

Oregon Cranberry workshop 2008

Selected handouts

Kim Patten

pattenk@wsu.edu , 360-642-2031

New Pesticide for 2008

- Insecticides for fireworm
 - Avaunt – Section 3
 - Delegate – Section 3
- Insecticides of weevil
 - Avaunt – Section 3
 - Actara – Section 3
- Herbicide
 - Callisto – section 3 (very soon)
 - Classic – Section 3 (mid summer)

WASHINGTON STATE UNIVERSITY



EXTENSION

World Class. Face to Face.

New insecticides for 2008

Trade Name	Rate	Label restrictions	Pollinator risk?	Efficacy
Avaunt	6 OZ/AC,	30 DAY PHI	None/ minor	Adequate
Assail	0.6 to 1.1 OZ/AC	7 DAY PHI	Moderately toxic	Adequate
Delegate	3-6OZ/AC	21 DAYS PHI	Moderately toxic	Adequate

Trade Name	Other insects control
Avaunt	adult weevils (no data on BVW, but assume it works)
Assail	Adult weevil? & tipworm?
Delegate	fruitworm, tipworm (no data on TW, but thrips are on the label)

Trade Name	Unknowns
Avaunt	Chemigation efficacy, efficacy on adult weevils
Assail	best rate, Chemigation efficacy, efficacy on adult weevil and tipworm
Delegate	Chemigation efficacy, efficacy on tipworm Product is suppose to be a big improvement over Success

Limitation on use of new insecticides

Insecticide	Worker reentry interval	Pre-harvest interval	Toxicity category*	Bee hazard rating*
Actara	12 hr	35/14 d	IV	I
Assail	12 hr	7 days	IV	III
Confirm	4 hr	14 days	IV	IV
Intrepid	4 hr	14 day	IV	IV
Avaunt	12 hr	28 day	III	III or ?
Delegate	4 hr	3 days	IV	II?
Success/Entrust	4 hr	7 day	IV	III

Bee hazard rating:

I Hazardous at any time on blooming crops and weeds,

II Not hazardous if applied in late evening except during high temperatures (directly toxic)

III Not hazardous if applied in evening or early morning except during high temperatures,

IV Not hazardous to bees at any time.

