UC Weed Workgroup Meeting

November 12-13, 2002
Salinas, California

AGENDA

Monday, November 12, 2002

10:00 a.m.	Coffee and rolls
10:15-10:20	Welcome and theme "Weed control issues on the coast and information intensive agriculture"
10:20-10:40	Introductions of new advisors and specialists–Oleg Daugovish, Farm Advisor, Ventura County, Anil Shrestha, Weed Ecology IPM Advisor, Kearney Ag Center, Mark Bolda, Strawberry and Caneberry Advisor, Santa Cruz County
10:40-11:00	Transition to organic vegetable project in the Salinas Valley–Liese Murphry, Professor, CSU, Monterey Bay
11:20-11:40	Practical application of precision agriculture to weed control–John Inman, Farm Advisor (retired) and Ag Consultant
11:40-12:00	Herbarium update and assistance on projects–Ellen Dean, Director and Curator of the UC Davis Herbarium
12:00-1:00 p.m.	Lunch (box lunches)
1:00-1:20	Alternative weed control projects in Ventura County–Oleg Daugovish, Vegetable and Row Crop Advisor, Ventura County
1:20-1:40	Novel herbicide patented by UC, Riverside–Milt McGiffen, CE Specialist, Vegetable Crops, UC, Riverside
1:45-3:15	Breakout sections: Vegetable crops or Non-crop areas
3:15-3:30	Break
3:30-5:00	Breakout sections: Trees & vines, or Turf and ornamentals

Business

Positions and Workgroup Funding

Positions

1) **Farm Advisor**
   a) North region–Napa, Mendocino, Sonoma cos. Need FA to focus on weed management in grapes, orchards, and non-crop areas. Invasive weeds are a major problem in this area. The emphasis of the research should be on developing management strategies and to assist organic growers in the area, as well as find alternative approaches for the control of invasive weeds.
   b) Central Region–Kern weed science advisor
   c) Southern Region–Imperial weed science advisor
2) **CE position**
   a) UC Riverside–need a Turf, ornamental and subtropical weed control Specialist
   b) UC Davis–need a weed control Specialist focused on weed control in trees, vines and ornamentals
3) **AES position**
   a) We would support a Weed Biocontrol position at UC Riverside. This would be a position within the Entomology Department, but with emphasis on biological control of weeds. This position would not be the first choice for the Weed Program, but is critical to the University of California. Currently there is no Specialist or AES faculty working with biological control of weeds, despite the fact that there are numerous campus scientists in entomology and plant pathology working with biological control of other pests.
   b) The primary need of the Weed Science Program in the state is an ecologist with a specialization in population ecology and modeling. This person could teach the IPM course previously taught by Robert Norris. The position would be housed at UC Davis and would serve a critical need in the Weed Science Program, as the individual would likely collaborate with most Specialists and several Farm Advisors and Area Advisors.

Workgroup Funding

We determined that the primary project for future funding should be the expansion of the Susceptibility Chart. The chart is widely used by both researchers and the public. Steve Fennimore, Tom Lanini, Joe DiTomaso, Milt McGiffen, Ron Vargas, Kurt Hembree and Richard Lee would take the lead role in this project. We would ask for $15,000. The expanded chart would require adding organically approved alternatives, as well as including new herbicides and other problematic weeds. It would require that we plant several weeds in the field in multiple locations and conduct screening trials using a couple of rates of the materials of interest. We may also add crop sensitivity to the chart. The ultimate goal is to include this information in a hand held palm computer for use in the field. Jerry Schmierer is currently developing this technology.

We will submit a proposal to DANR for funds to revise the weed susceptibility chart. We will update the chart on the WeedRIC website. We will need funds to:

- Test additional weeds
- List nonchemical options
- Screen organic options

Steve Fennimore will write a proposal for funding. He will try to get it by the time of the CWSS in January 2003.

Commodity Reports

Vegetable section notes (submitted by Steve Fennimore)

Oleg Daugovish

- *Celery*–He is testing Dual Magnum in celery for control of yellow nutsedge. Dual controls nutsedge but Lorox or Caparol will be necessary to control the other weeds.
- Oleg is evaluating the use of mustard cover crops for weed control in vegetable crops.
- Pepper. He mentioned that nightshade is a problem in peppers since it is a reservoir for white fly.

