



Chickweed herbicide resistance in small grain forages and alfalfa

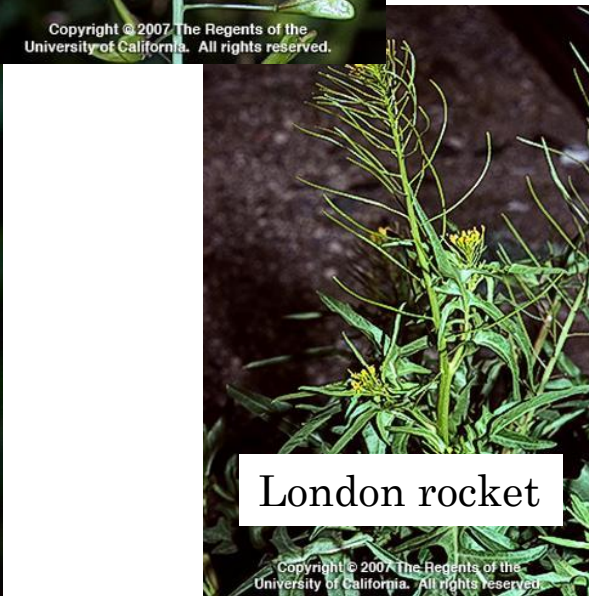
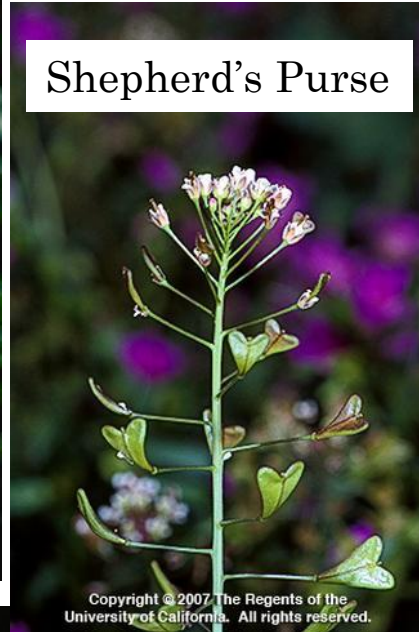
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November 18, 2024, for UC Golden State Dairy Management Conference in Modesto, CA

Weeds commonly found in SJV small grains – informal interviews





What PCAs reported

- Chickweed escapes using:
 - Pyroxsulam
 - Tribenuron



What UC and CSU checked

- Environmental conditions
- Other weeds present
- Unsprayed areas in field
- Application records
- Modified efficacy test, 2021
- Controlled environment bioassays, 2022-23







Greenhouse evaluations, two repetitions

- Planted fall and spring 2022-23
- Sprayed at 2 true leaves, < 3” tall
- Evaluated weekly for four weeks
- 5 reps



Pyroxsulam – UTC

PCA identified field 2
(suspected resistant)

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PCA identified field 1
(suspected resistant)

Organic control
(ALS susceptible)



