

Control Methods Working Group Notes

Cal-IPC Symposium – October 8 and 9, 2009

These notes encompass the Control Methods groups on Thursday and Friday.

Thursday, October 8

Topic Leader – Joe DiTomaso, UC Davis

Facilitator – Mark Newhouser

Note Taker – Kai Palenscar, UC Riverside/Cal-IPC Student Chapter

Number Attending: 30

Start Time: 4:40pm

Minutes

Joe DiTomaso started off the group with brief introductions. Introductions lasted 10 minutes. (4:50 pm)

Species of Interest: giant reed (*Arundo donax*), knapweeds (*Centaurea* spp.), storksbill (*Erodium* spp.), *Euphorbia terracina*, perennial pepperweed (*Lepidium latifolium*), dalmation toadflax (*Linaria dalmatica*), tamarisk (*Tamarix* spp.), broom species, thistle species, and a variety of grasses.

Attendee Employment Areas: park service, private consultant, open space district, habitat authority, reserve/preserve manager, grower (Hedgerow Farms), and graduate student.

What is Matrix (rimsulfuron, Dupont) and what is it effective on?

It is a selective herbicide used to treat cheatgrass (*Bromus tectorum*) and can also be applied as a pre-emergent in the fall; needs soil contact to be effective. Rangeland uses.

May be effective as an early post-emergent herbicide.

- Hedgerow Farms – effective on medusahead (*Taeniatherum caput-medusae*), applied 3 wk post-rain, at a rate of 4oz/acre.
 - In spring medusahead was effected but natives “looked good” including; lupines, poppies, brodiaea, and oaks.
 - Not as effective on goatgrass (*Aegilops triuncialis*)
- Joe DiTomaso – tested on sagebrush community. Effective on clovers and invasive grasses applied with a boom sprayer over 50 acre plots. Generally does not affect native species, including native perennial grasses.

Are pesticide Laws and Regulations widely known and followed?

Nelroy Jackson commented that laws and regulations need more attention within herbicide applicators and regulators.

- Court Case – Idaho

- Oust (Dupont, Matrix family of herbicides) was applied to a burn area. Light soils were blown into a potato/sugar beet field. Agricultural damage occurred and case was brought against applicator. Grower won case. The moral of the story is be aware of your surroundings and try to foresee environmental disturbances which may increase herbicide motility.
- 2,4-Dichlorophenoxyacetic acid (2,4-D) – review regulations
- Imazapyr – very easy to get off label. As well as being illegal this is a waste of money. To minimize over-application the drizzle, whip or roller application methods can be used. These methods apply large droplets and are effective at keeping the herbicide on the target species with little dispersal by wind.

How do you control medusahead?

- Disking reduces thatch and buries seeds which may increase seed life, as well it exposes buried seeds. Seedbank lasts at least 2 years. Disking also degrades soil structure and is not advised.
- To remove thatch – burn if appropriate.
- Mowing has been shown to control medusahead. Time mowing to occur just prior to seed maturity.

How do you control European beachgrass (*Ammophila arenaria*)?

- Habitat (Imazapyr) has 95% successful control. A mix of glyphosate and Habitat (2% and 1%, respectively) has been shown to be a very effective mix that interrupts two enzyme systems within protein synthesis. Native colonization was not shown to be effected by treatment. Sandy soils may minimize long-term effects of Habitat soil activity through leaching, but short-term leaching may increase root uptake and plant kill. Negative effects can be seen 3 or more years post imazapyr application.
- Joe DiTomaso – you may see long-term effects from Habitat as dead plants degrade into the soil and re-mobilize the herbicide. Kill zone is the term used to define the soil area with active herbicide compounds able to kill plants.
- Nelroy Jackson – the glyphosate/Imazapyr mix increases herbicide mobility and efficacy and also minimizes negative effects by decreasing the total Imazapyr applied per acre.

How do you control tamarisk?

- A mix of glyphosate and Imazapyr gives a good kill.

How do I control giant reed within red-legged frog (*Rana aurora draytonii*) habitat?

- Regulations are really restrictive, no wicking applicators.
- Stem injection – glyphosate
 - Easy to get off-label, 5 mL per stem.
 - Need to apply to most/all stems to see effective control.
- Solarization has been shown to be effective with excellent results on an organic farm.
- Cut stump is effective on small patches and not effective on large patches. Application timing is important.

What are some ways to increase public awareness and sympathy for herbicide use?

- Trailhead signs or displays describing the study site.
- Change display based upon seasonal applications.
- Regular weed removals involving the public which engage volunteers and non-profit groups.

