

2007

Research Update Meeting 2007 - Cranberry Insects 2006 Update

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Cranberry Insects: 2006 Update
Anne Averill/Marty Sylvia

Outline

1. Sampling
2. Reduced-risk compounds
3. Natural enemies
4. Cultural controls
5. Winter moth update

1. Sampling

- Pest status
 - presence
 - population size

Sampling: blackheaded fireworm

- First generation (May)
 - Larval infestations
- Second generation (June)
 - Pheromone trap counts

May: blackheaded fireworm sampling

Visual observations vs. sweep sets

	<i>Observation</i>			<i>Sweep net</i>	
<i>Date--site</i>	<i># of 5 min sets</i>	<i>total # larvae</i>		<i># of sweep sets</i>	<i>total # larvae</i>
5/17--site 1	12	1		14	31
5/25--site 2	9	1		11	8
5/25--site 3	14	17		6	3
5/30--site 2	8	0		10	3

May: blackheaded fireworm sampling
 Visual observations vs. sweep sets

	<i>Observation</i>		<i>Sweep net</i>	
<i>Date--site</i>	<i># of 5 min sets</i>	<i># of sets with 0</i>	<i># of sweep sets</i>	<i># of sets with 0</i>
5/17--site 1	12	11 (92%)	14	3 (21%)
5/25--site 2	9	8 (88%)	11	5 (45%)
5/25--site 3	22	6 (27%)	6	3 (50%)
5/30--site 2	8	8 (100%)	10	8 (80%)

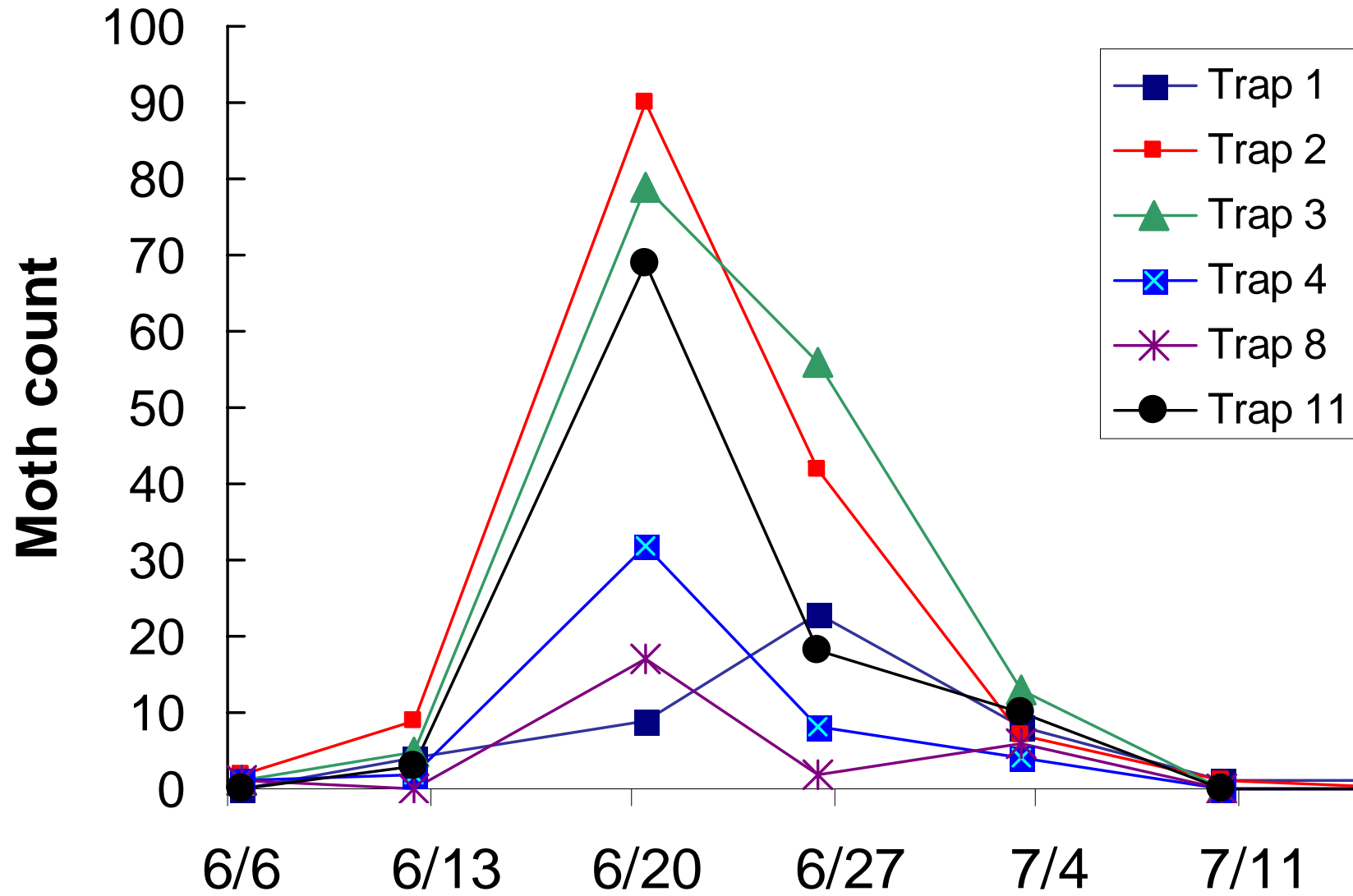
Sampling: bottom line blackheaded fireworm

