



New Pesticides and WA Research Update

Sam Tochen

Ag. Scientist-WA
Ocean Spray Cranberries

2021 PNW Cranberry Congress

Quick disclaimer and reminder

- Sorry, Canadians
- For all products, read the label!
 - Make sure labeled for your region
- Check with your handler re: further restrictions

Fungicides

- Nothing new of note
 - 2 products coming down the pipeline



Herbicides

- That one pre-emergent with promising moss results: still in IR-4 process
- Sulfentrazone? (group 14; a different pre-emergent, to be applied before cabbagehead)
 - No Zeus XC in OR/WA! 24(c) in MA and NJ ONLY
 - Canada-Authority 480

Canada ONLY

AUTHORITY® 480 HERBICIDE

COMMERCIAL

(Agricultural)

**Suspension Concentrate
Flowable**

For Use on Chickpeas, Field Pea, Flax, Sunflower, Soybeans, Wheat (Spring and Durum), Tame Mustard, Asparagus, Fababean, Mint, Strawberry, Horseradish, Brassica, Head and Stem (Crop Group 5-13) (Transplants only), Brassica, Leafy Greens (Crop Sub-Group 4-13b), Tomato (Transplants only), Tree Nuts (Crop Group 14), Grapes and Berries (Crop Group 13-07) and Apples

ACTIVE INGREDIENT: Sulfentrazone..... 480 g/L
Contains Petroleum Distillate

Contains o-phenylphenol (present as sodium o-phenylphenol tetrahydrate) at 0.032% as a preservative

REGISTRATION NUMBER 29012
PEST CONTROL PRODUCTS ACT

READ THE LABEL AND BOOKLET BEFORE USING



CAUTION

POISON

Use Rate (mL/ha)	Weeds controlled
219	Kochia
292	Above weeds plus: Redroot pigweed Lamb's-quarters Wild buckwheat Eastern black nightshade Common waterhemp Smooth crabgrass Large crabgrass Yellow woodsorrel Common groundsel Cleavers (suppression) Powell pigweed Common purslane



Lower than US

PHI 3 days

Ground application only; must be watered in w/min. 18 mm water; Label language not great (avoid green tissue, so before break dormancy)

What about OR/WA??

- Picol



Name ^	EPA/State Reg. N	Inte	Ingredients	Resistance Co	Concentrations	Pesticide Types	Registrant Name	Labels
SULFENTRAZONE 39.6% SC [19	85678-59	C...	SULFENTRAZONE	E	39.6%	HERBICIDE	REDEAGLE INTERNATIONAL L...	WA OR
WILLOWOOD SULFEN 4SC	87290-59	C...	SULFENTRAZONE	E	39.6%	HERBICIDE	WILLOWOOD, LLC -USA-	OR
WILLOWOOD SULFENTRAZONE 4SC [28	87290-59	C...	SULFENTRAZONE	E	39.6%	HERBICIDE	WILLOWOOD, LLC -USA-	WA OR

- According to registrant-Helena (if you can find it*):

GROUP 14 HERBICIDE



ACTIVE INGREDIENT:
Sulfentrazone 39.6%

OTHER INGREDIENTS: 60.4%

TOTAL: 100.0%

Contains 4 pounds of active ingredient per gallon.

BERRIES

berry; bearberry; bilberry; blackberry (including Andean blackberry, arctic blackberry, bingleberry, black satin berry, blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, vergreen blackberry, Himalayaberry, hullberry, lavacaberry, loganberry, lowberry, Lucretiaberry, mammoth blackberry, nectarberry, Northern dewberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, Southern dewberry, tayberry, youngberry, zarzamora, and cultivars, varieties and/or hybrids of these); blueberry, o currant; buffaloberry; che; Chilean guava; chokecherry; cloudberry; cranberry; cranberry, highbush; currant, black; barberry; gooseberry; honeysuckle, edible; huckleberry; jostaberry; Juneberry (saskatoon berry); kiwifruit, fuzzy; p; mountain pepper berries; mulberry; muntries; native currant; partridgeberry; phalsa; pincherry; raspberry, black fra berry; sea buckthorn; serviceberry; strawberry; wild raspberry; cultivars, varieties, and/or hybrids of these)

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

*stay tuned for more details?