Ballistic Technology (paintball herbicide application) – James Leary

- High volunteer satisfaction!
- The method can be done from the ground (foliar or stem) or by helicopter (canopy) and accesses difficult terrain – “weed sniping”.
- There is 0 risk of drift and can be applied from 100ft of the target plant, at 300ft/sec.
- Fountain grass (*Pennisetum setaceum*) – may not rupture on impact due to the plant architecture.
- Lethal dose – 30 to 40 units (paintballs) per plant. This was an estimate for tree applications. Single shots = sub-lethal doses, diminishes native risk.
- Application rate is under legal label rate.
- Since paintballs apply the herbicide within a capsule this is considered a new use of the product.

Adjourn Meeting (5:35 pm)

Friday, October 9

Topic Leader: Joe DiTomaso. UC Davis

Facilitator: Mike Kelly

Note taker: Kristin Weathers, UC Riverside

Attendees:

Paul Aigner	David Thomson	James Leary
Charlie de la Rosa	John Knapp	Bill Winans
Amelia Swenson	Judy Johnson	Peter Warner
Tanya Meyer	Martin Hutten	Chuck Synold
John Anderson	Joanna Clines	GiGi Hurst
JP Marié	David Minnesang	Ellen Gartside
Ginger Bradshaw	Ken Moore	

Attendee Interests:

Species: barb goatgrass, yellow starthistle, tamarisk, perennial pepperweed, purple loosestrife, St. Johnswort, medusahead, brooms, *Erodium*, *Arundo*, fennel, figs

Methods/tools: interested in alternatives to basal bark treatment, specialty products, grazing

Herbicide Discussion

- New herbicide, Matrix, (rimsulfuron) as discussed in first discussion session.
- **Question:** does Matrix tank mix well?
 - Joe DiTomaso: I have not used in a tank mix, do not know.
- Attendee: We use clethodim to take out medusahead, rye grass, goat grass. Does not seem to hurt bunchgrasses, can take 2 years.
 - Joe DiTomaso: It doesn't work well on big grasses. How expensive is it?
 - Attendee: about \$40/acre.
- Attendee: We are also using fluazifop. It seems to work better early.
 - Mike Kelly: Fluazifop also picks up *Erodium*. It does kill lilies, knocks back or kills outright.

Erodium

- Joe DiTomaso inquired if attendees were having long term problems with *Erodium*. Many attendees said they did and there was a group consensus on revisiting listing *Erodium*.
- Mike Kelly: Telar works on *Erodium*
- John Anderson: We use Milestone on *Erodium*,
- Joe DiTomaso has not had much luck with Milestone on *Erodium*.

Killing palms by drilling holes and injecting low rates of glyphosate.

- Mike Kelly: Need to shave up tree with chainsaw, then drill in. Regulators accept because they like the standing dead for birds (owls will use palms).
- Fan palms only need a single hole, 1/2 oz glyphosate into middle will kill. Dilute with water to get better movement into the plant (dilute 50%). Use plastic tubing to squirt herbicide inside.
- Phoenix palms are harder, there have 3 vascular bundles and you need to drill into all three to kill the palm.
- Need large drill bit. Uses 5/16 construction drill bits (belt hanging tool bit).
- Technique also works on eucalyptus. Uses auger bits.

Anyone have issues with agave species becoming invasive (*Agave americana*)

- Joe DiTomaso: That is native.
- Attendee: Maybe I have the wrong species. We have hundreds of plants on a dry, south-facing slope.

I have been experimenting with using saltwater to control weeds

- Joe DiTomaso - That is the oldest herbicide in the world.
- Mike Kelly: What is it controlling?
- Attendee: Seems to have worked on fennel, hemlock, white horehound (there is a poster in poster session), knocks back perennial pepperweed,
- Joe DiTomaso: But it is not systemic.
- Attendee: Regulators said pumping salt water onto land is not regulated.
- Mike Kelly: Doug Gibson used it on *Arundo*, but I do not remember the results.
- Attendee: It doesn't generally inhibit natives (working in saline environments), but

some of the less salt tolerant natives did die.

Does anyone have experience using aminopyralid on blackberry?

- Attendee: I work in Yosemite National Park and can only use aminopyralid or glyphosate. Cannot use triclopyr. Yosemite has individual park regulations. Until a couple years ago, we couldn't use any herbicide.
- I sprayed Milestone (aminopyralid at 7 oz/ac) on blackberry.
- Treatments were started late May (early green berry stage), this knocked it back, but late season (July) treatments did not work as well. Full sun plants were more susceptible than shade plants.
- We have 80 canopy acres of blackberry. Going up into drier sites.
- In the fall it is easy to kill, but it is a logistical hassle, so I am trying to increase the window with Milestone treatments. For now I am using glyphosate.
- Joe DiTomaso: I think Milestone is not good on woody species, but every so often someone tells me it works.