- First generation (May)
 - Preliminary assessment>>keep this in mind
 - Per minute effort, sweep-net sampling for both small and large larvae appears more efficient

June: blackheaded fireworm sampling

Pheromone trap captures

- In Wisconsin, captures vary widely among traps
- True in Massachusetts?
- Trap placement test at 4 bogs
 - Locations
 - bog edge every 20 m
 - bog center
 - uplands
 - high and low
 - Comparison among traps
 - Peak captures
 - Total captures



June: blackheaded fireworm sampling

Pheromone trap captures

- High variation in:
 - Total numbers/trap
- Low variation in:
 - Timing of peak of captures
 - Edge vs. center
- Unlike cranberry fruitworm, essentially no off-bog activity

Sampling: cranberry fruitworm and weevil

- New trap development
- Collaboration
 - Rutgers: Cesar Rodriguez-Saona
 - Isolation of attractive host-plant volatiles



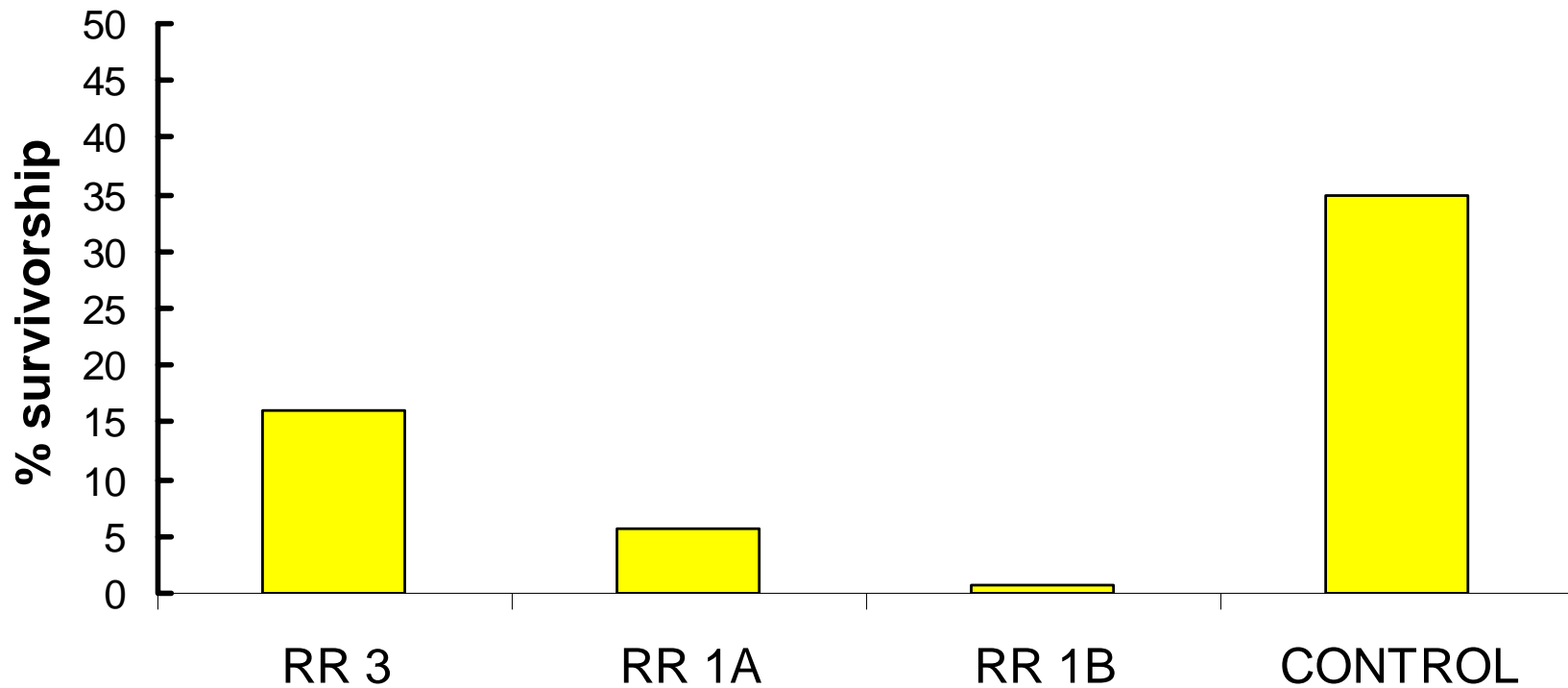
2. Reduced-risk (RR) insecticides

- Definition
- Modes of action
 - Synaptic and axonic poisons
 - Low human toxicity
- Advantages
 - Fit in cranberry pest management
 - Avoid development of insecticide resistance by alternation chemistries

