

2016 Pesticide Review

A University of Wisconsin
Perspective

Jack Perry

Univ of Wisconsin - Horticulture

Wisconsin Cranberry Pesticide Research Team

Colquhoun - weeds
Mcmanus- diseases
Guedot - bugs
Perry - all



Too Much Free Time at Harvest ??



Fungicides & Diseases

2016 Disease Review

***2016 was a
year with
Intense late
season disease
problems***

- why ???
- normal April then cool / wet May
- delayed season temperatures

2016 Fungicide Trials

Objective

***Evaluate registered fungicides &
4 candidate products for
early rot, fruit rot control and
cottonball***

2016 Cranberry Fungicides

Bravo, Equus, Echo
Evito 4SC, Aftershock
Dithane 75DF
Indar 2F
Abound 2.08SC
Proline 3SC

Tavano/Oso 5%SC

Regalia 5%EC

4 Exp Fungicides

8 Locations

- 3 trials for fruit rot
- 3 trials for early rot
- 3 trials - cottonball

What Works

	Early Rot	Fruit Rot
Bravo	++	++
Dithane	+	++
Abound	++	++
Indar	+++	+
Abound + Indar	+++	+++
Proline	+++	+++
Evito	++	++
<i>Tavano / Oso</i>	+	++
<i>Regalia</i>	+	++

What Works

	Cottonball
Tilt/Orbit	+++
Abound	++
Indar	+++
Abound + Indar	+++
Evito	+++
Proline	+++
Regalia	++
Tavano/Oso	+
Exp Fungicide #1	+++
Exp Fungicide #2	+++

Two New Fungicides

Quilt Xcel 2.2L

package mix mix of Quadris = Abound + Tilt/Orbit
22 oz/acre, Syngenta = \$30/acre - lower rates ?

Kenja 3.3SC

15.5 oz/acre, Summit Agro USA

The New Fungicides

	Early Rot	Fruit Rot	Cottonball
Proline	+++	+++	+++
Quilt Xcel	+++	+++	+++
Kenja	0	0	0
Oso	+	+	0
Regalia	++	++	+

2016 Cranberry Fungicide Trials

Thinking about reducing fungicide applications to save \$\$

2 applns vs 1 appln vs 0 applns

Bravo, Abd + Ind, Proline, Regalia

❖ *4 fruit rot trials*
heavy disease pressure

- **Bravo, Proline, Abound+Indar**
in 2016 - 2 app +++> 1 app
in 2015 – 2 app +> 1 app
- **Regalia needed 2-3 apps**

Decision Factors

- 1) April, May – warm or cool, wet or dry
- 2) Disease history of the bed

➤ **Best** - 2 applications - “wiggle-room”
some latitude in timing

➤ **Risky** - 1 application - timing is
critical; no “wiggle”

