

Weed Workgroup Meeting

Davis, California
November 16-17, 2004

Agenda

Tuesday, November 16, 2004
Memorial Union II, UC Davis

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| 9:00 AM | Coffee and rolls |
| 9:15-9:20 | Welcome, Theme: 'Genetics and chemistry in weed management: herbicide-tolerant crops, resistance, and environmental issues' |
| 9:20-9:40 | Introductions of new personnel
Kerri Steenworth, USDA; Brenda Grewell, USDA; personnel from Marie Jasieniuk's lab; personnel from Joe DiTomaso's lab. |
| 9:40-10:00 | Research in weed genetics
Marie Jasieniuk, UC Davis |
| 10:00-10:15 | ACCase resistance in <i>Phalaris minor</i> in the Imperial Valley
Joe DiTomaso, UC Davis |
| 10:15-10:30 | An update on Liberty Link cotton
Ron Vargas, UCCE, Madera/Merced |
| 10:30-10:50 | An update on Roundup Ready alfalfa
Mick Canevari, Ron Vargas, Steve Orloff, and Kurt Hembree, UCCE. |
| 10:50-11:00 | Break |
| 11:00-11:30 | Environmental influences to alfalfa herbicides
Mick Canevari, UCCE, San Joaquin County |
| 11:30-11:50 | An update on Cal/OSHA regulation restricting hand weeding
Howard Rosenberg, UC Berkeley and John Miles UC Davis |
| 11:50-12:00 | Open discussion on hand weeding and other environmental regulations |
| 12:00-1:00 | Lunch – box lunches |
| 1:00-1:15 | Hyperspectral imaging for weed detection
Dave Slaughter, UC Davis |
| 1:15-1:25 | An update on IR-4 projects
Steve Fennimore, UC Davis, Salinas |
| 1:25-1:45 | Chemigation with Kerb
Steve Fennimore, UC Davis, Salinas and Kurt Hembree, UCCE, Fresno |
| 1:45-2:00 | Weed survival as a function of time and temperature |

- Oleg Daugovich, UCCE, Ventura
- 2:00-2:15 Vineyard Floor Management
Richard Smith, UCCE, Monterey/San Benito.
- 2:15-2:30 A Computer-Based Identification Program for Weedy Grasses and Grass-like Plants in California
Joe Ditomaso, UC Davis
- 2:30-3:30 Breakout sections: Vegetable crops or Non-crop areas
- 3:30-3:45 Break
- 3:45-5:00 Breakout sections: Trees & vines, or Agronomic crops or Turf and ornamentals
- 6:30 Dinner at Dr. Clyde Elmore's place.

Wednesday, November 17, 2004

Memorial Union II, & Memorial Union Smith Room, UC Davis

- 7:45 a.m. Coffee and rolls
- 8:00-8:30 Issues on research agreements- Alan Bennett, OTT, Davis
- 8:30-9:30 Breakout sections: Agronomic or Aquatic
- 9:30-9:45 Break
- 9:45-11:15 Section reports, future agenda and priorities
- 11:15-12:00 Election of new committee members
Discussion of new positions
Department update – UCD, UCR
Participation in the ANR Pest Management Conference and other issues
- 12:00-1:00 Lunch
- 1:15-3:15 Review weed susceptibility chart
- 3:15 Adjourn
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Budget

Joe DiTomaso provided an update on the Weed Workgroup budget.

New Positions

Joe DiTomaso and Jodie Holt provided departmental updates on new positions at UC Davis and UC, Riverside, respectively.

CWSS Newsletter

Carl Bell announced the new newsletter of the California Weed Science Society.

Commodity Reports

Non-crops section submitted by Joe DiTomaso

Scott Oneto- Scott (Joe DiTomaso's graduate student) discussed his control efforts on tree tobacco (*Nicotiana glauca*), hedgeparsely (*Torilis arvensis*) and Scotch broom (*Cytisus scoparius*). He showed that mechanical control is not effective on tree tobacco, but glyphosate, triclopyr and imazapyr all appear to work well as foliar treatments. He also used a drizzle tip treatment and these compounds worked well on that as well. Basal bark with triclopyr was also effective. Imazapic, imazapyr, glyphosate and triclopyr applied foliarly to hedgeparsely in spring were all very effective. Clopyralid was not nearly as good as the other compounds. Imazapic was the safest on the native *Madia* species and still gave good control of hedgeparsely. Glyphosate and imazapyr applied to the foliage of Scotch broom in the fall were very good and triclopyr was not as good. Scott is also testing several options for the control of periwinkle (*Vince major*) and houndstoungue (*Cynoglossum officinale*).

