

2006 Weed Workgroup Meeting
November 14–15, 2006 ■ Memorial Union, UC Davis

Agenda

Tuesday, November 14, 2006 ■ Memorial Union II and Smith Room (2nd floor)

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| 9:30 a.m. | Coffee and Rolls |
| 9:30-9:40 | Welcome, Overview of program |
| 9:40-9:50 | Introduction of new personnel |
| 9:50-10:15 | Weed control projects in vegetable crops (Richard Smith) |
| 10:15-10:40 | Weed control in onions and alfalfa in high dessert (Grant Poole) |
| 10:40-11:05 | Integrated Management of Perennial Pepper weed (Rob Wilson) |
| 11:05-11:15 | <i>Break</i> |
| 11:15-11:30 | Milestone—a new herbicide for thistle control (Joe DiTomaso) |
| 11:30-Noon | Open discussion: Weed WG participation in Continuous Crop Conference (CCC) (Michele LeStrange) |
| Noon-12:45 | <i>Lunch</i> |
| 12:45-1:05 | New broadleaf weed identification CD (demonstrated by Joe DiTomaso) |
| 1:05-1:40 | Update on glyphosate resistant horseweed and ryegrass (Anil Shrestha, Brad Hanson, Marie Jasieniuk) |
| 1:40-1:55 | Update on difficult to control weeds in strawberries (Oleg Daugovish) |
| 1:55-2:25 | Discussion of new positions, department updates (how are weed programs affected by department reorganization, changes in leadership, etc.) (Jodi Holt and Joe DiTomaso) |
| 2:25-2:55 | Group Discussion: Need for updating the UC IPM crop specific weed susceptibility charts (Barbara Ohlendorf) |
| 2:55-3:05 | <i>Break</i> |
| 3:05-4:05 | Breakout Sections: Trees & Vines or Vegetable Crops |
| 4:05-5:05 | Breakout Sections: Agronomic Crops or Aquatic Weeds
Dinner hosted by Robert and Rosewita Norris (details at the meeting) |

Wednesday, November 15, 2006 ■ Mee Room and Moss Room (3rd floor)

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| 7:45 a.m. | Coffee and Rolls |
| 8:00-9:30 | Breakout Section: Turf & Ornamentals or Non-crop/Rangeland |
| 9:30-9:45 | <i>Break</i> |
| 9:45-10:15 | WeedRIC Update (Joe DiTomaso) |
| 10:15-11:15 | Section Reports, future agenda and priorities, and election of new committee members |
| 11:15-noon | <i>Lunch-box lunches</i> |

Agronomic crops session

Members present: Mick Canevari, Brad Hanson, Kurt Hembree, Steve Orloff, Anil Shrestha, Rob Wilson, and Steve Wright

Mick Canevari has several trials on alfalfa.

- V-10142 gave poor control of yellow nutsedge in RR alfalfa. Sequential application of Roundup Weathermax gave excellent control of yellow nutsedge. Addition of Indicate (BB5) to Roundup did not enhance nutsedge control.
- Roundup Weathermax applied alone or with Pursuit and Buctril or Butyrac showed very little injury to alfalfa and provided good control of all weeds except henbit.
- Chateau alone resulted in some alfalfa stunting but gave excellent control of common chickweed, common groundsel, annual bluegrass, and annual sowthistle. Chateau with Raptor and Velpar resulted in some alfalfa stunting. Chateau with Gramoxone resulted in 70-78% alfalfa necrosis. Velpar alone provided poor control of annual bluegrass and annual sowthistle but fair to excellent control of common chickweed and common groundsel. Raptor alone provided poor control of all weed species.

Kurt Hembree mentioned that Prowl H20 could be used in furrows of conservation tillage systems.

Steve Orloff expressed concerns of weed species shifts in Roundup Ready alfalfa.

Steve Wright has been working on several weed control trials.

- In Liberty Link cotton with Ignite, he found that Ignite at rates ranging from 22 oz/acre to 43 oz/acre all provided excellent weed control including problem weeds such as annual morningglory and Johnsongrass.
- In layby application of glyphosate in Roundup Ready cotton, he found that treatments such as ET + Agridex, Chateau+ Agridex, Envoke + Agridex, Shark + Agridex, Ignite + Agridex, ET + Roundup Weathermax, Chateau + Roundup Weathermax, Envoke + Roundup Weathermax, Shark + Roundup Weathermax, Roundup Weathermax + Indicate, and Roundup Weathermax + AMS all provided excellent control of field bindweed except Envoke + Agridex at 14 DAT. Shark + Agridex and Shark + Roundup Weathermax had the highest cotton injury.
- In layby weed control in Liberty Link Fibermax cotton he found that ET + Agridex, ET + Indicate, ET + Ignite, Shark + Agridex, Shark + Indicate, Shark + Ignite, Chateau+ Agridex, Chateau+ Indicate, Chateau+ Ignite, Envoke + Agridex, Envoke + Indicate, Envoke + Ignite, and Ignite + Indicate gave 60% or better control of field bindweed. ET + Agridex, ET + Indicate, Shark + Agridex, and Ignite + Indicate gave 90% control at 14 DAT. Envoke + Indicate provided 80% control of johnsongrass.
- In broadleaf control in wheat, Osprey gave good control of annual bluegrass and chickweed when mixed with AMS. Shark and Puma were not effective against these weeds.