Richard Smith

- *Celery*–He is collaborating with Daugovish and Fennimore on a celery project. See comments above by Daugovish.
- *Cole crops*–Richard has been evaluating post emergence over-the-top applications of the new Goal 4F formulation in broccoli. He finds the 0.063 lb ai/A rate to be safe on broccoli, and effective on little mallow and nettle. A project request has been sent to IR-4 so that this use can be registered. Is interested the use of directed sprays of Shark and Valor in cole crops.
- *Lettuce*–Has been collaborating with Fennimore on lettuce. See comments by Fennimore for details.

Kurt Hembree

- *Onion*–Preemergence applications of Valor at 0.025 to 0.047 lb/a resulted in an OK onion stand. These treatments provided 90% control of chickweed and mustards for 60 days. This Valor treatment is good to hold weeds in onion long enough so that Goal can be used.
- *Garlic*–Shark did a nice job of controlling field bindweed as a preharvest application in Garlic. Kurt what was the rate on Shark? Shark was superior to Roundup and diquat for preharvest field bindweed control in garlic. Will be pursued as an IR-4 project. Valor in combination with prowl looks good. N-phuric is gaining ground and Dacthal is losing ground. Basamid may have a fit in garlic.
- *Tomato*–has been testing Basamid on tomato. He used 1, 1.5 and 2 inches of irrigation water to incorporate Basamid. Two inches of water was too much.
- *Weed problems*–Purslane is harder to control. Sprangletop resistance to dinitroanaline herbicides has apparently happened.

Tom Lanini

- *Tomato*–Trifloxysulfuron methyl – too injurious on tomato at 3 g/ha. Controls nutsedge. Tomato has good tolerance to sulfosulfuron applied early postemergence, and 20 g/ha gets nutsedge, but is weak on barnyardgrass.
- *Preirrigation*–studying the role of preirrigation in vegetable weed control programs in collaboration with Steve Fennimore.
- *Precision ag*–collaborating with Dave Slaughter and Ken Giles. They have been taking weed population samples using machine vision. Tom has been testing hot oil as a weed control agent for organic systems. The idea is selective placement of the hot oil to kill weeds with the machine vision sprayer.

Warren Bendixen (c*ole crops*) has been testing Goal postemergence in broccoli, and it works well. He is interested in testing this treatment in cabbage and cauliflower as well.

Kai Umeda

- *Cole crops*–Kai saw a lot of injury on broccoli with Goal. Kai suspects that broccoli injury may be related to application volume. Kai will be testing this further.
- *Onions*–Applications of goal + buctril at 0.063 + ? works well. Kai has seen problems with application of Valor at the 2 leaf stage. Injury symptoms are delayed.
- *Melons*–Rimsulfuron + halosulfuron postemergence on melons is a promising treatment.

Grant Poole is interested in working on weed control in carrots and onions. Yellow nutsedge is becoming a more severe problem. Grant is interested in doing some work on the use of EPTC to control nutsedge in fallow ground.

Milt McGiffen has

- two students working on a *cowpea* breeding program
- a visitor from Italy Ivan Sartorato who is working on weed competition
- Seok Ku Hong is a visitor from Korea who is working on a *weed seed taxonomy* project.
- Eddie Ogbuchiekwe is working on projects to define the economics of weed control in carrots and celery.
- Milt is interested in the use of crop rotations for nutsedge control.

Anil Shrestha has been working on a project to provide supplemental CO2 to tomato. He found a 300% increase in yields and weed competition has no effect on yield where additional CO2 was supplied.

Steve Fennimore

- *Celery*–comments under Daugovish
- *Cole crops*–comments under Smith
- *Lettuce*–Ethanmetsulfuron was evaluated in lettuce at 0.0047 to 0.0376 lb ai/A. We did not find sufficient crop tolerance in romaine or head lettuce. Tank mixes of Dacthal and Kerb were evaluated in lettuce at 0.2 to 6 lbs ai/A. Lettuce does not tolerate Dacthal at rates above 1.0 lb ai/A. We found no weed control benefits to these low rates of Dacthal and plan no further work. In collaboration with lettuce breeder Beiquan Mou USDA-ARS Salinas, we have acquired sulfonylurea herbicide tolerant lettuce germplasm from the University of Idaho. We plan to evaluate this germplasm as a potential method to expand herbicide options for lettuce.