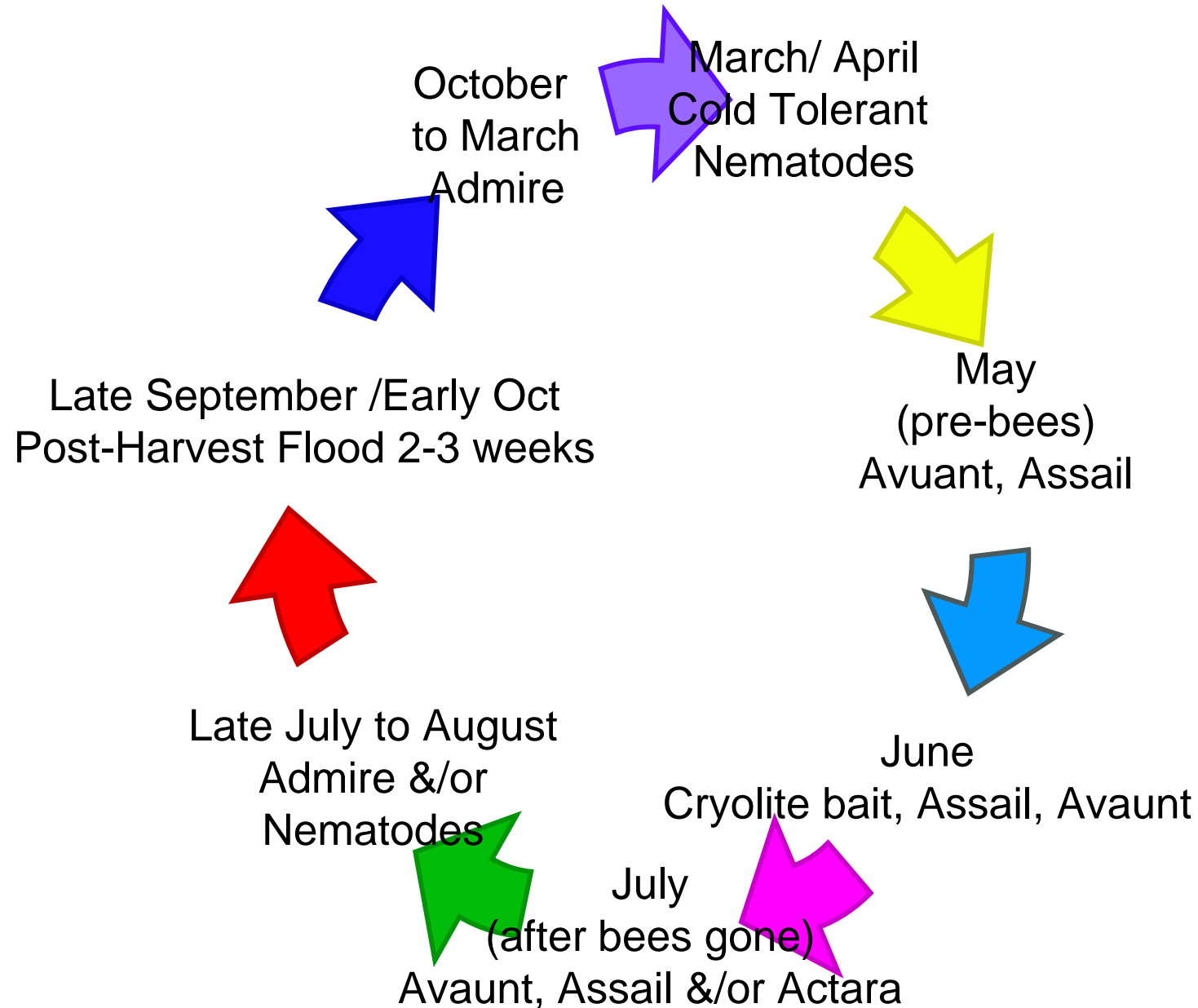
Fireworm control

Chemical	Rate(s)/ac	\$/gal	~\$/ac/application
Assail	0.6 to 1.1 oz/ac	\$13.67/oz	\$8 to 16
Delegate	3 to 6 oz/ac	\$6.60/oz	\$20 to 40
Avaunt	6 oz/ac	\$5.28/oz	\$32
Intrepid	12 oz/ac	\$2.10/oz	\$25
Entrust	3 oz/ac	\$3/oz	\$9

Weevil control

Chemical	Rate(s)/ac	\$	~\$/ac/application
S. carpocapae -	3 billion	\$148/billion	\$445
S. kraussei	2 billion	\$500/billion	\$1000
Nemasys H.	2 billion	\$412/billion	\$925
Admire Pro	4oz\$	\$6.67/oz	\$94
Assail	1.1 oz/ac	\$13.67/oz	\$16
Avaunt	6 oz/ac	\$5.28/oz	\$32
Actara	8 oz	5.21/oz	\$42
Cryolite Bait	30 lbs/ac	\$4/lb	\$120

Weevil control calendar



Callisto – improving performance

- Timing(s)
 - Pre-emergent: only for new planting, provides short-term control (<1/2 to 1 month)
 - Post-emergent
 - Annual broadleaves: maximum height of 5”
 - Perennial broadleaves:
 - Silverleaf- If too early reduced effectiveness, wait until first flush of growth is done (May), followed by second application whenever canopy warrants treatment

Callisto – Weed control

Weed	Comments
Annual grass	Poor control, tank mix with Select
Perennial grass	Varies by species, but poor season long control unless very early timing, tank mix with Select
Annual Broadleaves	Most all species controlled, but requires early timing, < 5" tall
Silver leaf	Timing important, several seasons required, less effective on well established stands
Lily	Poor control, suppression possible with early timings, high volume & pressure application?, better surfactants
Blackberries	Sensitivity varies by species, Long term control maybe feasible with some
Yellow weed	Poor control, suppress height and flowering, early timings important, COC w/ AMS or hybrid surfactant may improve efficacy
Clover	Poor control, use winter Stinger
Sorrel	Poor control, use winter Stinger

Callisto – Weed control

Weed	Comments
Lotus	Very sensitive to Callisto, but only effective if treated before canopy completely covers vines
Buttercup	Suppression only of established plants, use for seedlings
Willows	Control possible if timed at early emergence
Vetch	Sensitive, but late germinations mandates mid-season timings
Morning glory	Early post-emergence
Violet species	Sensitive, but may take several seasons to remove
Aster	Control in one season with two applications, don't apply too early