Anil Shrestha expressed concerns on over-reliance on glyphosate in dairy corn conservation tillage systems.

Non-crop session

Carl Bell's field research activities have focused on: control of annual grasses and broadleaf weeds in conjunction with restoration efforts; control of arundo with habitat and glyphosate; control of onionweed (*Asphodelus fistulosus*) with chlorsulfuron; evaluation of aminopyralid compared to other broadleaf herbicides for control of artichoke thistle and other composites. Education efforts include service on Cal-HIP (California Horticultural Invasives Prevention), publication of a booklet on invasive plants and wildfire, and publication of a web document on invasive plants related to horticulture.

Joe DiTomaso with Guy Kyser just completed a study looking at the integrated management of medusahead using prescribed burning and the herbicide imazapic. This study is conducted in Lassen County with Rob Wilson, Siskiyou County with Steve Orloff, Yolo County with Morgan Doran, and Fresno County with Neal McDougald. Results indicate that burning gives excellent control at three of the sites, but did not work at the Lassen County site, presumably because there was not enough fuel to give a hot enough burn to kill the seeds. In another study, Joe and his two graduate students, Niels Proctor and Jon O'Brien, are looking at the effect of the newly released yellow starthistle rust (*Puccinea jacea*) on root growth and the competitiveness and growth of yellow starthistle. First year results indicate that under adequate moisture conditions, *Puccinea* does not appear to impact root growth, above ground biomass or competition with wild oat. Finally, the new *Yellow Starthistle Management Guide*, published by Cal-IPC and authored by Joe, Guy and Mike Pitcairn at CDFA, will be released within a month.

Jodie Holt has a student working on the genetics of artichoke thistle with a goal of determining the origin of the species in California. Jodie's research activities focused on the following: Arundo—continuing research on control and revegetation; Artichoke thistle—using molecular markers to evaluate the role of crop cultivars of *Cynara cardunculus* in contributing to weedy cultivars (grad student project); Sahara mustard—studying mechanism of invasion in the Mojave desert; phenology, demography, and control experiments (grad student project).

Steve Orloff's non-crop work the past year has been a multi-year project with Rob Wilson looking at perennial grass reseeding coupled with six different weed control treatments. There were large differences in stand and vigor between the different grass species but overall the introduced wheatgrasses tended to perform best (crested wheatgrass was best at this site). Weed control was critical for perennial grass establishment. Telar was especially effective for the weed species present at the Yreka site. He did some work last year with Milestone. In agreement with the data of others, it was very effective. He tried three different timings and YST control was perfect at all three rates (3, 5, and 7 oz) and all three treatment timings.

Rob Wilson has been evaluating Milestone efficacy on several noxious weeds in Northeast California. He has been looking at using rimsulfuron, rimsulfuron tank-mixes, and glyphosate for selective annual grass control in big sagebrush rangeland. Rob and Joe DiTomaso, along with

several farm advisors, have a multi-site experiment examining establishing native and introduced perennial grasses for weed suppression in non-crop areas. Rob and Joe finished a study examining integrated management strategies for perennial pepperweed this year. In Lassen County, Rob is involved with a board of supervisor appointed committee that is developing a County wide plan for management of perennial pepperweed. The committee is currently applying for a million dollar grant for land-owner assistance to treat perennial pepperweed throughout the Susan River watershed.

Vegetable session

Oleg Daugovish has several weed control projects in strawberries: Sulfentrazone did not control yellow nutsedge but paper in combination with plastic prevented shoot emergence, Chateau and GoalTender seem to give good control of the fly-in weeds on beds and furrow bottoms. In transplant broccoli and cabbage (herbicides applied pre-transplant) Goaltender was safe and gave best weed control, followed by Chateau. Outlook controlled weeds similar to Chateau but stunted the crop. Dacthal failed to control weeds

Steve Fennimore

- Scythe will have organic formulation to be possibly registered in 2007. Dow is petitioning the organic standards board for approval.
- Emphasized the need for mechanization/robotics in weed control and need for collaborating with engineers able to design weed control tools. Continues work with precision weed control (Eco –Dan) for mechanical and chemical control.
- Has interest in herbicide tolerant lettuce
- Prowl H2O gave excellent control of weeds in transplant lettuce
- Splitting GoalTender application 3 weeks apart or more may be effective in controlling later emerging weeds
- Surface/buried drip in combination with Kerb: Kerb applied through drip was worse than Kerb overhead spray (best).