Insecticides

- Danitol 2.4 EC Spray (fenpropathrin): US only
- Rimon 0.83 EC (novaluron)
- Verdepryn 100SL (cyclaniliprole) (IRAC 28): US only
- Exirel (cyantraniliprole) (IRAC 28)

*watch for handler restrictions

Danitol 2.4 EC (US only)

- Fenpropathrin (IRAC 3)
- Pyrethroid-UV sensitive (?)
- **Restricted use pesticide** (get your license)
 - Highly toxic to aquatic organisms!
- Toxic to pollinators
 - I'd aim for last pre-bloom app 2 weeks before bees
- Broad spectrum
- Rate: 10 2/3 – 21 1/3 fl oz/a
- Rotate other chemistries to avoid resistance

- Not the pyrethroid you wanted to see; that's been pushed back until March 2021

GROUP	3	INSECTICIDE
--------------	----------	--------------------

VALENT®

RESTRICTED USE PESTICIDE
DUE TO TOXICITY TO FISH AND
AQUATIC ORGANISMS.

For retail sale to and use only by
Certified Applicators, or persons
under their direct supervision, and
only for those uses covered by the
Certified Applicator's certification.



(INSECTICIDE-MITICIDE)

Active Ingredient	By Wt
Fenpropathrin*	30.9%
Other Ingredients	69.1%
Total	100.0%

*alpha-cyano-3-phenoxybenzyl 2,2,3,3-tetramethylcyclopropanecarboxylate
Contains 2.4 pounds fenpropathrin per gallon.
Contains Petroleum Distillates
EPA Reg. No. 59639-35
EPA Est. 5905-GA-1©, 39578-TX-1©
Superscript is first letter of lot number.

Rimon 0.83 EC



- Novaluron (IRAC 15)
- New resistance class
- Insect growth regulator (IGR)
 - App timing important, target small instars
- Rate: 12 fl oz/a (US)
 - 677-835 mL/ha (CA)

Insecticide for use on Beans, Berries (Low-Growing), Bushberries, Cucurbit Vegetables, Fruiting Vegetables, Head and Stem Brassica, Pears*, Pome Fruits, Potatoes / Sweet Potatoes, Stonefruits, Strawberry, Sweet Corn

*Not Registered for Use in California

INGREDIENTS:	% BY WT.
ACTIVE INGREDIENT:	
Novaluron: 1-[3-chloro-4-(1,1,2-trifluoro-2-trifluoro-methoxyethoxy) phenyl]-3-(2,6-difluorobenzoyl)urea*	9.3%
OTHER INGREDIENTS:	90.7%
TOTAL:	100%

*Contains 0.83 lbs. novaluron per gallon.

Read the label before use

Verdepryn 100SL (US only)

- Cyclaniliprole (IRAC 28)
- Diamide-same as Altacor
- Rate: 8.2 – 11 fl oz/a
- Not pollinator friendly
 - Caveat: may apply at night during bloom with low rate
- Allows 3 app IRAC 28 insecticides
 - Rotate with other IRAC groups

GROUP 28 INSECTICIDE



VERDEPRYN™ 100SL
INSECTICIDE

ACTIVE INGREDIENT: Cyclaniliprole*	9.17%
OTHER INGREDIENTS:	90.83%
Total	100.0%

*3-bromo-N-[2-bromo-4-chloro-6[[[(1-cyclopropylethyl)amino]carbonyl]phenyl]-1-(3-chloro-2-pyridinyl) -1H-3-pyrazole-5-carboxamide

Contains 0.83 pounds Cyclaniliprole per Gallon (100 grams per liter)

KEEP OUT OF REACH OF CHILDREN
CAUTION

See side panel for additional precautionary statements.
Read entire label carefully and use only as directed.