Surfactant Class	Product Name*	Manufacturer
non-ionic surfactant (NIS)	Activator 90 Penetrate II Triton Ag 98 X-77	United Ag Products Wilfarm Rhône-Poulenc United Ag Products
crop oil concentrates (COC)	Agri-Dex (99:1) Crop Oil Plus (83:17) Prime Oil (83:15)	Helena Wilfarm Terra
nitrogen-surfactant blends	Cayuse Plus (surfactant + AMS) Chaser (surfactant + 28% N) Dispatch (surfactant + 28% N) Patrol (surfactant + 28% N)	Wilfarm Terra United Ag Products Helena
esterified seed oils	Hasten Meth-Oil MSO Sun-it II	Wilfarm Terra United Ag Products Cyanamid
organo-silicates	Sylgard 309 (straight silicone) Silwet L-77 (straight silicone) Kinetic (silicone/surfactant blend) Herbex (silicone/surfactant blend)	Wilfarm United Ag Products Helena American Colloid

Stickers, adjuvant, spreaders, activators –
 What do I use, for what do I use it with and
 when do I use it?

Adjuvant	Example	Use
Sticker	Bond, Nufilm, Reguard	Insecticides, fungicides
Surfactant -NIS	X-77, Li700, R11	post-emergent herbicides
Hybrid	Kinetic, Syltac	post-emergent herbicides
Surfactant -Organosilicone	Silwet, Silgard	post-emergent herbicides
Crop Oil Concentrate	Agridex, Moract	post-emergent herbicides
Vegetable Seed Oil	Hasten	post-emergent herbicides
NIS with Nitrogen	Class act, Bronc Total	post-emergent herbicides
Buffer agent	Climb, Cut-Rate	Modify spray tank water pH up or down

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Adjuvant	Considerations for use	Rate
Sticker	Chemigation of certain fungicide	2 pts/500 gallons
NIS	Fine for most herbicide	0.25% v/v
Hybrid	Usually get better activity on tough weeds, but can be too hot for cranberries.	0.1 %
Organo-silicone	Could be good to use on tolerant weeds, winter or drought conditions	0.1%
Crop Oil Concentrate	Recommended for grass herbicides & Callisto	0.1 to 0.5%
Vegetable Seed Oil	Generally not required, but some herbicides specify. Can be hot on the crop	0.25%
NIS with Nitrogen	Fertilizer increase effectiveness of many herbicides (see label). Make your own or buy ready made.	0.25%
Buffer agent	pH of water too low or high for herbicide	0.1%

Stickers, adjuvant, spreaders, activators –
 What do I use, for what do I use it with and
 when do I use it?

Adjuvant	Considerations for use
NIS	If too hot for crop oil or tender conditions during cranberry growth use low rates of an NIS
Hybrid	Can improve Callisto performance on tough weeds
Crop Oil Concentrate	Minor variations in phytotoxicity between products, low rates on hot days,
Vegetable Seed Oil	Can improve Callisto performance on tough weeds
NIS with Nitrogen	Can improve Callisto performance on tough weeds
Buffer agent	If efficacy is problematic it could be an issue with some herbicides. Test your water.

Herbicides affected by Water pH

Herbicide	pKa	Solubility @ pH 5	Solubility @ pH 7	Optimum pH
Callisto	3.12	2,200	15,000	>7
Poast	4.16	257	4,390	>7

- This suggest that efficacy of weak acid herbicides (Callisto, Poast, Select) Could be enhanced by adjusting pH to 7 or greater.
- There is, however, very little data showing significant improvement of efficacy at higher pHs.
- In water with high salt content, there can be precipitates at higher pH. Poast may in fact work better at low pH if there is salt antagonism.
- Growers with problems achieving efficacy with these types of herbicides should test water pH and hardness.
- Surfactants that raise pH (Wilbur Ellis – Climb, Renegade)
- The new SU herbicide scheduled for registration this summer is very pH sensitive.

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WSU Variety trials – 2003 planting

Variety	bbl/ac				Mean fruit wt (g) 06 &07	% rot in 2007		BRIX 2007
	05	06	07	05+06+07		Harvest	Storage	
Crimson Queen	85	277	347	709	1.7	8	14	8.1
Mullica Queen	23	204	252	479	1.8	7	4	8.8
CNJ93-9-42	61	187	451	699	1.4	10	7	8.3
BE	150	217	383	750	1.2	3	2	8.3
AR	16	223	290	529	1.6	9	4	8.7
Bain Favorite	46	178	212	436	1.8	15	9	8.1
Pilgrim	257	202	327	786	1.7	5	2	8.9
Stevens	3	48	209	260	1.4	3	2	9.3

2008
cranberry pest
management guide
EB0845E

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