Rob Wilson- Rob has been working with perennial pepperweed control and has published a nice research report for Lassen County. Contact him for copies. He has been working with Debra Boelk (Joe DiTomaso's student) on a project looking at combining a pretreatment of either grazing, mowing, burning, 2,4-D, or disking followed by an herbicide and then revegetation with what we hope are competitive perennial grasses. This study is underway and should be completed by next year.

Jodie Holt- Jodie is continuing to work with the biology, ecology and management of artichoke thistle (*Cynara cardunculus*). She has shown good control with clopyralid and glyphosate. Plants treated when they are too large die back after a glyphosate treatment but recover. Most of the spread of the plant is by seeds. She has developed a degree day model that can predict the emergence of the seedlings within a day or two. Germination also appears to be tied closely to rainfall. Jodie has also been studying the biology and control of *Arundo donax*, as well as restoration of infested sites.

Carl Bell- Carl has worked with fennel (*Foeniculum vulgare*) control at Camp Pendleton north of San Diego. He has shown good control with glyphosate and triclopyr. He was able to use glyphosate in February and did not injure purple needlegrass plants. He has also studied goat grazing for the control of perennial pepperweed and has looked at grazing once or twice with and without chlorsulfuron.

Joe DiTomaso- Joe and Guy Kyser have a large collaborative project with Steve Orloff, Neil McDougald, Ron Vargas, Mike Connor, Glenn Nader, Morgan Doran and Rob Wilson on the control of medusahead in grasslands. They are finding the prescribed burning works very well everywhere but in Lassen County. Imazapic is also very effective as long as the thatch layer is gone or very thin. Imazapic hangs up in thatch and this can compromise the effectiveness of the herbicide. Mechanically removing the thatch, even without a herbicide application, can give between 50% and 80% control of medusahead. Other work by Sara Sweet (Joe's student) has shown that as seeds mature on the plant they become less susceptible to direct flames. This indicates that if burning is used, it should be as early as possible to prevent new seed production. Mona Robison, who is completing her PhD under Joe, has shown that Cape ivy (*Delairea odorata*) does not survive well when growing under full sunlight. This probably accounts, in part, for its distribution along the coast or in shaded riparian areas slightly inland. She also showed that viable seed production can be as high as 20% in sites where the two distinct biotypes (stipular and non-stipular) populations co-exist, but in most locations there is little or no viable seed produced where only one biotype is present.

Vegetable Section Notes - submitted by Milt McGiffen

Anil Shrestha:

- 1) Tomato-nutsedge competition under different levels of ozone. Tomato is relatively tolerant to ozone, is more competitive with nutsedge under high ozone because nutsedge allocates more carbon to tubers when ozone is high. Study was conducted in pots, which may have affected results

- 2) Subsurface drip and conservation tillage in tomatoes. Year 1, Davis. Year 2, additional site added at WSFS. Weed emergence and biomass is 90% lower in subsurface drip. Tillage effect on weeds was not significant.

Steve Fennimore:

Weed management in lettuce:

- 1) Sulfonylurea tolerant lettuce that is conventionally bred, so no GMO issues. Very tolerant to Maverick (sulfosulfuron). Not as tolerant to Accent.
- 2) Nutsedge: Shankd in Telone C35, then capped by soil that has Eptam in cap, gave good nutsedge control in the Coachella Valley.
- 3) Lettuce is tolerant of Treflan, but not labeled. But even at low rate tank mixes of Treflan and Kerb, lettuce is still too susceptible to Treflan.
- 4) Strawberries: virtually impermeable film to trap fumigants greatly improves weed control, especially with inline picloram.

Milt McGiffen:

- 1) Lanini and McGiffen have completed one year of studies on fresh tomato and melon herbicides.

TOMATO: conducted at South Coast REC

- 2) Tomato tolerated sulfentrazone, sulfosulfuron, halosulfuron, and rimsulfuron. Slight injury to carfentrazone, but recovered. POST harsher than PRE.
- 3) Sulfentrazone and sulfosulfuron provided broad spectrum weed control for nightshade, bindweed, pigweed, and grasses.
- 4) Halosulfuron: nightshade, bindweed, pigweed, not grasses.
- 5) Rimsulfuron PRE: all the above, except grasses.