Distributed by:



SummitAgro^{USA}

Summit Agro USA, LLC
240 Leigh Farm Road, Suite 215
Durham, NC 27707

EPA Reg. No. 71512-34-88783 EPA Est. No. 1022-TN-001

Exirel



CYANTRANILIPROLE	GROUP	28	INSECTICIDE
------------------	-------	----	-------------

WITH CYAZYPYR® active

- Cyantraniliprole (IRAC 28)
- Another diamide
- \$\$\$\$
- Toxic to pollinators
- Rate 10-20.5 fl oz/a
 - 750-1500 mL/ha

For foliar applications to brassica (leafy, and head and stem), bulb, cucurbit, fruiting, leafy green, leaf petiole, legume, root and tuberous and corm vegetables; commercially grown greenhouse cucumber, eggplant, pepper and tomato; cotton, oil seed crops; strawberries; bushberries; caneberries; coffee; low growing berries; peanuts; soybeans; citrus, pome, and stone fruits; tree nuts; and tobacco for pest management of sucking and chewing insects that can vector certain plant diseases, aiding in optimization of the crop's potential.

<i>Active Ingredient</i>	<i>By Weight</i>
Cyantraniliprole 3-bromo-1-(3-chloro-2-pyridinyl)-N-[4-cyano-2-methyl-6-[(methylamino) carbonyl]phenyl]-1H-pyrazole-5-carboxamide	10.20%
<i>Other Ingredients</i>	89.80%
TOTAL	100.00%

EXIREL® insect control is a suspoemulsion (oil in water emulsion). SHAKE WELL BEFORE USING.

Quick chat on insect resistance management

- Several to choose from for insecticides
 - Love to see this
 - Hate to lose something due to resistance forming

IRAC MoA Class	Insecticide
1A -carbamates	Sevin (carbaryl)
1B -OPs	Diazinon, Lorsban (chlorpyrifos), Orthene (acephate)
3 -pyrethroids	Danitol (fenpropathrin)
4A -neonics	Actara (thiamethoxam), Admire (imidacloprid)
5 -spinosyns	Delegate (spinetoram)
15 -IGR	Rimon (novaluron)
18 -IGR	Intrepid (methoxyfenozide)
22 -oxadiazines	Avaunt (indoxacarb)
23 -tetrionic acids	Movento (spirotetramat)
28 -diamides	Altacor (chlorantraniliprole), Exirel (cyazypyr), Verdepryn (cyclaniliprole)

A closer look

Any rotation of the following:

- Orthene
- Lorsban
- Diazinon



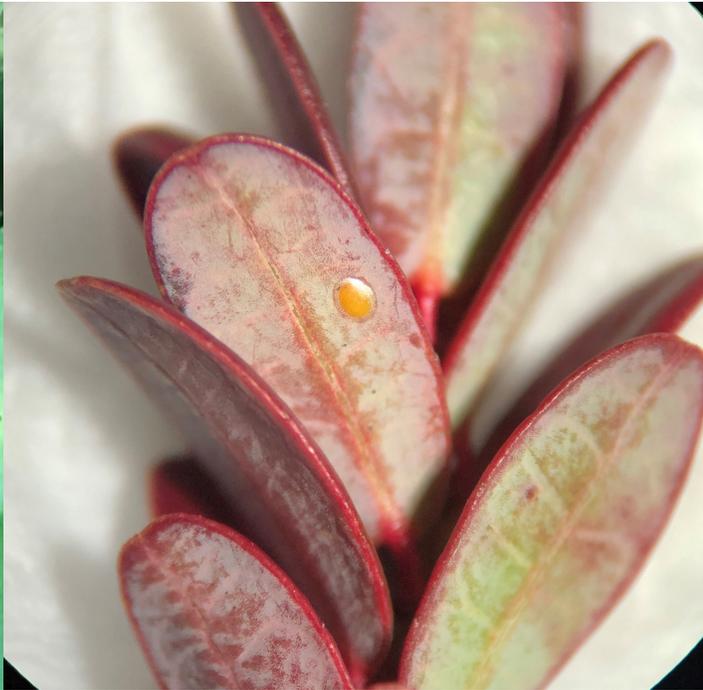
is not a rotation (all 1B)
(OP resistant sparg in MA)

Special mention

- Sevin (1A)