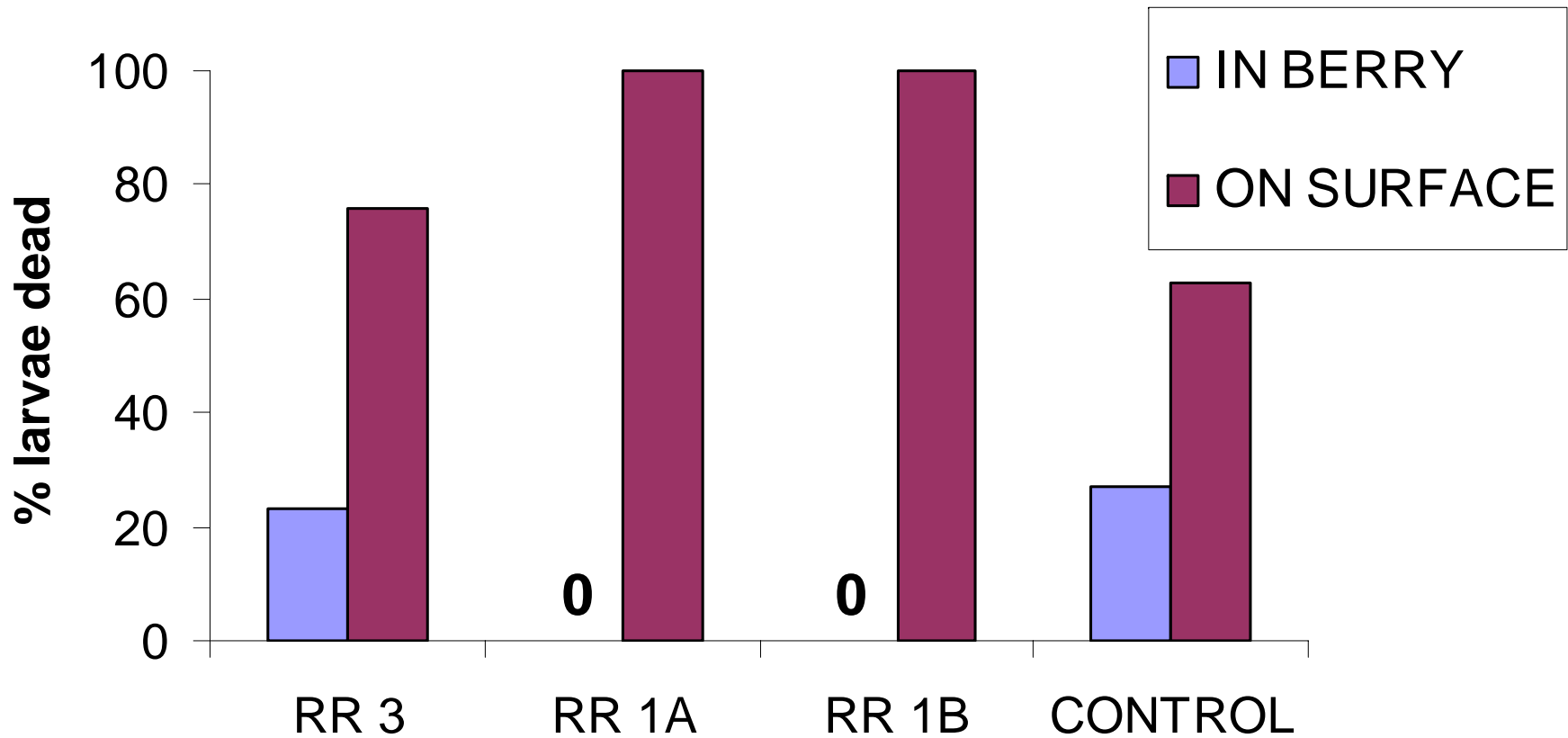
Reduced-risk numbered compounds in screening program

- NEO A—widely used neonicotinoid
- RR 1A—moving forward
- RR 1B—test sample arrived in August, same mode of action as RR1A
- RR 2—way, way down the line
- RR 3—maybe not as promising