Kurt Hembree

- evaluated two formulations of a new sulfonylurea herbicide (V-10142) from Valent to determine efficacy and crop safety in transplant and direct-seeded cannery tomatoes. V-10142 provides excellent preemergence control of nightshade, pigweed, nutsedge, and lambsquarters at 0.1 and 0.2 lb ai/acre, but only gives marginal control of barnyardgrass and other summer grasses. Weeds are not effectively controlled postemergence. Direct-seeded tomatoes are injured significantly if applied following planting and before crop emergence. V-10142 applied before or after planting reduced crop growth slightly, but yields were not reduced. However, if Devrinol was applied preplant (to aid in grass control) in combination with V-10142, crop yields were reduced.
- GoalTender (the new formulation of Goal) could be applied to dry bulb onions at the flag to 1 true leaf stage without significantly damaging the onions or reducing yields. Treating onions this early allowed for us to achieve better control of shepherd's purse and london rocket than when we began treating onions at the 2 true leaf stage (as currently allowed

on the Goal label). Additionally, combinations of Prowl H20 and GoalTender applied to onions at the flag to 1 true leaf stage resulted in good weed control and minimal crop injury.

- We were able to obtain a SLN (24c) for Kerb chemigation in fall harvest lettuce planted from August through October in Fresno County. This will assist growers with control of winter mustards, including shepherd's purse and london rocket. Other herbicides need to be explored for control of prickly lettuce, sowthistle, and other sunflower species in lettuce.
- V-10142 and Outlook was screened for preemergence weed control in transplanted chili peppers. V-10142 gave excellent control of nightshade, pigweed, lambsquarters, and purslane, but did not provide adequate control of summer grasses. Outlook gave similar control, but gave slightly better grass control. Outlook applied post-plant and post-directed did not harm the peppers. Pepper plants died where V-10142 was applied post-planting, post-directed. When it was applied as a bedtop treatment before planting, crop tolerance was excellent. However, weed control was significantly reduced in the center of the row where soil was disturbed by the transplanter (treated soil may have fell into the hole where the roots were as the peppers were being planted, causing injury).
- Chateau applied at 12 oz/acre in combination with Prowl H20 at 32oz/acre gave excellent weed control in garlic. Crop selectivity is excellent.

Tom Lanini

- Cantaloupe, honeydew melon, watermelon, and tomato weed control. Comparing herbicides with and without hand weeding. Sulfosulfuron provided excellent weed control in tomatoes, Sulfentrazone killed seedlings.
- Interest in alternatives to handweeding since the future availability of handweeding may be limited
- Continued work with buried drip tape for weed management.
- Continued VOC compound review for herbicides (Treflan, Goal, etc.)
- Planning to test organic herbicides on mustard and other weeds

Michelle LeStrange

- Commented that halosulfuron (Sanda) experiments conducted at the KAC a few years ago in several cucurbit crops gave very good control of both yellow and purple nutsedge
- Investigating preemergence herbicides in transplanted bell peppers—at planting and layby applications
 - Dual Magnum provided great weed control and no crop phyto at planting
 - Goal Tender—labeled for application 30 days prior to transplanting and then must work soil before planting peppers; we applied 30, 15, and 1 day prior to transplanting. No crop phyto at 30 and 15, but yes phyto at 1 day; excellent weed control
 - Outlook—over the top at transplanting caused major crop phyto; applied ahead of transplanting—only slight phyto and excellent weed control.
 - Flumioxazin (Chateau)—too much pepper phyto; good weed control;
 - Flumioxazin (impregnated on fertilizer prill)—very little crop phyto however weed control is more erratic due to poorer coverage

- V10142—a Valent product—still looking for a fit in peppers; not that effective at layby, but application timing needs to be retried.

Richard Smith

- Prowl H2O at the loop stage followed by Goal Tender at the 1st true leaf stage gave 95% weed control in onions
- Scythe was not effective as the weeds (nightshade) were too big at the 2-leaf stage
- Yellow nutsedge controlled by Outlook
- In broccoli, GoalTender over the top burned the crop at a cool site (Castroville) but in general now that it is registered and being used there are few issues with using this material in this way, Matran was damaging to broccoli than Scythe as a post emergence directed spray on broccoli.
- Matran as directed spray was effective (reduction in weeding time from 36 to 6 h) but is likely too expensive at current prices

Steve Wright was selected as chair of the 2006-2007 Executive Committee.

The current executive committee is as follows:

Group 1: **Tom Lanini** (through Nov. 2008) and **Cheryl Wilen** (through Nov. 2010)

Group 2: **Marie Jasieniuk** (through Nov. 2008) and **Brad Hanson** (through Nov. 2010)

Group 3: **Steve Wright** (through Nov. 2008) and **Scott Oneto** (through Nov. 2010)

33 people attended the meeting.

The next Weed Workgroup meeting will be on November 13-14, 2007 at UC Davis.