

B5. Alternative weed control methods and bioherbicides in turf and nursery production

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Background

- Cosmetic Pesticide Ban implemented in April 2009
- Need to find alternatives to conventional herbicides
 - Cultural methods
 - "Low risk" products

Objectives

- Best overseeding practices
 - Species, timing
- Evaluate alternative products
 - Low risks, biologicals
- Alternative grass species

1. Overseeding

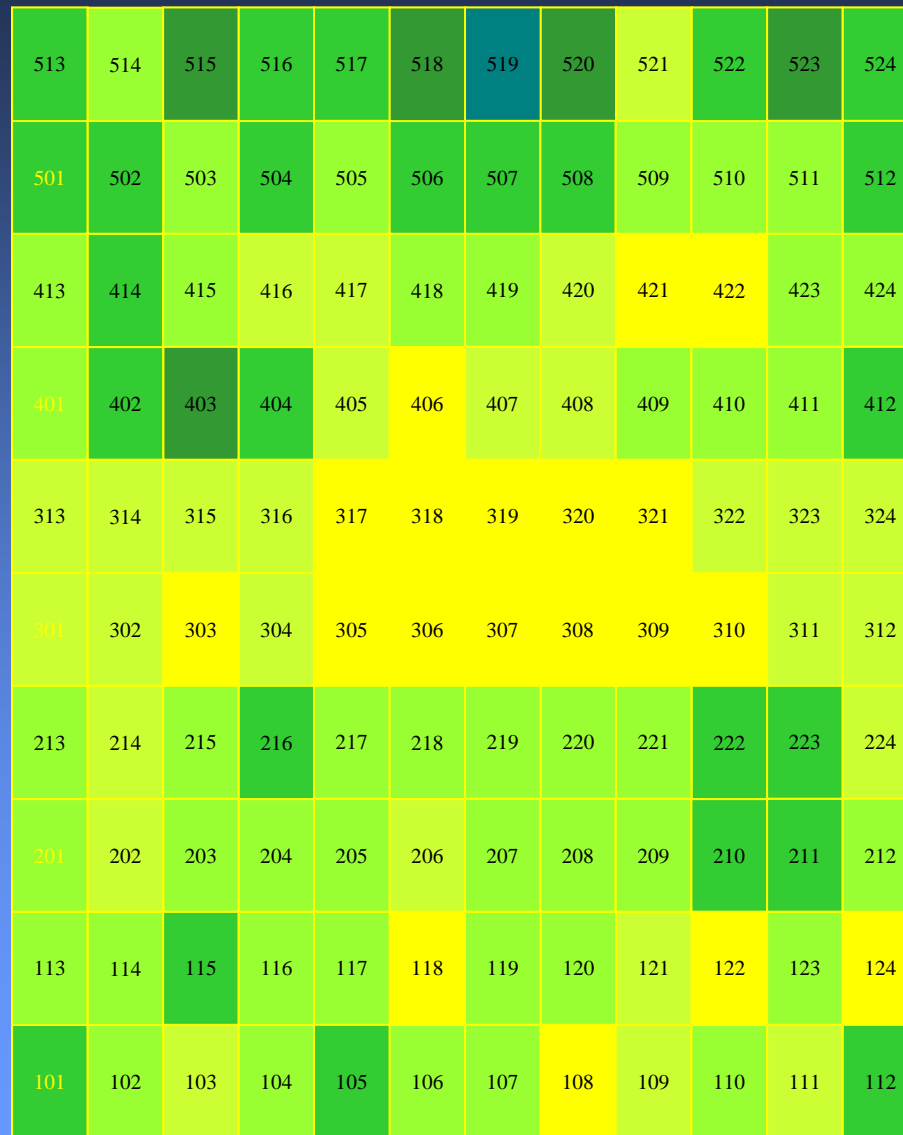
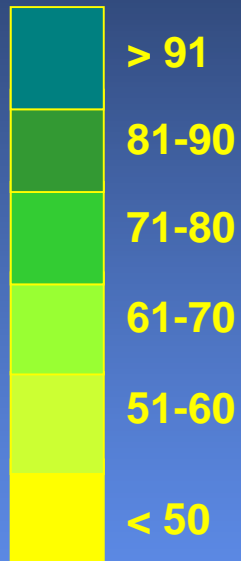
- Established turf site
- Adding Kentucky bluegrass to perennial ryegrass
- Treatments
 - Seeding in May-July- Sept vs M-J-J-A-S
 - 5 ratios of PRG to KBG
 - Control plots with no treatments

