

UC Weed Workgroup Meeting

November 13-14, 2007 ▪ UC Davis

Tuesday, November 13, 2007 • MULL and Smith Rooms (2nd floor, Memorial Union)

9 AM *Coffee*
9:30-9:50 Weed issues following fires in southern California ▪ *Carl Bell and Cheryl Wilen*
9:50-10:10 Update on the weed section of the UC IPM Web site ▪ *Joyce Strand*
10:10-10:30 Reduced tillage weed control challenges ▪ *Jeff Mitchell and Anil Shrestha*
10:30-10:50 *Break*
10:50-11:10 Relationship between the weed workgroup and CWSS ▪ *Carl Bell*
11:10-11:30 Business session: future agenda and priorities, elections ▪ *Steve Wright*
11:30-12 PM VOCs issue with herbicides ▪ *Tom Lanini*
12-1 *Lunch*

Joint session with Spray Application Technology WG

1-1:25 PM New nozzles for improved weed control-T-Jet speaker ▪ *Ken Giles*
1:25-2:00 Outcome of new anti-drift regulations for the SJV ▪ *Kurt Hembree*
1:55-2:15 Effective participation with surface runoff coalition ▪ *Mick Canaveri*
2:15-2:40 Chateau injury on tree crops in Merced-Stanislaus Counties ▪ *Roger Duncan*
2:40-3:00 *Break*
3:05-4:25 Improving weed control with most effective water volume/spray pressure:

- Coalition to reduce herbicide and runoff ▪ *Mick Canaveri*
- Orchard crops ▪ *Kurt Hembree*
- Field crops: improving weed control with adjuvants, water volumes, spray pressures ▪ *Mick Canaveri and Steve Wright*
- Non-crop ▪ *Tom Lanini*
- Vegetables ▪ *Steve Fennimore and Richard Smith*

Dinner at Tom & Brenda Lanini's home

Wednesday, November 14, 2007 • Mee and Moss Rooms (3rd floor, Memorial Union)

8-9 AM Commodity B/O session #1 (1 hr): **Trees & vine or Vegetable crops**
9-10 Commodity B/O session #2 (1 hr): **Agronomic crops or Aquatic weeds**
10-10:15 *Break*
10:15-11:15 Commodity B/O session #3 (1 hr): **Turf & ornamentals or Non-crop/rangeland**
11:15-12 PM Section reports
12 PM Adjourn (*box lunches*)

Agronomic crops session

Mick Canevari has been working on options for weed control in wheat.

Doug Munier discussed site-specific long-term study of velvetleaf control. He also had another site-specific study on johnsongrass that was eradicated with glyphosate and Dual.

Anil Shrestha discussed an experiment with rolled cover crops followed by no-till cotton. The cotton failed to establish because of regrowth of cover crop.

Scott Steinmaus raised a question asking is there was a higher probability of herbicide-resistance in RR alfalfa because of the intensity of a selection pressure in a perennial crop.

Non-crop/rangeland session

Carl Bell has a project on invasive species in horticultural sites. He has educational programs to have CA nurseryman to plant the right species (www.plantright.org). He is also looking at options to get rid of annual grasses in perennial plantings.

Jodie Holt has students working on wildland weeds and *Arundo* biology. She is looking at options for control of *Arundo* with minimum inputs. She also has a new student looking at riparian communities and another student looking at the genetic and morphological traits of Artichoke thistle. She has been working on Sahara mustard and has found that this species is moving into the SW desert areas and has started to replace black mustard. She found that Sahara mustard has a short life cycle and the seeds are filling the soil seedbank. She is also working on CLIMEX model for predicting the occurrence of weeds such as feltgrass.

Guy Kyser mentioned of a large scale study on economic control of YST and students with **Joe DiTomaso** were looking at YST costs for ranchers. He also has a project on biocontrol agents for tamarisk. He has a project on switchgrass for biofuels and is looking at the invasiveness of switchgrass and methods to control them.

Steve Orloff has been working with Milestone for yellow starthistle. Transline works but is too expensive for growers. Milestone at 1-3 oz was good on fiddleneck and was quite safe on alfalfa.

John Roncoroni mentioned that stinkweed was a problem in roadsides in Napa. Puncturevine was also a problem.

Rob Wilson has been working on annual grass (Medusahead and downy brome) control in non-crop areas and rangelands. Imazapic and Plateau had limited success. Rimsulfuron @ 4oz/acre seems to be working good. Rob has also been looking at options for puncturevine control. Solicam, Prowl H2O, and glyphosate did not work, Arsenal and Milestone gave

better control, and plant competition seems to be working better. He suggested that someone needs to work on germination and emergence aspects of this species. This species is becoming a problem on roadsides. Rob mentioned that perennial grasses (Timothy and orchardgrass) are becoming popular hay crops but invasions from annual grasses are reducing the quality of hay and these weeds need to be controlled. He looked at Kerb, Prowl H2O, Sencor, and metribuzin. He also has a perennial grass overseeding project. Once the grasses were established, weed suppression was impressive. The problem was finding herbicides that work well during establishment. Rob mentioned that there is a new Weed Specialist with University of Nevada and he suggested that it may be beneficial to invite him to the WWG meetings.

Steve Wright has been getting good control of Italian starthistle with Milestone. He is also looking at effect of weather on weed control e.g. Osprey damage on wheat under frosty conditions. He has got good control of horseweed on ditchbanks when the weeds were sprayed at an early stage. He has been finding that annual morningglory is now a big problem in vineyards.