Pyroxsulam – 0.5 X

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Pyroxsulam – 2X

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Pyroxsulam – 4X

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Pyroxsulam – 8X

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Tribenuron – UTC

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Mesosulfuron – UTC

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Imazethapyr – UTC

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Imazethapyr – 0.5X

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Imazamox – UTC

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Imazamox – 0.5X

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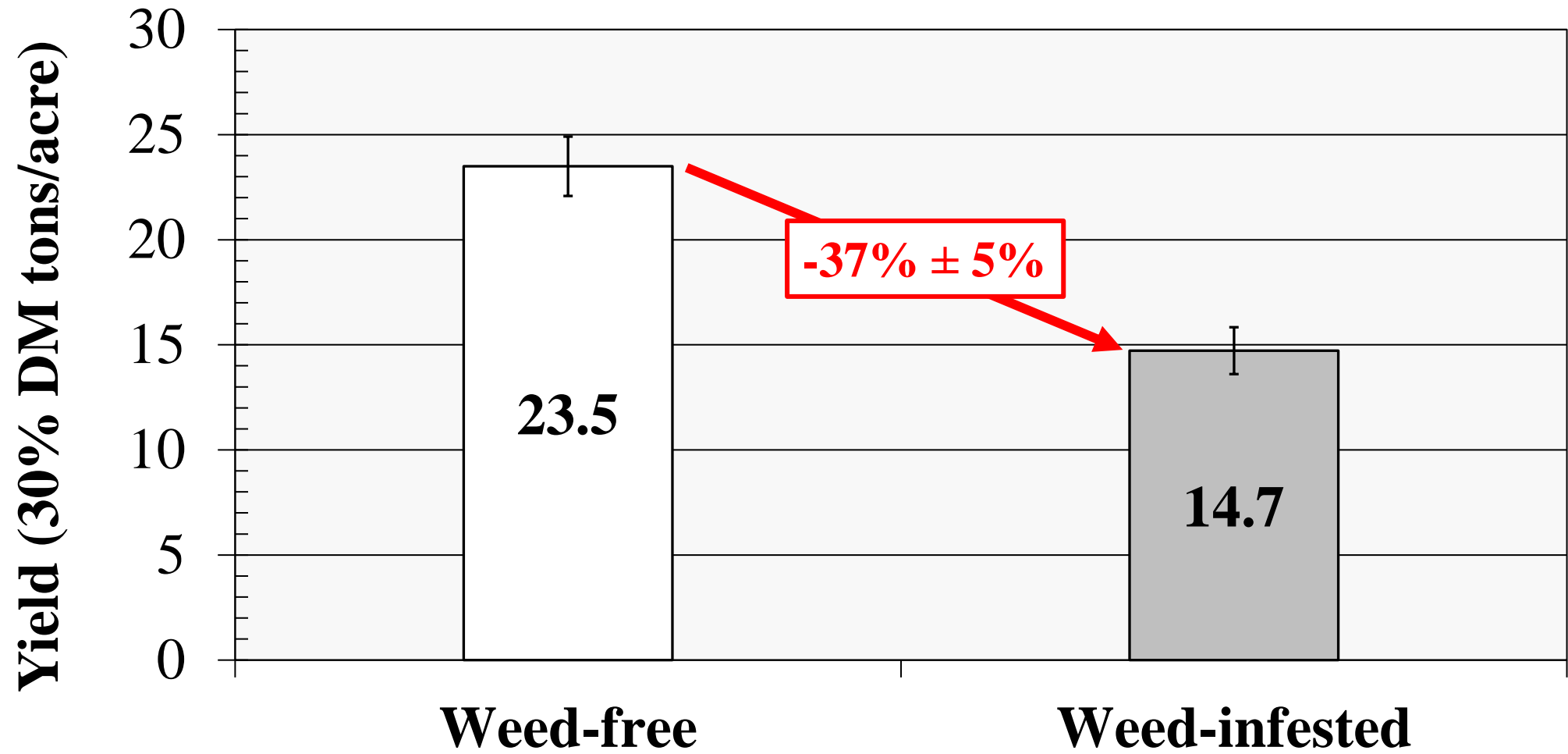


Is Yield Affected?

Preliminary results



SVJ Triticale Yield from 1 Field, Replicated



Some solutions

Existing tools



University of California
Agriculture and Natural Resources

REMINDER: IPM best management practices for weed control

- Application timing for conditions
- Correct weed and crop stage
- Coverage
- Tank mix partners for broad spectrum of weeds & improving efficacy of tough weeds
- Top allowable label rates to zap tough weeds
- Rotate chemistry

AI's (WSSA/HRAC code) still CA registered for wheat with noted activity on chickweed – **Check the label**

| Over the top post-emergence | Pre-crop or –weed emergence |
|-----------------------------|-----------------------------|
| 2,4-D (4) | Trifluralin (3) |
| Dicamba (4) | Pendimethalin (3) |
| MCPA (4) | Glyphosate (9) |
| Diuron (5) | Flumioxazin (14) |
| Bromoxynil (6) | Saflufenacil (14) |
| Pyraflufen-ethyl (14) | |

AI's (WSSA/HRAC code) registered in CA for alfalfa with noted activity on chickweed – **Check the label**

Active Ingredients ordered by WSSA/HRAC code. Ten unique modes of action registered in alfalfa.

| | |
|-------------------|-------------------------------|
| Halosulfuron (2) | Diuron (7) |
| Imazamox (2) | EPTC (8) |
| Imazethapyr (2) | K N-methyldithiocarbamate (8) |
| Benfluralin (3) | Glyphosate (9) |
| Pronamide (3) | Norflurazon (12) |
| Trifluralin (3) | Flumioxazin (14) |
| Pendimethalin (3) | Carfentrazone (14) |
| MCPA (4) | Saflufenacil (14) |
| Hexazinone (5) | Paraquat (22) |
| Metribuzin (5) | |



THANK YOU

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