Seeding ratios

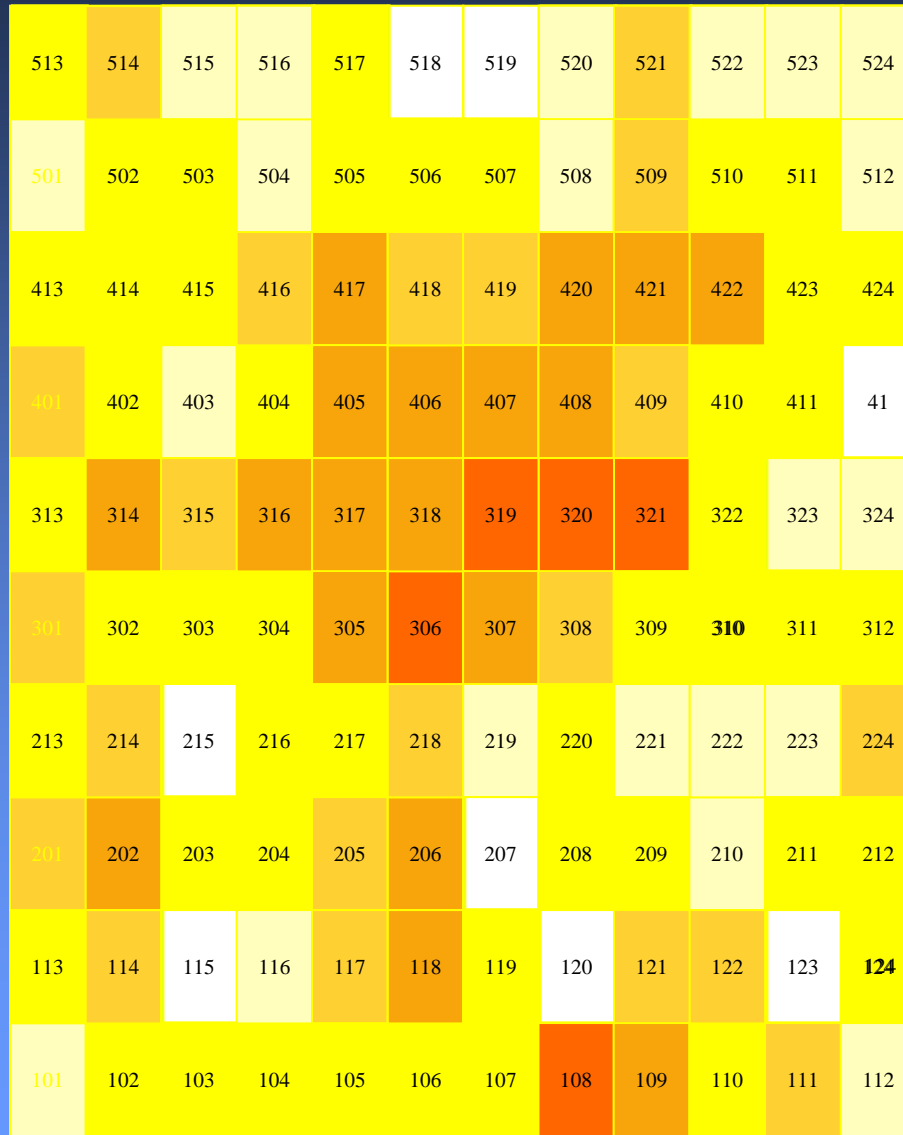
- **100 % PRG = 4 kg/100 m²**
- 75% PRG : 25% KBG
- 50% PRG : 50% KBG
- 25% PRG : 75% KBG
- **100 % KBG = 2 kg/100 m²**

KBG density varied on the site...