Trees and Vines section notes (submitted by Steve Fennimore)

Tom Lanini

- He found that Visor and CGA were weak on spurge.
- Farm Saver is a cheaper form of Surflan for bearing vines.
- Tom has been looking at mechanical weed control in vines. Row mowers work, but foxtails are a problem.
- Roundup. There are a number of formulations and the performance varies. Tom suggests a 3% v/v solution and the addition of ammonium sulfate in every tank load.

Richard Smith is involved in a multidisciplinary trial in wine grapes. Treatments are: Simazine + Goal, cover crops, and a Clemens cultivator. They are considering economic aspects of the treatments as well.

Joe DiTomaso is testing a 2.5% acetic acid solution to use as an organic-approved burndown treatment.

Turf and Ornamentals (submitted by Steve Fennimore)

Turf

Dave Cudney

- Turf grass tests. The third edition is coming out. The plant pathology section is being revised. Quinclorac (Facet) has been registered in turf for clover control.
- MSMA + halosulfuron work well for nutsedge control in turf.

Ornamentals

Non-crop section notes (submitted by Joe DiTomaso)

1. Through the Weed Management Area, *Steve Wright* and *Jim Sullins* purchased a spray rig for use in controlling yellow starthistle. The charge is $20/acre and it is designed to give small acreage ranchettes or homeowners the opportunity to control yellow starthistle without the need to hire more expensive applicators that do not normally want to treat such small acreage. About 50% of the small landowners have participated.

2. *Rob Wilson*, *Don Lancaster* and *David Lile* tested the efficacy of imazapic (Plateau) on the control of annual grasses, including medusahead in Lassen County. The pretreated the area by either burning, tilling, or doing nothing (check). The results indicated that imazapic gave excellent control of annual grasses (all non-native), particularly medusahead, at very low rates, as low as 0.5 oz ae/ac with no injury to native perennial grasses in the fall.
3. *Rob Wilson* and *Joe DiTomaso* are also working on a project for the management of perennial pepperweed in Lassen County. After controlling perennial pepperweed using integrated approaches (combinations of discing, burning, grazing [cattle] in fall; mowing in spring, herbicides [2,4-D, chlorsulfuron, glyphosate in summer) they are revegetating with native perennials in the following fall.
4. *Rob Wilson*, *Don Lancaster* and *Dan Marcum* are also conducting a project designed to reduce the encroachment of juniper into sagebrush habitat. This encroachment has threatened sage grouse habitat. They have found that they can control the plant with spot applications of hexazinone as a pelleted formulation. In addition, they are using cut stump treatments of imazapyr. It is very difficult to cut the lower branches using cut stump treatments, so without the herbicide the branches continue to grow. Imazapyr provide the necessary control of the lower branches.
5. Medusahead; *Ron Vargas, Neil McDougald, Glenn Nader, Rob Wilson, Mike Connor, Morgan Doran, Steve Orloff, Anil Shresthra* are all working with *Joe DiTomaso* on a large scale project in 5 counties. The goal of this project is to test the effectiveness of integrating prescribed burning and imazapic (Plateau) for the management of medusahead and the establishment of native species. Plateau was registered for use in the US last year and is currently under review for registration in California. To date, two sites (Fresno and Yolo cos.) have already undergone the first year treatment, including reseeding. The other three sites (Siskiyou, Yuba and Lassen) will begin in 2003.
6. *Ron Vargas* and *Anil Shresthra* also have a project in the San Luis Water District looking at irrigation ditch bank revegetation with natives. This water district services 60,000 acres of agricultural land. Traditionally residual herbicides were used to achieve bare ground. However, dust issues have become a problem. The area has not been sprayed for 4 years to prepare for the revegetation program. As a result, both Russian thistle and the native Hemizonia congesta have increased. They are using 9 native grasses. These grasses were seeded in November of 2002.
7. *Joe DiTomaso* discussed his work with tree-of-heaven (*Ailanthus altissima*). The best control was achieved with full strength imazapyr (Stalker) using a cut stump or hack and squirt treatment. Basal bark treatment with either 20% Stalker or Garlon 4 were equally effective, but Garlon 4 has less preemergence activity and less activity on grasses so is probably a better choice for basal bark applications. In addition, it is a lot less expensive than Stalker.