Trees and vines session

Mick Canevari worked on pre and post-emergence materials for nutsedge control. A new material from Valent worked better than the standards (Norflurazon and Rimsulfuron). For the pre-emergence material enough rainfall is needed for incorporation. It does not seem to be appropriate for drip irrigated vineyards. It is good for January applications but not good for residual control. He also looked at timings of rimsulfuron and found that it was similar to Chateau in terms of weed spectrum. Rely @1 lb was not good on bigger horseweed and hairy fleabane but another formulation of glufosinate (Ignite) may work. For these two weed species, control is lower when the plants are taller than 6”.

Anil Shrestha has been working on a walnut extract based natural product for control of horseweed and hairy fleabane.

Doug Munier is looking for options to control filaree and glyphosate-resistant ryegrass in orchards.

Kurt Hembree has been working on a new Valent compound. He has been getting good control of hairy fleabane with early treatments of Rely or Gromoxone with a lot of water. He is also working with a new compound from BASF which seems to be better than Rely but missed nutsedge and grasses. He has been getting good control of weeds when the material is applied under cloudy conditions with rain the next day. He is also conducting a grape injury symptomology trial with various herbicides in a simulated drift scenario. Clyde Elmore asked if a residue analysis could be done in this trial which would be more meaningful. Kurt is also getting good control of filaree with Chateau @ 12oz.

Steve Wright has been screening herbicides for hairy fleabane control. Halosulfuron did serious damage to almonds but worked well in citrus orchards with no injury to the crop.

John Roncoroni has been working on timing of Rely on *Epilobium* sp. and has been screening various materials for vineyard weed control. He found that continuous use of glyphosate selected for horseweed, filaree, mallow, and willowweed. He is also working with **Tom Lanini** on various organic herbicides.

Vegetable crops session

Bell peppers—Michelle Le Strange discussed studies that she and Richard Smith are conducting to assess transplanted bell pepper tolerance and weed control with new herbicides in their respective pepper growing regions. In trials at the UC WSREC Dual Magnum or Outlook applied at planting with or without layby applications of Dual Magnum, Dacthal, or Prowl H₂O provided very good full season control with very little bell pepper injury. Matrix applied at transplanting caused 50% injury, including some bell pepper death. V-10142 failed to control nightshade, but was effective against the other weeds in this study (pigweed, purslane, nightshade, lambsquarters, and sowthistle).

There has been a request from the bell pepper industry to screen bell pepper lines for natural tolerance to herbicides and Michelle reported on her initial attempt using transplants in the field.

Cabbage—Oleg reported that applications of Goal plus AN20 were fairly safe on cabbage.

Lettuce—Steve Fennimore reported on work he has been conducting on transplanted lettuce. Currently, about 10% of the lettuce is transplanted with the rest being direct seeded. Prowl H₂O provided excellent weed control and good crop tolerance in transplanted lettuce, although was too injurious to direct seeded lettuce. Transplanting eliminates thinning costs, and allows robotic cultivation. Steve is currently testing the Robocrop in transplanted lettuce.

Steve is also testing lettuce lines for natural resistance to several ALS type of herbicides.

Melons—Tom Lanini has been looking at melon tolerance and weed control in melons. Weed control in melons is difficult due to the limited availability of registered herbicides. Possible “new” herbicides for melons include clomazone (Command), rimsulfuron (Matrix), metolachlor (Dual Magnum), flumioxazin (Chateau), sulfentrazone (Spartan), pendimethalin (Prowl H₂O) pyriithiobac (Staple) and sulfosulfuron (Maverick). Two honeydew, three cantaloupe and a watermelon variety were tested for tolerance and weed control with these new herbicides. Applications were made after planting, but just prior to crop emergence and cultivated to move the herbicide into the soil. The melons were also irrigated to further move herbicides into the soil. The combination of cultivation and irrigation resulted in greater herbicide movement and more melon injury than observed in previous years. In general, cantaloupe was tolerant of Command, Chateau, Sandea and Prowl H₂O, and only slightly injured by Dual Magnum, and Reflex. Matrix, Staple, and Spartan caused more injury to cantaloupe. The same pattern of melon tolerance was also

seen in honeydew melon and watermelon, except they were also tolerant to Spartan. Weed control was good to excellent and hand weeding time was reduced with all the herbicides compared to the untreated control. Melon yields were closely related to melon tolerance with higher yields where injury was low.

Onions—Oleg stated that hand weeding nutsedge out of onions was very expensive. He has tested both Outlook and Dual Magnum for nutsedge control in onions. Outlook was not effective at controlling nutsedge, but Dual Magnum provided excellent control. Dual Magnum was applied three times – the first application occurred at the 4-5 leaf stage of onions, the second application about one month later and the third about 1½ months after the second application.

Strawberry—Oleg Daugovish indicated that nutsedge is increasing in strawberries, particularly in the Ventura area. He has been testing various combinations of paper and plastic as weed barriers, including paper under plastic, paper on top of plastic and paper between two layers of plastic. Oleg is considering testing “Tyvek” as a weed barrier, although cost is about \$65 for enough material to cover 1000 ft of bed, which may be too high. The planting hole is another source of weed problems, particularly with weeds that blow in from outside the field. It was suggested that the sprayable mulches might be useful to spray on the hole after the strawberries are planted.

Tomatoes—Tom Lanini reported on work he is conducting in processing and fresh tomatoes. In greenhouse studies, dodder control was excellent with Spartan and Define and good with Maverick and Prowl H₂O. In field studies, PRE applications of Spartan, Maverick and Matrix provided excellent full season weed control with or without hand weeding in direct seeded tomatoes. In spite of a lot of injury from the Spartan applied PRE, tomatoes were able to recover and tomato yields were very good when the Spartan application rate was 0.10 lb ai/ac. Matrix or Sandea applied PRE were much more effective against dodder and other weeds compared to POST applications.