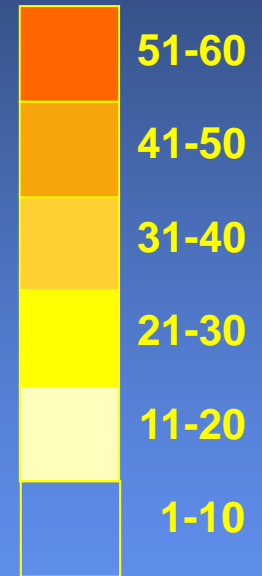
KBG coverage



... and so did dandelion

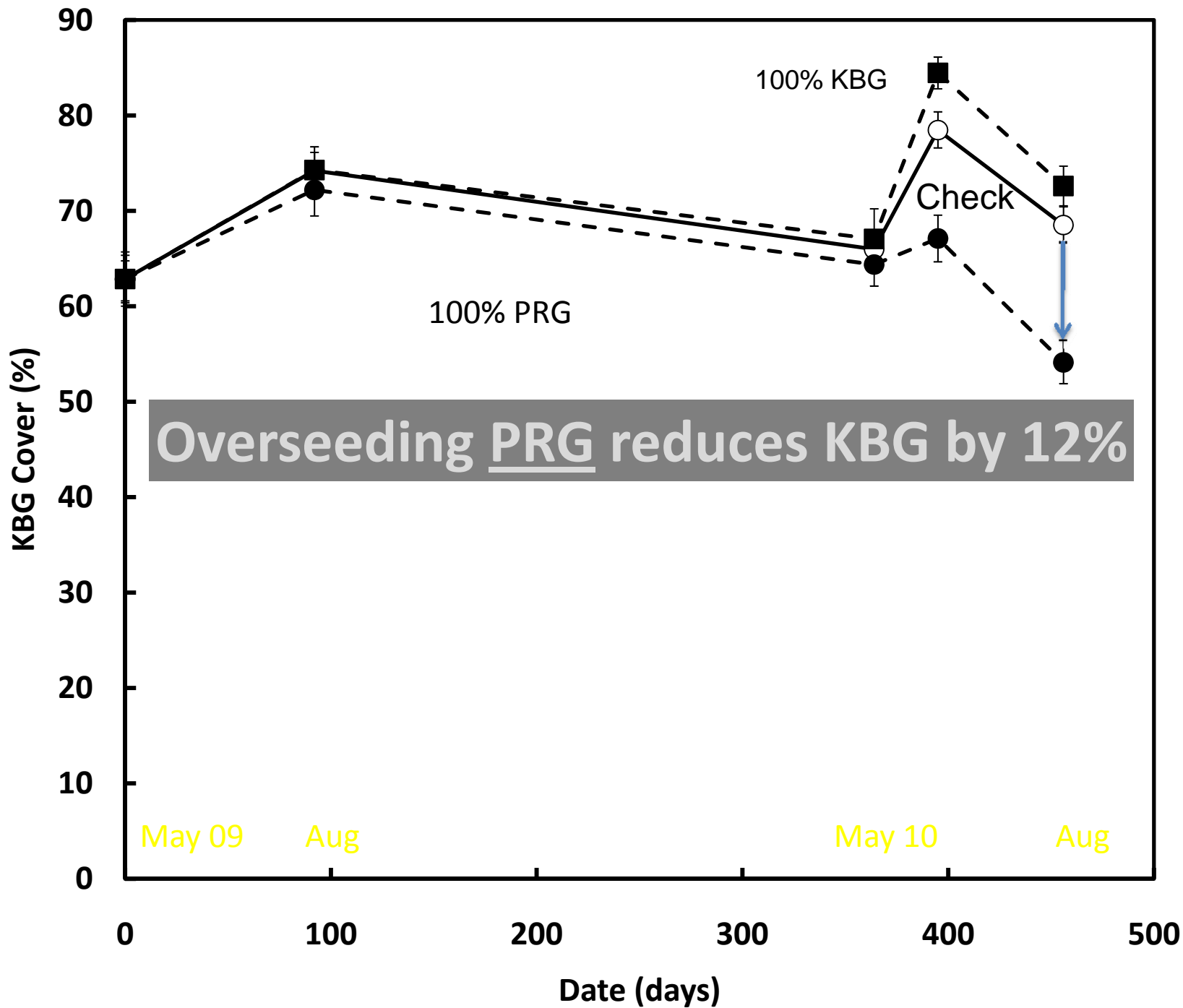


Dandelion coverage

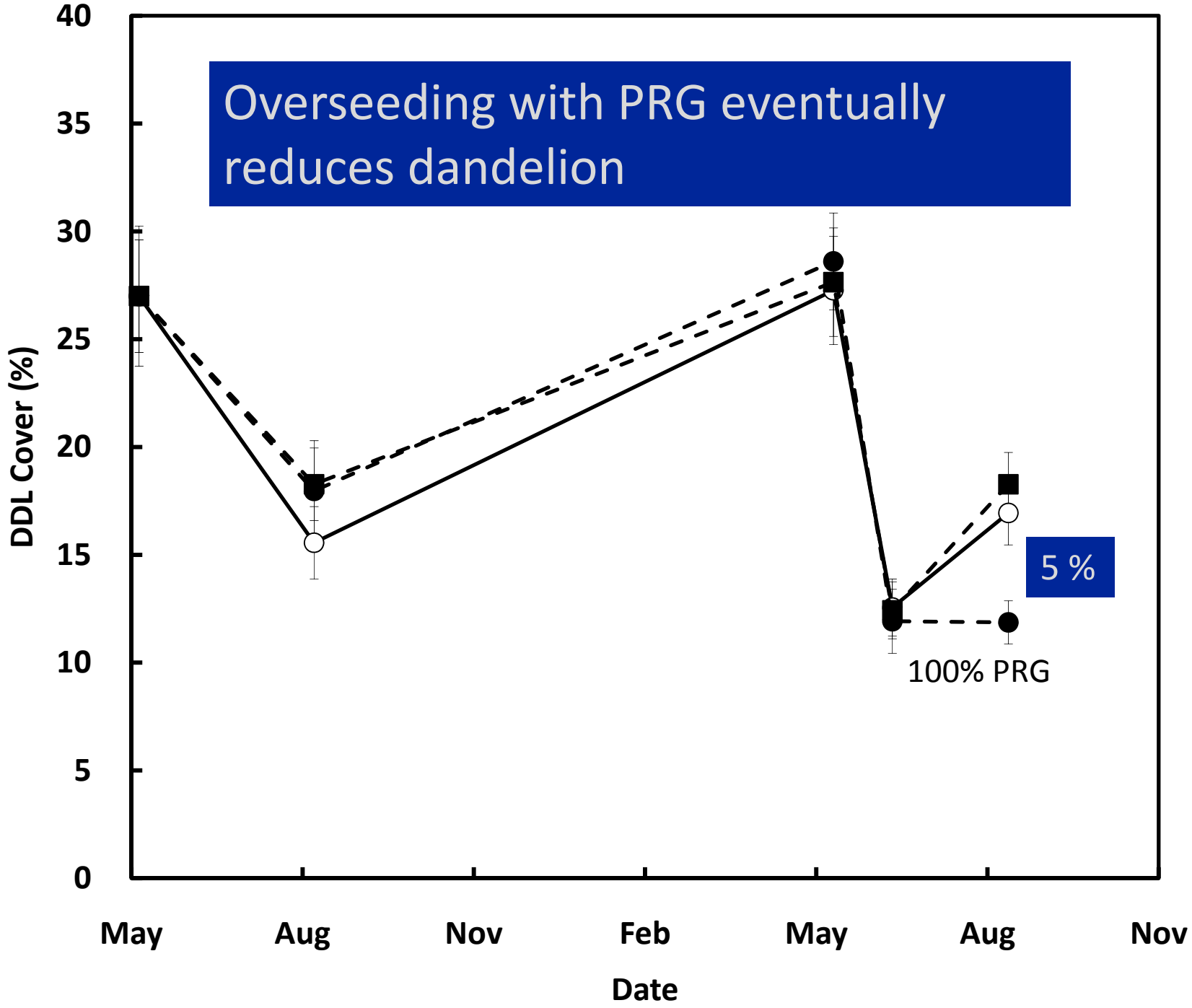


Results

- Turf and weed populations are not static
- Impact of overseeding takes time



Overseeding with PRG eventually reduces dandelion



5 %

100% PRG

2. Alternative products

- Compare new alternatives to post emergence turf herbicides
 - Fiesta
 - Organosol
 - Corn gluten meal
 - Sarritor

Corn gluten meal

- By-product corn milling
- 10-0-0 fertilizer
- Needs 2 applic.



http://farm3.static.flickr.com/2362/2420472742_8e7e98f15f.jpg

Broadcasting CGM over turf

Fiesta

- Chelated iron (Fe-HEDTA)
- 2 applications within 1 month
- Grass may turn yellow