➤ **Really Risky** - 0 applications

2016 Cranberry Fungicide Trials

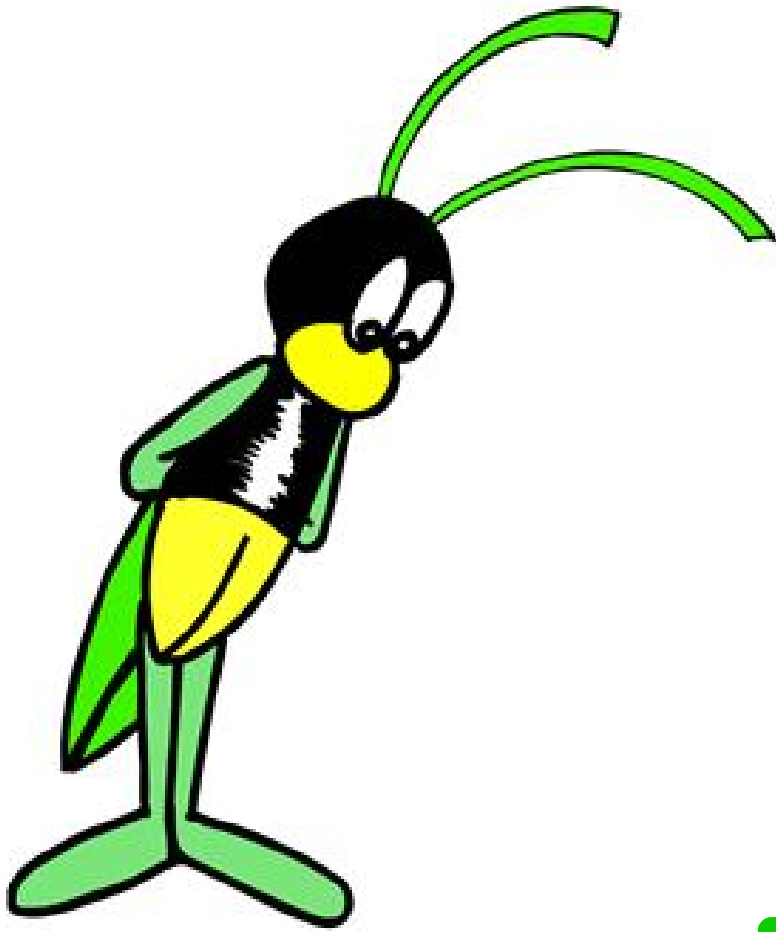
Summary

- Some cottonball problems
- Lots of early rot and fruit rot
- Bravo, Abound, Proline, Abound + Indar and Evito worked for fruit rots
- Two candidate fungicides shows much promise
- Value in alternating fungicides ??
 - no – performance
 - yes – IPM / resistance avoidance

2016 Cranberry Fungicide Trials

What to do in 2017 ?

- 1) Continue early rot, fruit rot & cottonball trials**
 - a) continue with registered products**
 - b) more experimental fungicides**
- 2) Evaluate one application vs two applications**
- 3) Any value to using surfactants with fungicides ??**



"Bugs"
&
Insecticides

2016 Insect Review

- ✓ **Fruit worms were present & required control measures**
- ✓ **Fireworms were isolated problems**
- ✓ **Tipworms were scarce**
- ✓ **Flea beetles were a major problem**

Insecticides & Insects

2016 Objective

Evaluate registered and candidate insecticides for control of:

tipworms

fruitworms

fireworms

spanworms

flea beetles

leafhoppers

Insecticides

Altacor 35WDG

Assail 30SG

Belay 50WDG

Delegate 25WG

Diazinon AG600

Imidan 70WP

Intrepid 2F

Confirm 2F

Lorsban 4EC

Rimon 0.8EC

Cormoran 1.5 SC

Venerate/Grandevo

5 experimentals

NEW INSECTICIDE

CORMORAN 1.5 SC

- **RIMON (novaluron) 9.1%**
- **ASSAIL (acetamiprid)... 7.3%**

Cranberry use rate 12 fl oz/acre

22 insect pests on label

What Does What to Whom

	Tip Worm	Fruit Worm	Sparg fw	Span worm	Fire Worm	Flea Beetle	Leaf Hopper
Grandevo	--	++	++	++	+	--	--
Venerate	--	++	++	++	+	--	--
Venom	--	+	+	+	+	+++	++
Closer ^	--	--	--	--	--	+	--
Altacor	++	+++	+++	++	+++	+++	+++
Assail	+	+++	++	+++	++	+++	+
Belay ^	++	+++	++	+++	++	+++	+
Delegate	--	+++	+++	+++	++	--	--
Diazinon	+	++	+	++	++	+++	++
Imidan	+	++	+	++	++	+++	++
Intrepid	--	+++	++	+++	+	--	--
Lorsban	++	++	++	++	++	++	++
Cormoran	?	?	?	?	?	?	?

the Candidate Products

- **5 candidate insecticides
evaluated in 2016**
- **4 had good activity on several of
WI insect pests**
- **3 of these are registration
in-progress -- when ???**

Flea Beetles - *Are we going to have to learn to live with them ?*

- ✓ **Yes - probably**
- ✓ **Why ? less use of OP insecticides**
- ✓ **Easily controlled but multiple applications may be needed**

Flea Beetle Control

	Flea Beetle
Actara	+++
Assail	+++
Belay	+++
Lorsban	++
Diazinon	+++
Imidan	+++
Altacor	+++
Orthene or Sevin	++
Venom	+++
Delegate	++
Intrepid. Confirm	--

Flea Beetle Control Options

- How much damage are flea beetles really doing ?