Melons – Coachella Valley

- 6) 10 most common melon varieties tolerated Dual well. Slight injury to halosulfuron and clomazone. Moderate injury to Sulfosulfuron and rimsulfuron.
- 7) Weed control: Sulfosulfuron- partial control of nutsedge, lambsquarters, pigweed, no lovegrass control. Rimsulfuron controlled most weeds. PRE Dual: partial nutsedge and pigweed, and lovegrass. Clomazone was ineffective against the weeds present.
- 8) Organic Vegetable Production Workshop, Salinas, January 18. Manual is to be a living document, any more contributions welcomed.

Kurt Hembree:

- 1) Worked with Gowan on Sandea (halosulfuron) plantback. Sprinkle up, then either furrow or sprinkle irrigate during tomatoes. When tomatoes were consistently sprinkled, halosulfuron residue was too low to damage subsequent lettuce or sugar beets. Furrow irrigated tomato soil still damaged the subsequent lettuce and sugar beets.
- 2) Good tolerance of melons to POST dimethenamid. Dimethenamid gives good nutsedge control.
- 3) Broccoli and cauliflower: Goal Tender over the top – good tolerance.
- 4) Tomatoes and sulfosulfuron, 0.3oz – 1 oz per A. Tomatoes are very sensitive at cotyledon stage, tolerant after cotyledon, great dodder control at 2-4 tomato leaf stage. Peppers had moderate injury at those rates.
- 5) Vapam followed by Matrix PRE seems to eliminate handweeding in processing tomatoes.
- 6) Dupont wants to change label to allow 4 oz PRE or POST for tomatoes. Both appear to be safe.
- 7) Garlic: Federal tolerance for Chateau, PRE. 3 or 12 oz rate appear to be equal for weed control.
- 8) Onions: rain made weed control difficult. Goal, Outlook, and Chateau. Good tolerance at 0.125-0.25 for Goal 4F. Much more tolerant than Goal 2XL. Onions tolerated Outlook at 2-4 leaf stage. Dacthal does not work well in December, so need alternatives.

Richard Smith:

- 1) Peppers: Can apply Goal for 30 prior to transplanting peppers, as long as you work the beds. Richard experimented with applying Goal and NOT working the beds, then coming back 30 days

- later with Dual – worked well. Dual Magnum gives great hairy nightshade control and peppers are very tolerant.
- 2) Prometryn on cilantro: trying to get registered as 24C.
 - 3) Organic POST: expensive and low efficacy. Onions seem to be the most obvious use. Express Organic, a mixture of clove and thyme oil, seems to work well on onions.

Oleg Daugovish:

- 1) Goal for strawberries – works well in a wide variety of systems with or without plastic.
- 2) Celery – Chateau works well. Dual Magnum will control yellow nutsedge IF use a high rate.
- 3) Ongoing cover crop project.

Agronomic Session

Mick Canevari provided a summary report of the agronomic breakout session

Aquatic Session

A break out session for aquatic weeds was not held. Dave Spencer, USDA provided an update on activities related to aquatic weed management.

Trees and Vines Session

A break out session for trees and vines weeds was not held. Kurt Hembree, UCCE, Fresno mentioned the screening of Chateau and Invoke herbicides and the problems of marestail in orchards and vineyards.

Turf and Ornamental Session

A break out session for turf and ornamentals was not held. Clyde Elmore provided a brief update and mentioned Hussein Ajwa's work on methyl bromide alternatives in ornamentals.

Election of new executive committee members

The Workgroup Elected new executive members to replace outgoing members Steve Fennimore, Richard Smith, and Jodie Holt.

The new executive members elected were:

Tom Lanini, UC Davis to represent Group 1 – UCCE Weed Specialists or Statewide IPM Advisors
Marie Jasieniuk, UC Davis to represent Group 2 – UC Academic Senate Faculty or USDA Scientist
Steve Wright, UCCE Tulare to represent Group 3 – UCCE Farm Advisor

Rob Wilson, UCCE Farm Advisor was elected as the chair of the executive committee for 2004/2005.

The current executive committee is as follows:

Group 1: Anil Shrestha (through Nov. 2006) and Tom Lanini (through Nov. 2008)

Group 2: Albert Fischer (through Nov. 2006) and Marie Jasieniuk (through Nov. 2008)

Group 3: Rob Wilson (through Nov. 2005), Oleg Daugovish (through Nov. 2006), and Steve Wright (through Nov. 2008)

The meeting was attended by 30 people on Day 1 and 20 on Day 2.

The next meeting will be held at UC Davis on November 15 & 16, 2005.