Organo-Sol

- Dairy by-product
- Lactic and citric acid
- 5 applications, high rate

Organo-Sol



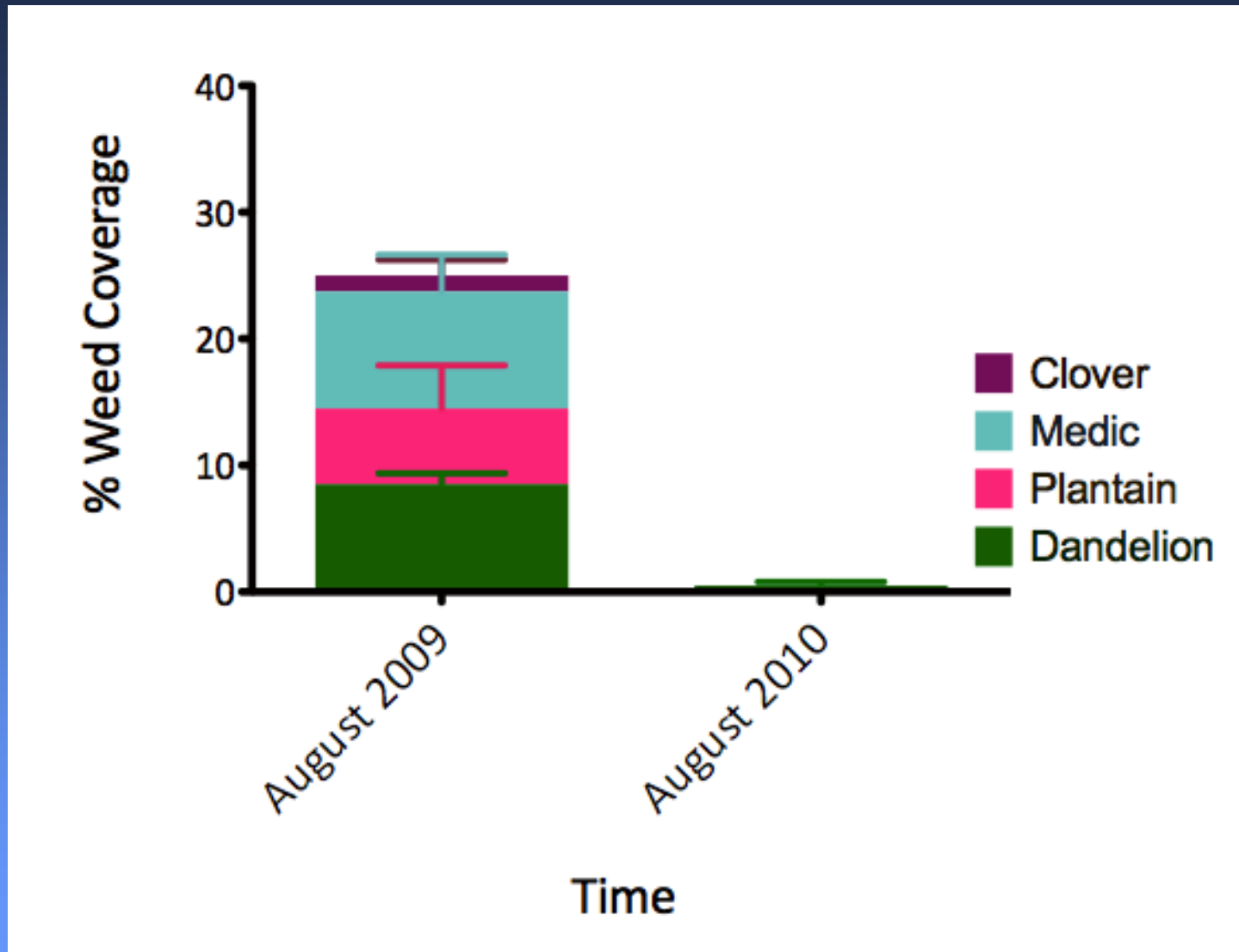
Sarritor

- *Sclerotinia minor*
- Pellets contain sclerotia
- Needs targeted application

Sarritor flick stick for spot application.

