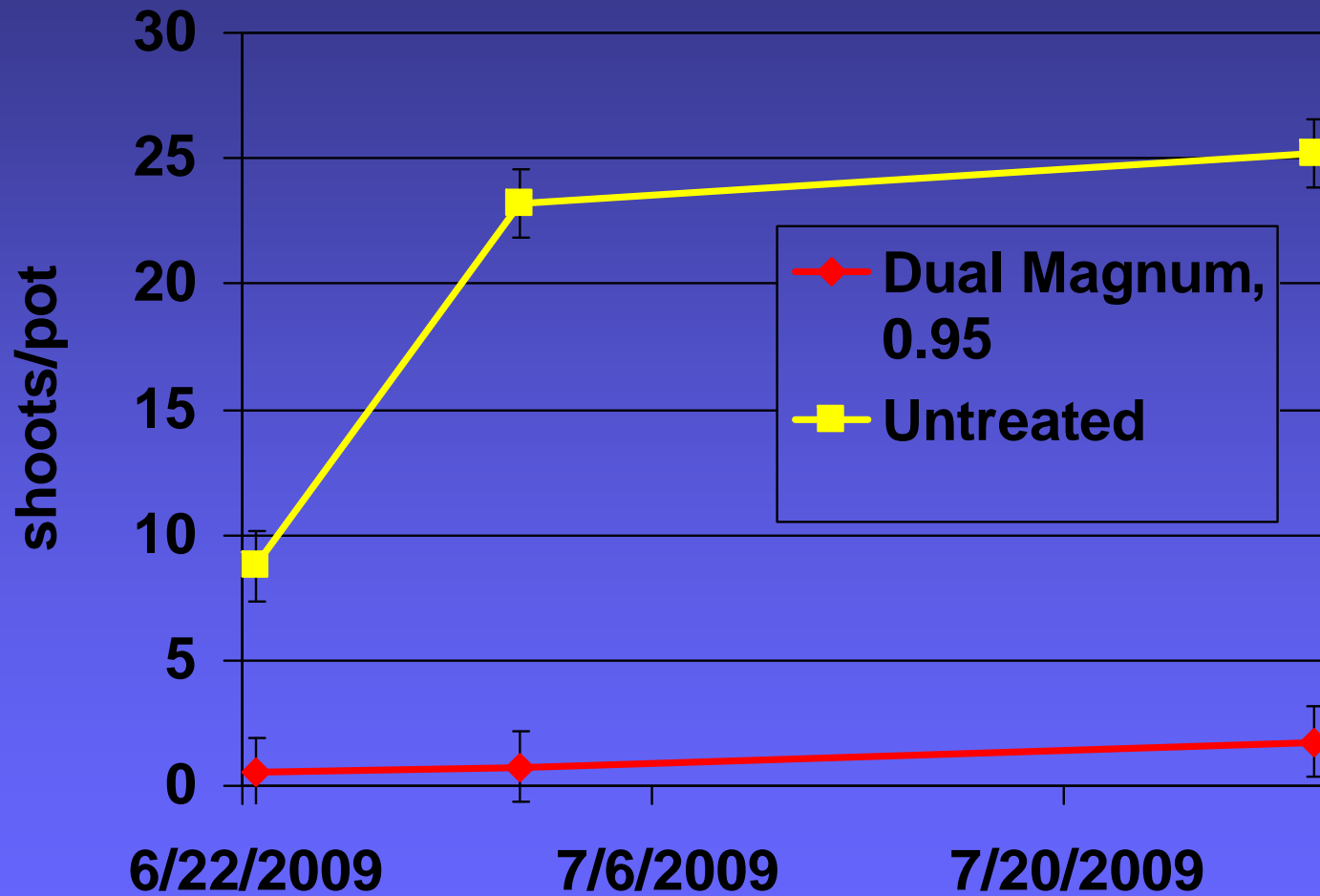
Untreated control



DM 0.95lb a. i./acre



Purple nutsedge counts



Yellow nutsedge counts