Controlling Perennial Pepperweed

- Joe DiTomaso: I've had inconsistent results with Telar -- it does not work well in higher organic matter soils.
- Mike Kelly: *Lepidium* is the one weed I don't have a handle on. I get good top kill and second year control, but it comes roaring back in the 3rd year, so I am not killing the root.
- I have tried combining Telar with Garlon 4, thinks they were going at too high a rate, so trying lesser rates.
- Trying goats. Following goats with spraying is giving the best result. Natives (*Baccharis*) came roaring back.
- Still finding roots at 5 m (young study)
- Attendee: I have tried imazapyr in aquatic habitat, effective at higher rates, but less selective.
- Mike Kelly: some concern with residual and movement so not using it as much.
- Attendee: I've had better results with Garlon 3A, but not Garlon 4
- Attendee: I've had more resprouting with Garlon than Roundup
- Joe DiTomaso: has not had good luck with triclopyr on pepperweed.
- It is important to hit lower weeds. Tony Svejcar study - showed best control at full bud stage or later. Mark Renz, one of Joe's students, found that did not get good translocation to root at later growth stages. Joe mowed and found that only 10% re-flowered but all put down basal leaves. They treated over the top of basal leaves and get good control. The mowing did not matter with Telar, but did with glyphosate.
- Using goats: \$15,000/acre to use goats. In San Diego have to bring in goats from N California -- comes with a herder 24 hours. Goats like manzanita and willows. Goats can be trained to eat one plant. (leafy spurge was the example)

Attendee: What surfactants do you use with telar?

Joe DiTomaso: R-11 is the surfactant of choice. Have found it has a higher safety

factor than listed on the label.

Joanna Clines: I have 3 or 4 times as much Klamathweed/ St. Johnswort (*Hypericum perforatum*) as 5 yrs ago. We have bugs, but I am still concerned. Have not used herbicide

- Mike Kelly: Garlon and glyphosate work on *H. canariensis*
- Joanna Clines: We introduced bugs, then had burn come through. This increased the plants then the bugs wiped it out. Now population has increased again. Think bugs are selective on high N content plant.
- Joe DiTomaso: I wonder if you are seeing an increase because bugs don't like the low N plants?
- Joanna Clines: I am also concerned because the bugs may eat natives. Mike Pitcairn says the bugs will work and we are just seeing the lag. I am concerned about sitting tight.
- Joe DiTomaso: plants can get resistant to other management techniques besides herbicides.
- Joanna Clines: I would like to get researchers involved. It looks like bugs are stripping one patch, but leaving a huge amount of others.
- Peter Warner thinks he is also seeing an increase in Klamath weed in NW, and does see bugs. He does not think the bugs are killing the plants.
- Joanna Clines: is seeing dense patches precluding natives, different from what she has seen in the past.
- Joe DiTomaso: thinks bugs are present, so that is not problem (bugs travel good distance).
- Joanna Clines thinks quantity not sufficient.

Mike Kelly has added pre-emergence to his tool box

- Landmark XP (Oust and sulfometuron) added glyphosate for just emerging plants. It did not affect coastal sage scrub shrubs that were already established, or *Distichilis*. Seeded a year later. Killing oats and mustard and was pleased with results
- Joe DiTomaso: says must be careful with perennial grasses.
- Mike Kelly: *Nassella* was OK.
- Joe DiTomaso: You must revegetate if you use pre-emergence compounds.
- Mike Kelly: I have used oxyzin (Surflan) close to vernal pools for grasses, not as effective on mustard. Stays on top of soil. Is effective on goat grass. Not registered in non-crop.

John Anderson: We are using a product called Outlook. That is registered for sod farms. Knocks out rattail fescue. Not registered non-crop. Also use Vista has no effect on grasses, sedges and rushes. Safe on adults and juveniles. Gets bristly oxtongue, *Erodium*, maretail. 24 hour residual.

John Knapp: Have you heard of Milestone working on fennel?

Joe DiTomaso: It works best on certain families: sunflower, legume, Polygonaceae. It should work at high rate, but I have had never used it.

Attendee: has anyone tried aminopyralid as preemergent for cheatgrass?

- Joe DiTomaso is setting up experiment.

Attendee: I am experimenting with velvetgrass with low rate of glyphosate, but getting too much overspray.

- Mike Kelly: You can buy a nozzle that has plastic cone, to prevent overspray
- Attendee: We have a large acreage.
- John Anderson: You can get air induction nozzles - put out by TeeJet (Teejet.com) that prevent overspray.

Adjourn.