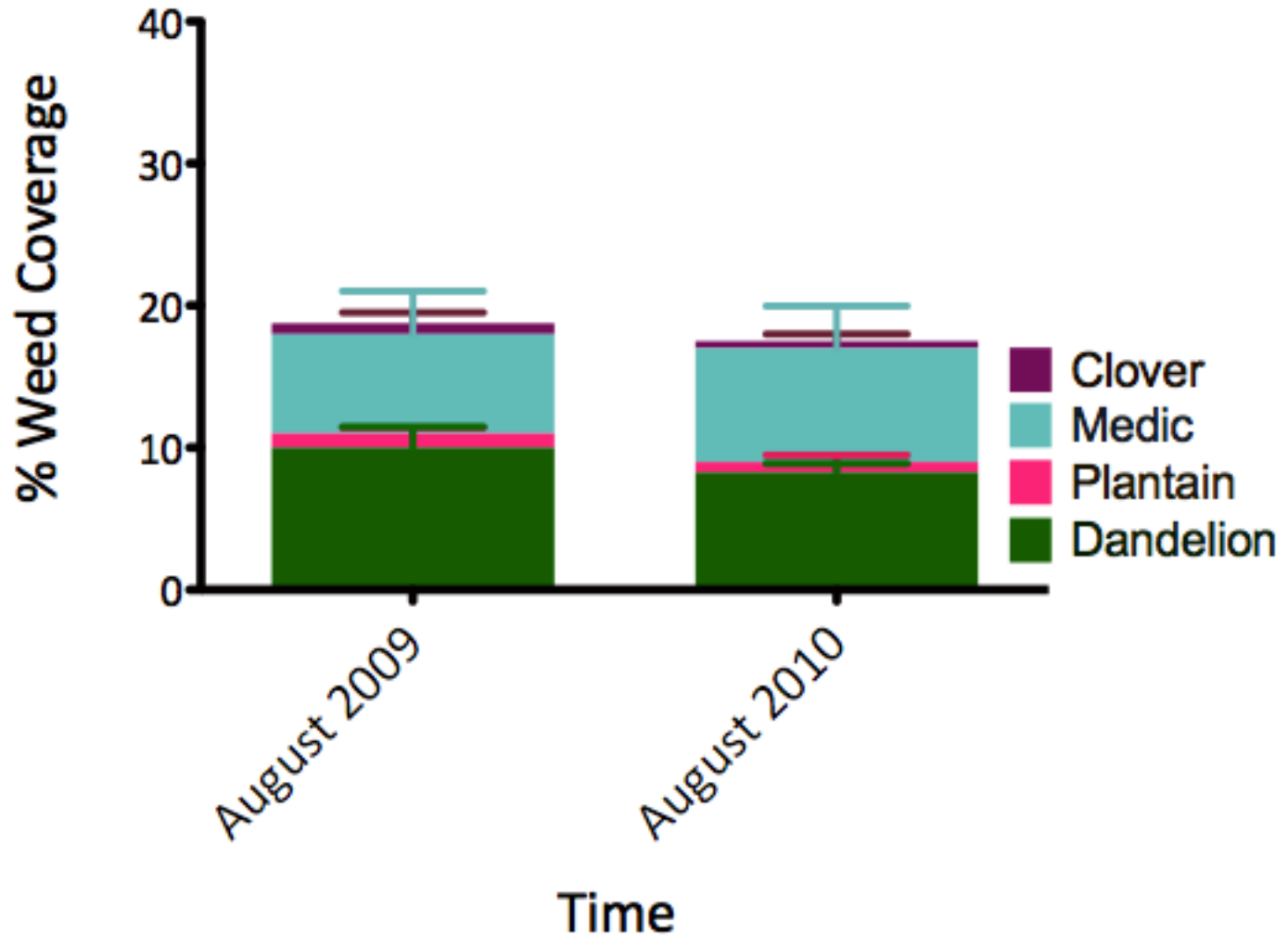


Fiesta



- Significant reduction of broadleaf weeds in one season

Organo-Sol



- No difference in broadleaf weed population

How the products rank:

- Fiesta = PAR III > CGM > Sarritor > Organo-sol = untreated

3. Alternative grass species

- Supina Bluegrass (*Poa supina*)
- Used in Germany
- Highly traffic tolerant
- Lime green colour
- Expensive seed



Summary of Rates and Timings

- Seeding Rate:

Seeding Rate:	Perennial ryegrass	Supina bluegrass
1	6 kg/100m ²	0 kg/100m ²
2	6 kg/100m ²	0.5 kg/100m ²
3	6 kg/100m ²	1 kg/100m ²
4	6 kg/100m ²	2 kg/100m ²
5	6 kg/100m ²	4 kg/100m ²

Summary of Rates and Timings

- Seeding Frequency:
 - Once
 - Three times per season
- Control: no overseeding



Results year 1

- Check plots have 6% weeds,
- overseeding Supina with PRG once reduces weeds by 2 %
- Supina three times results in complete weed suppression

Thank You