Lab screen: cranberry fruitworm larval survivorship



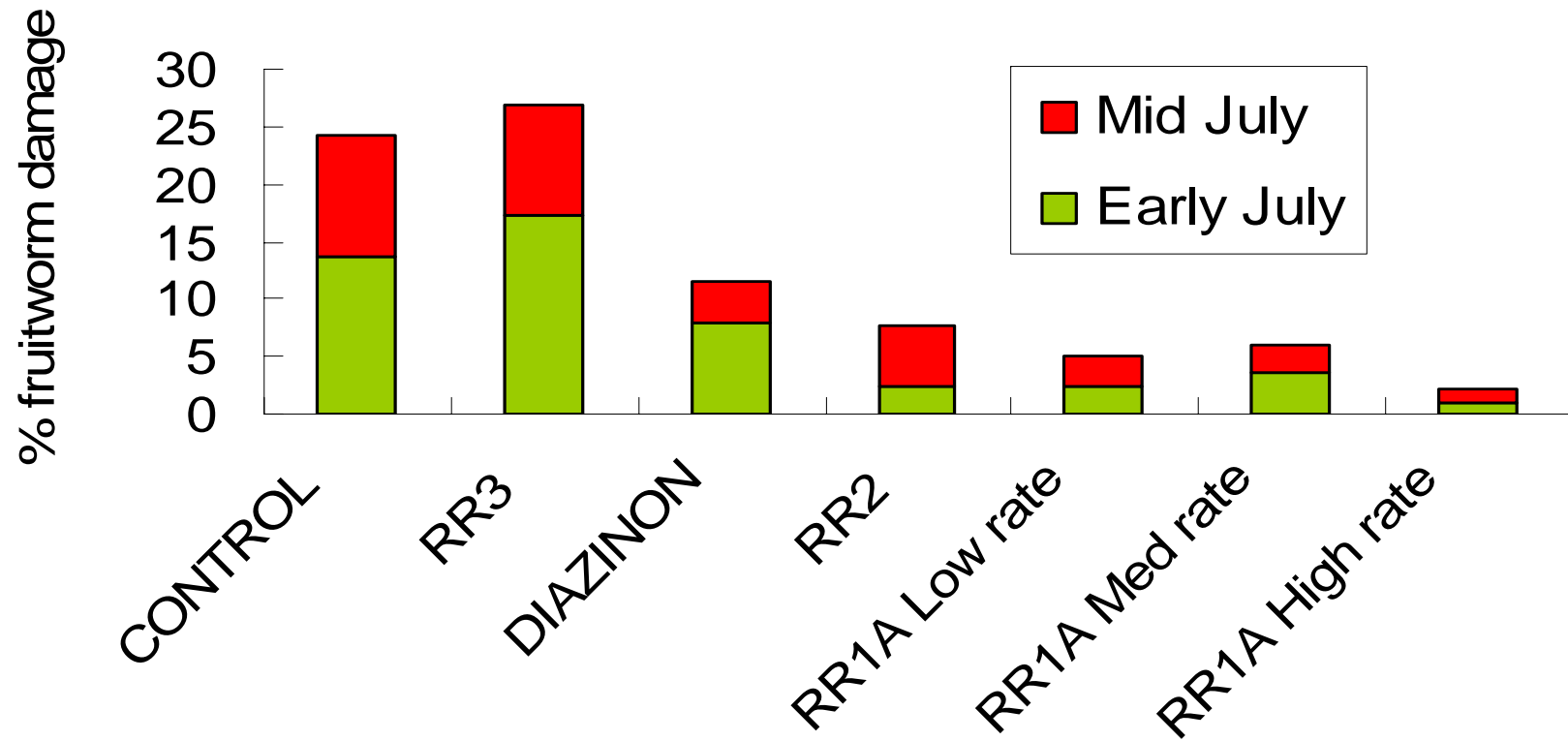
Lab screen: cranberry fruitworm corpse sites





DEAD FRUITWORM LARVAE

Field screen: cranberry fruitworm damage after single spray (7 July 06)