Economic \$\$ or just cosmetic ??

- Use an insecticide \$\$

2016 Insecticides

Summary

- Insect pressures in 2016 were generally light
- Registered products performed as expected – good arsenal
- Three new additions pending registrations
- Any benefits to adding a surfactant to insecticides ??
- Several experimental products showed good utility
- Need to learn to manage flea beetles

Weeds & Herbicides



HERBICIDES & WEEDS

2016 Objectives

- 1) Problem weeds = escapes**
- 2) Integrate Pre & Post Herbicides**
Casoron & Devrinol + Callisto

Those Pesky Escapes

- **Maples, willows, popples, oaks**
- **Dewberry**
- **Northern St Johnswort**
- **Leatherleaf**
- **Poison Ivy**
- **Mosses**

Northern St. Johnswort



Bonsai Trees

- Willows, popples, and maybe oaks
Callisto will do these well
don't wait until mid or late season
- Maples are another story
Callisto hurts them but no-kill
- always got glyphosate - works slowly

Maples & Leatherleaf

Good News

&

Bad News

Maples & Leatherleaf

The Bad News
Still have to do the wiper



Maples & Leatherleaf

The Good News

- ✓ **glyphosate**
- ✓ **2,4-D has returned**
Weedar 64 (NuFarm)
0.5 – 1 pt/5 gallons
- ✓ **add a silicone surfactant**
1% v/v

Sphagnum Moss Control

- 1) **CuSO₄ (98%) at 15 lb/acre in 40 gal/acre of finished spray.**
- 2) **CuSO₄ applied** to actively growing cranberries can be phytotoxic so **dormant applications** are safest.
- 3) Fall dormant applications do not work nearly as well as **spring dormant applications.**
- 4) This is not a one-shot cure. Dense moss may **require several applications** over a period of several years - just keep knocking it back.
- 5) Bed flooding over the CuSO₄ is detrimental to effectiveness - **do not flood after the application.**

New POST Herbicides

- not many new herbicides coming out
- five generic Callisto (mesotrione)
- 3 candidate products have pending registration - need more work to find fits

Generic Callistos **(mesotrione)**

- ✓ **Bellum** (Rotam North America)
 - ✓ **Explorer** (Syngenta)
- ✓ **Incinerate** (Winfield Solutions)
 - ✓ **Sotrion** (Growmark)
- ✓ **Mesotrione 4SC** (Willowood)

Callisto - 2 Applications/Season

- *Should this limitation be lifted ?*
- *Would 3-4 applns better ?*
- *Still will have to honor the 16 oz/season max*
- *Still will have to honor the 45-day PHI*
- ✓ *We're working on it*

Future for Cranberry Pesticides

In registration process

3 new insecticides

3 new herbicides

5 new fungicides

*Is Our Pesticide Arsenal
Being threatened ??*

Yes

Some products are at risk

Cranberry Pesticides at Risk

Pesticide	Risk Reason
Bravo	Export residues
Evito	Export residues
Proline	Export residues
QuinStar	Export residues
Belay	Threat to bees
Assail	Threat to bees
Lorsban / OP Insecticides	Threat to the environment Export residues

Cranberry Pesticides that Benefit from a Surfactant

- Callisto
 - Poast
 - Select Max
- some glyphosate products
 - some insecticides ??
 - some fungicides ??

Always Remember to

.....

- ✓ ***Read the label***
- ✓ ***Check with the processor
for approval to use***

Free Time + an Ultralight





Thank You for Your Attention