IRAC MoA Class	Insecticide
1A-carbamates	Sevin (carbaryl)
1B-OPs	Diazinon, Lorsban (chlorpyrifos), Orthene (acephate)
3-pyrethroids	
4A-neonics	Actara (thiamethoxam), Admire (imidacloprid)
5-spinosyns	Delegate (spinetoram)
15-IGR	Rimon (novaluron)
18-IGR	Intrepid (methoxyfenozide)
22-oxadiazines	Avaunt (indoxacarb)
23-tetronic acids	Movento (spirotetramat)
28-diamides	Altacor (chlorantraniliprole), Exirel (cyazypyr), Verdepryn (cyclaniliprole)

Poll: do you rotate your pesticides?



Why am I still talking about this?

- Resistance development is a concern with pyrethroids
- Watch application intervals and rotate with a different IRAC class
- Let's not lose this new-to-us class

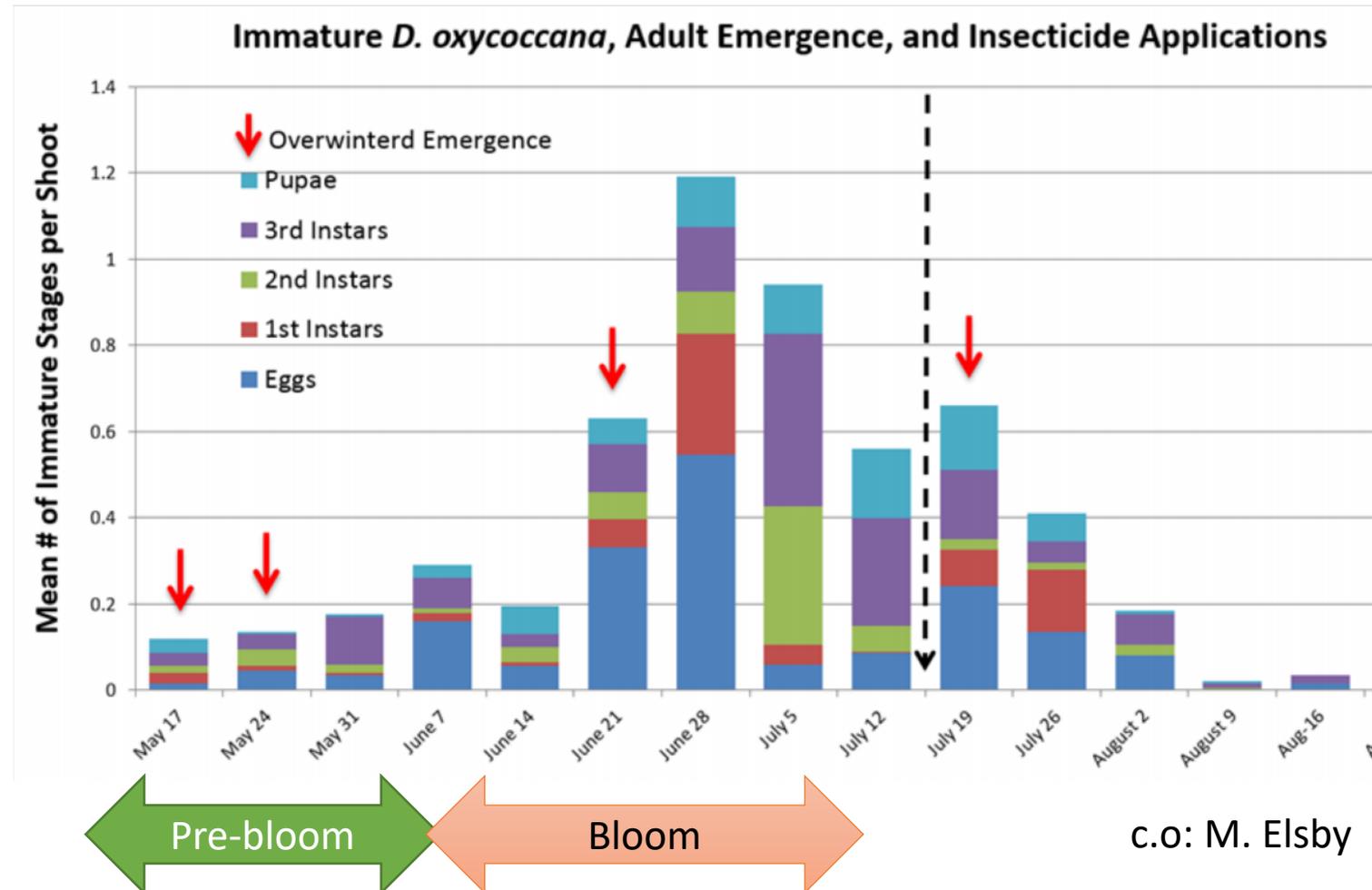
IRAC MoA Class	Insecticide
1A-carbamates	Sevin (carbaryl)
1B-OPs	Diazinon, Lorsban (chlorpyrifos), Orthene (acephate)
3-pyrethroids	Danitol (fenpropathrin), that cheap one y'all want
4A-neonics	Acetate (imidacloprid), Admire (imidacloprid)
5-spinosyns	Delegate (spinetoram)
15-IGR	Rimon (novaluron)
18-IGR	Intrepid (methoxyfenozide)
22-oxadiazines	Avaunt (indoxacarb)
23-tetronic acids	Movento (spirotetramat)
28-diamides	Altacor (chlorantraniliprole), Exirel (cyazypyr), Verdepryn (cyclaniliprole)