Agronomic section notes

Steve Wright

- Roundup. Steve has been evaluating generic glyphosate formulations in Roundup Ready cotton. He finds no differences in nutsedge and morning glory control.
- Steve has found a new annual morning glory.

Mick Canevari

- Roundup Ready alfalfa. Works very well during stand establishment. There was some mortality in the early testing. After stand establishment Mick is comparing a standard Velpar and Karmex program compared to Roundup alone. The launch date is 2004.
- Raptor is now registered on alfalfa and will displace Pursuit. There is more injury on alfalfa with Raptor than with Pursuit.
- There are some restrictions on the use of Gramoxone as a burndown in dormant alfalfa, so Mick is looking at Valor as an alternative.
- There is a new publication for postemergence weed control in alfalfa. This publication has injury photos. In dry beans, Valor PPI and PRE control nightshade at 0.094 lb ai/A. Injury happens at 0.125 so the tolerance window is narrow.

- In wheat, Olympus (a sulfonylurea herbicide) has a section 18 for control of ripgut brome. This herbicide is active on canarygrass, wild oat, ryegrass. Falcon (mesotrione) is also available in wheat and it controls everything that Olympus controls.

Joe DiTomaso

- In the Imperial Valley some canarygrass is resistant to Poast and various other DIM herbicides.
- We need information on products to control fiddleneck in pastures. Telar is registered in rangeland and pasture. Telar and dicamba are good on fiddleneck. The question was raised as to whether carfentrazone was active on fiddleneck?

Doug Munier

- In cotton, he has been testing carfentrazone at 0.33 oz. post directed for velvetleaf control. This treatment also has good activity on ground cherry.
- Doug is working on site-specific weed control to manage velvetleaf and johnsongrass patches.

Marie Jasieniek will continue working on herbicide resistance in all weed species.

Tom Lanini

- Alfalfa–is evaluating the necessary duration of control for dodder. Has identified 18 biotypes of dodder.
- Corn–is evaluating Roundup Ready corn

Addendum–The following comment was added by *Ernie Roncoroni* after the meeting: Carfentrazone will control fiddleneck at all growth stages. Three years ago I used Carfentrazone at .03lb ai/A + surfactant to cleanup up 2 acres of wheat following a conservation tillage trial that had a severe stand of flowering fiddleneck. The cleanup was in cooperation with FMC using their experimental permit.

Notes of Executive Committee Meeting

November 13, 2002

The committee is composed of:
2- UCCE Weed Specialist or Statewide IPM Advisor
2- UC Academic Senate Faculty or USDA Scientist
2- UCCE Farm Advisor

Weed Workgroup Executive Committee

Term ends November	*Name*	*Representing*
2004	Steve Fennimore (co-chair)	UCCE Specialist
2004	Richard Smith (co-chair)	UCCE Farm Advisor
2004	Jodie Holt	UC Academic Senate Faculty
2006	Anil Shrestra	UCCE Statewide IPM Advisor
2006	Rob Wilson	UCCE Farm Advisor
2006	Marie Jasieniuk	UC Academic Senate Faculty

1. The next meeting will be at UC Davis on November 11-12, 2003, and in Salinas in November 2004.
2. The steering committee spent the entire meeting discussing 2003 potential agenda topics:
    a. Biofumigation–there is a great deal of interest in mustard crops in California. Potential speakers include Steffan Able, Carlos Quiros, Howard Ferris
    b. Herbicide resistance–topics/weed species relevant to California. Potential speakers include Jodie Holt, Albert Fischer, Scott Steinmaus, Dave Bayer
    c. Invasive species issues relevant to California
    d. Discussion of Roundup Ready crops.