Cranberry weevil

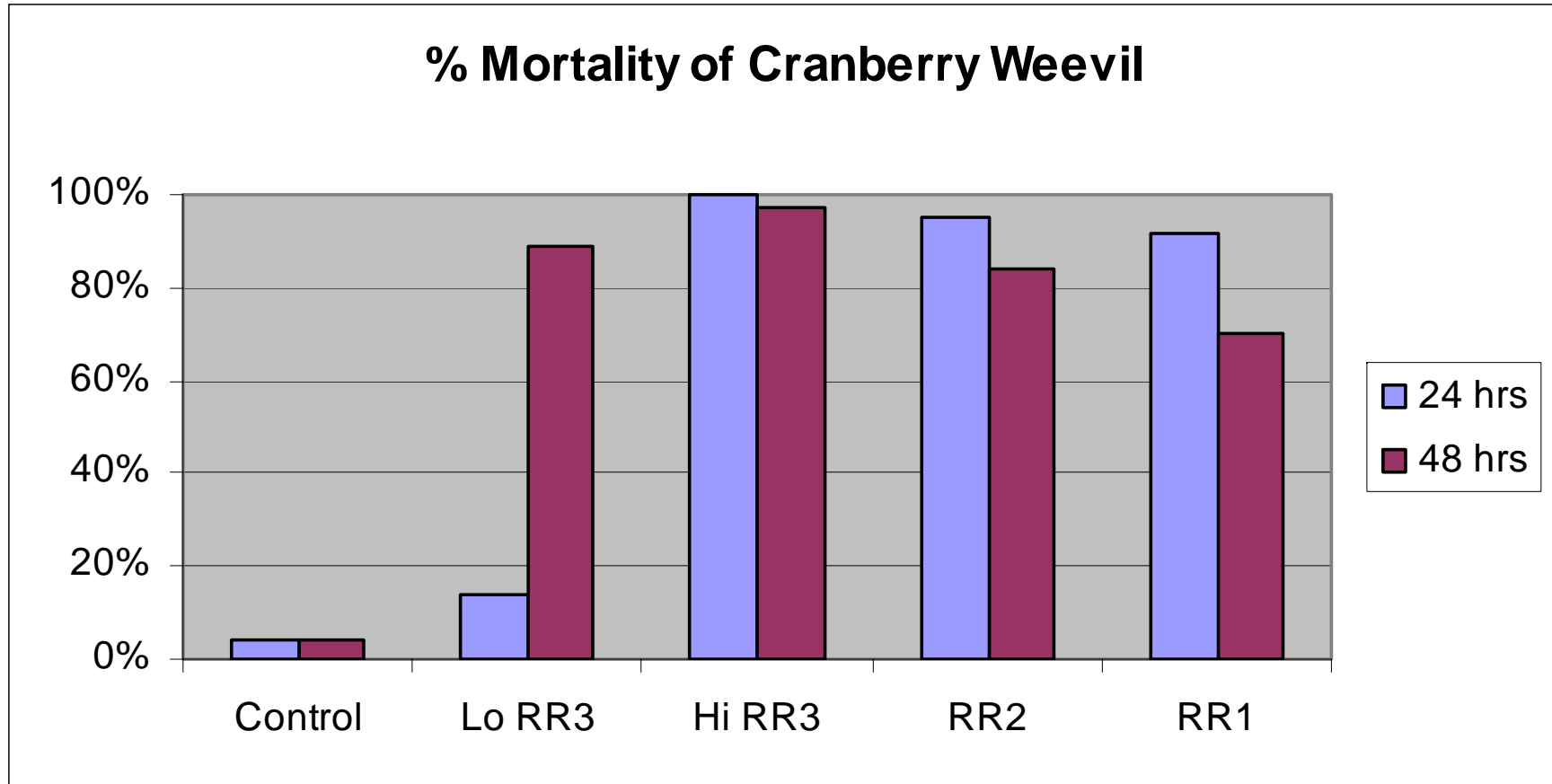
- Update on management options
 - Actara currently showing excellent control
 - Avaunt (spring population only) expected 07-08
 - Another new compound moving through registration, currently at EPA
- Lab screening
 - RR2, RR1A, RR3 all show activity

Cranberry weevil

- Actara
 - Treatment between May 15 and June 15
 - Reduced rates 2 and 3 oz. work fine
 - Highly toxic to bees