Brief WA 2020 research update

- Danitol for pre-bloom adult tipworm control
 - Grower field trial
 - Rough and preliminary (to be expanded upon in 2021)

Why pre-bloom?

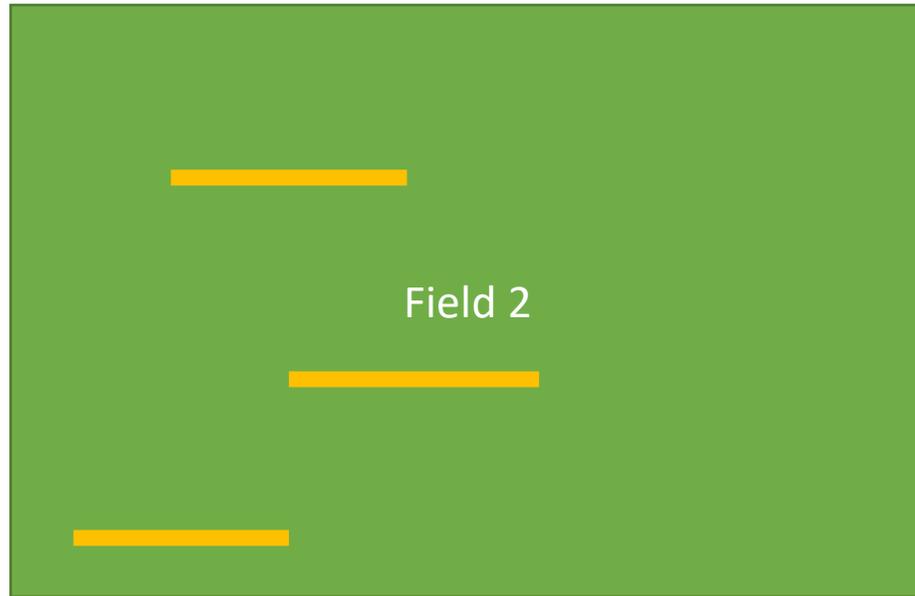
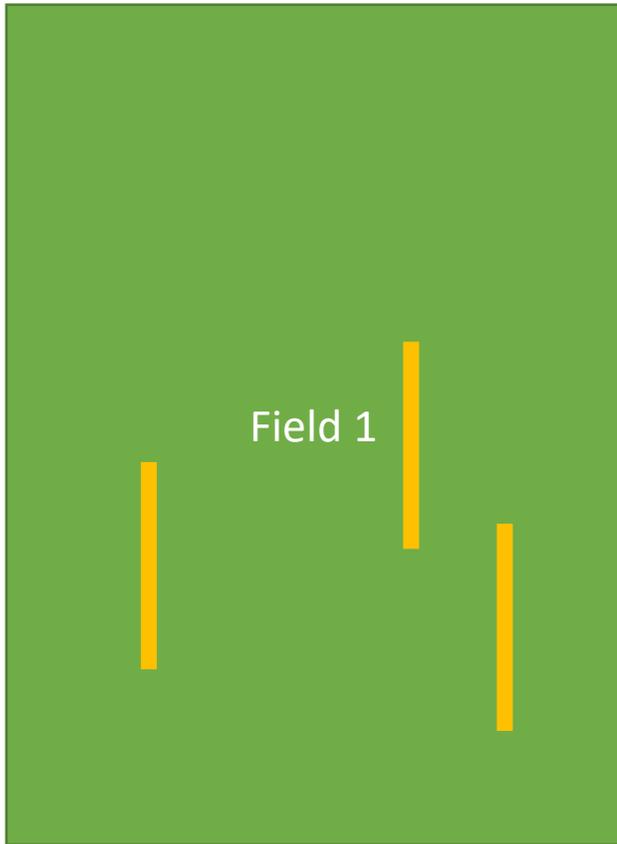
- Adults emerge early, populations build over season
- Movento post-bloom only
- Handler restrictions w/early varieties
- Other chemistries limited in efficacy