- Don't wait too long to treat
 - Weevil eggs laid
 - Bees arrive

Cranberry weevil lab screen

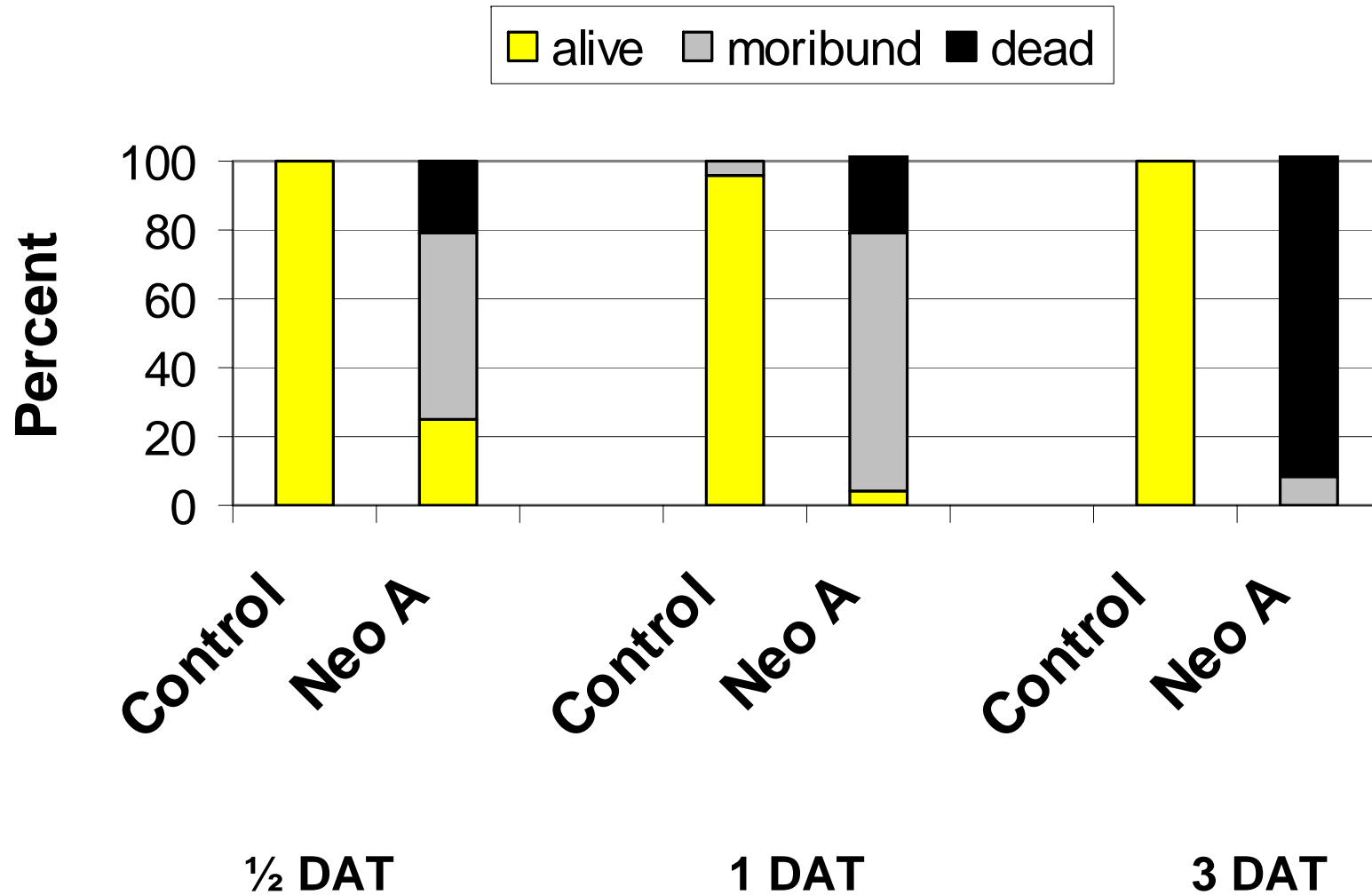


Red-headed flea beetle

- Increased number of reports
- Possible explanations
- Evaluation of RR compound (NEO A)



Lab trial: Flea beetle



3. Natural enemies

- Blackheaded fireworm
 - Populations appear unregulated
 - Field collections of larvae
 - Difficult to rear
 - Parasitism low
 - Atypical of leafrollers

4. Cultural controls

- Update: survivorship of overwintering cranberry fruitworm
- What is the effect of lowered sanding?
 - Hibernacula treatments
 - +sand; +trash, +both
 - Hibernacula formation
 - Hibernacula overwintering cover

5. Winter moth update

- Observed regularly in cranberry
- Spread documented elsewhere in state



Flightless female

Workshop title:

Cranberry Management Update

Location: Plymouth Radisson

Date: 1/31/07

Time: 8AM-4PM

Session Number: UMA 2007-9

4 contact hours, category 30