Set-up

- Two beds under same management (both w/2019 Movento app)
 - Field 1 received 20 fl oz/a Danitol
 - Field 2 received 2 qts/a Diazinon (grower standard practice)
- Three “bug-vac” transects/field
- Three sampling dates
 - Before treatment, 7 days after treatment, and 35 days after treatment

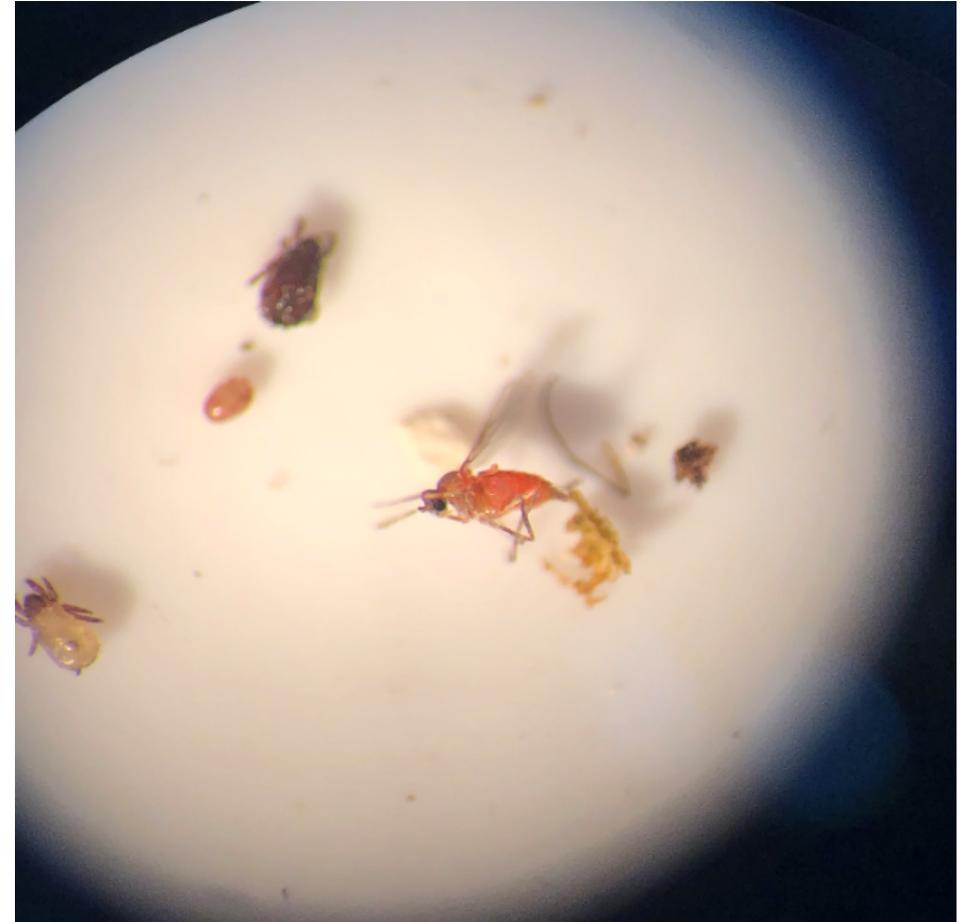
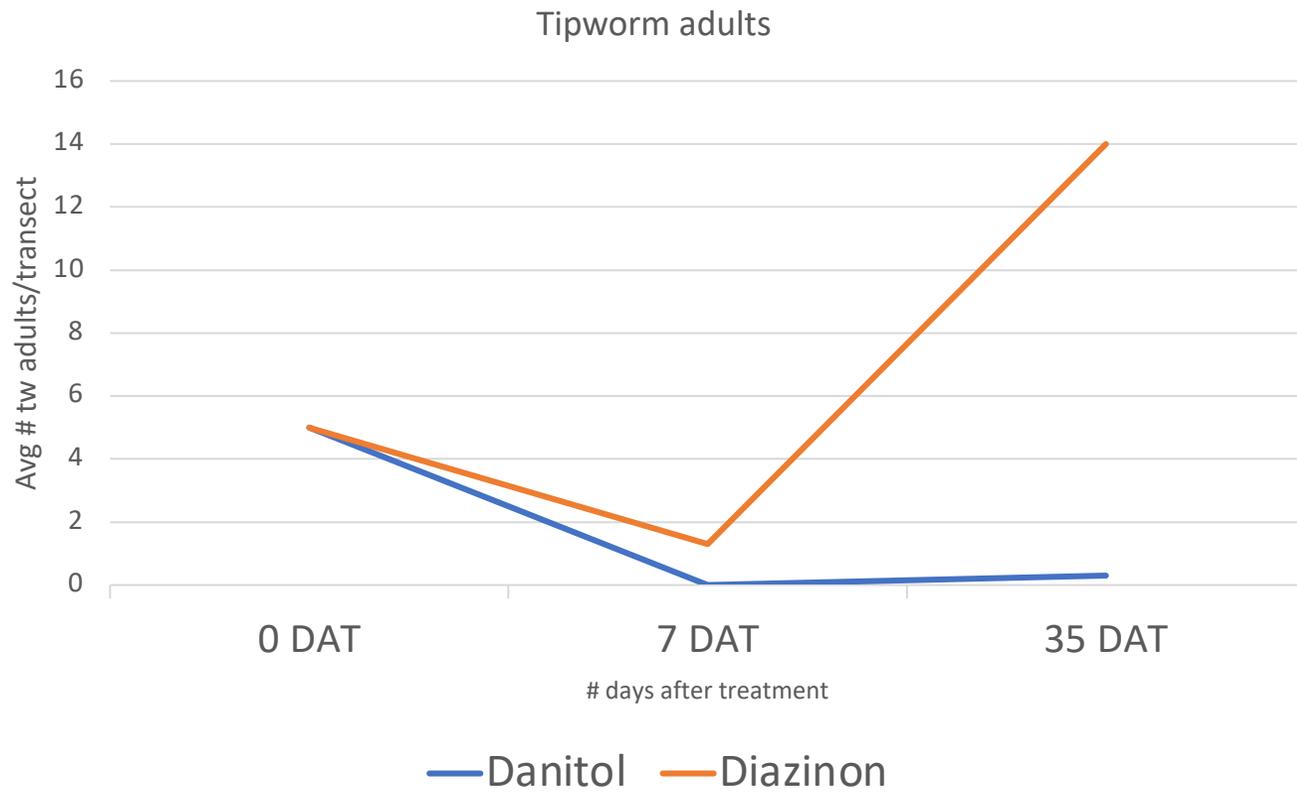
Sampling



Yellow line=transect; 25 ft (25 suctions)



Results



Take-away

- Danitol looks promising as a pre-bloom spray
- This is VERY PRELIMINARY
- No data re: efficacy against larval stages
 - Important as stage that causes damage **➔**
- More research needed to determine rates/timing





Questions?