Pesticide Safety 2006 - Pesticide Safety 2006

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Pesticide Safety 2006

Marty Sylvia
UMass Extension
Cranberry Station
New Pesticide Frontiers

Pesticide Update

• Bayer, Dupont, Dow Agro, Syngenta

Echo labeled for upright dieback

Pyramite = Nexter

• Guthion - Cancelled but EPA allowing 1 more season to use up existing stocks

• Diazinon 14 G cancelled by EPA, but we can use existing stocks as long as State registration is maintained (check in July)
### Leaders in CropScience*

<table>
<thead>
<tr>
<th>Company</th>
<th>Sales (€ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syngenta</td>
<td>5,821</td>
</tr>
<tr>
<td>Bayer CropScience*</td>
<td>5,764</td>
</tr>
<tr>
<td>Monsanto</td>
<td>4,208</td>
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<tr>
<td>DuPont</td>
<td>3,780</td>
</tr>
<tr>
<td>BASF</td>
<td>3,176</td>
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<tr>
<td>Dow AgroSciences</td>
<td>2,662</td>
</tr>
<tr>
<td>Sumitomo</td>
<td>1,038</td>
</tr>
<tr>
<td>Makhteshim</td>
<td>916</td>
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<tr>
<td>Nufarm</td>
<td>710</td>
</tr>
<tr>
<td>FMC</td>
<td>566</td>
</tr>
</tbody>
</table>

* 2003 Sales Figures in € million

Source: Cropnosis, Company Reports, Bayer CropScience Business Intelligence, 2004
Bayer Cranberry Products

Aliette®
Brand Fungicide

ADMIRE® PRO
Systemic Protectant

Sevin®
Brand Carbaryl Insecticide

Steve Cumming
Bayer CropScience
New formulations replaces ADMIRE 2F

4.6 lbs AI per gallon (compared to 2 lb per gallon in 2F)

7-14 oz. application rate (compared to 16-32 oz. for 2F)
Features / Benefits Summary

Increased dispersion & suspension

No foam formulation

- Ease in measuring
- Mixing with carrier

More concentrated

- Less container disposal
- Less inventory required

Unique “blue” color

- Easy to see
- Rinses clean w/out residues

Tamper evident packaging
Dupont Cranberry Products

- Avaunt
- Kocide 2000
- Manzate Pro-Stick

DuPont Crop Protection
Carl Bannon
DuPont Strategy for Cranberries

- Development of new products:
  - Avaunt 2007
    - Labeled for Cranberry Weevils and Blackheaded fireworm
  - E2Y in future and another numbered compound
    - Likely product of choice for cranberry fruitworm in future
    - Likely into IR-4 program for 2007

- Acquisition of Griffin Products
  - Kocide and Manzate

- New Formulation of these mature products
  - Kocide 2000
  - Manzate Pro-Stick
Dupont – New chemistry

- E2Y insecticide
  - New mode of action
  - High efficacy at low doses
  - Ultra low toxicity
  - Regulatory strategy in place
  - Syngenta to acquire license to sell in blends in exchange for fungicides.
Manzate® Pro-Stick™

– *New* Manzate® Pro-Stick™ formulation:
  - Mixes instantly in water
  - Stays in suspension longer
  - Improved rainfastness
  - Low dust & low foaming characteristics
  - Improved sprayability

– Preventive broad spectrum control
NEW KOCIDE® 2000 PROTECH™

IMPROVED HANDLING

- Free flowing, virtually dust free:
  User-friendly benefits of the microgranular formulation.
- Easy to measure: Can be measured by weight or volume.
- High bulk density:
  Smaller packaging for easier transport, storage, handling and disposal.
- Environmentally friendly:
  Reduced concentration of copper active ingredient.
- New lower copper formulation being developed.
- Organic use approval pending.

Provides You With:

- Better Rainfastness
- Great Residual
- Faster Dispersion
- Better Suspension
- Unsurpassed Compatibility
- Superior Disease Control
Dow AgroScience Cranberry Products

- Dithane
- Kerb (sect. 18)
- Stinger (sect. 18)
- Lorsban 4E
- Intrepid and Confirm
- Spintor

Dow AgroSciences
Gregory Comeau
New “Cheerios” Fungicide.

- Well established in the Fruit market
  - industry standard
- Control of fruit rot and Fairy Ring
  - Not as good as Bravo, but better than Abound
- Label Expansion expected in Q3 of 2006
  - Small fruit
    - Blueberry, Strawberry, Cranberries
  - Available to use in 2007
- Alternative to Bravo in Zone II areas
New Compound -- XDE 175

- A new spinosyn insecticide compound under development by Dow AgroSciences.
- Same chemistry as SpinTor but different product
- Derived from a naturally-occurring substance

- Don’t overuse SpinTor now so we can use new compound later
New Compound -- XDE 175

- Excellent broad spectrum control
- Does not impact most key beneficial insects
- Effective at lower use rates
- Less persistent in the environment
- Longer residual than SpinTor

Regulatory Status
- U.S. EPA has accepted for expedited review under Reduced Risk Pesticide Program
- Launch in the US is anticipated in 2007
- Likely available for cranberry in 2008
Syngenta Cranberry Products

- Actara
- Bravo
- Abound
- Princep
- Ridomil
- Touchdown

Steve Zapach
Syngenta Crop Protection
New Crop Protection Materials

- Increasing shift from broad spectrum to more selective compounds
  - Actara is a targeted insecticide that replaces OP’s.

- Naturally derived compounds (reduced risk)
  - Abound – discovered in wood decaying mushrooms
  - New herbicide pending – allelopathic compounds
Syngenta’s Direction

Abound Fungicide

– Discovered the 1960’s
– Patented in 1988
– First label in 1996
– Fairy ring 24(c) label in 2005
– Water holding restriction models being developed to reduce current water hold from 14 to 0 days
Syngenta’s Direction

- Actara labeled in 2005, Sec. 3 label
- Currently supporting IR4 project for new chemistry for weed control in cranberry.
  - Labeling expected in 2008
- Continued support of IR4.
- Continued support of local research programs.
Bumblebees

- Now cost of bumblebees is competitive with cost of honey bees

- Koppert Company
- 4 hives = QUAD
- QUAD costs $215 + shipping
Bumblebees

- Honeybees are poor cranberry pollinators
- Bumblebees are excellent cranberry pollinators
Nematodes

- Available through Becker Underwood
  - Order through RASP or Matt Beaton (CGS)
  - No inventory
  - Delivered to grower

- Nematac C
  - Cranberry Girdler  2 billion nematodes/$275

- Nemasys H or Nemasys L (cold tolerant)
  - Black Vine Weevil  2 billion nematodes/$900
How to Keep Safe

- Reduce Your Risk
- Safety Practices
- Know the Products
- Personal Protective Equipment
Reduce Your Risk

- Read the label
- Wear at least the PPE that is recommended
  - Protect what the label tells you to protect (eyes, lungs…)
- Use common sense
- Don’t be lazy!
Restricted Use Pesticides

- Not all restricted use pesticides are because of human toxicity.
- Know which ones are!!
- Lorsban, Diazinon, Guthion
Restricted Use Pesticides

Groundwater Protection/Zone II Problems
“the ability to leach through the soil”

- Diazinon
- Lorsban
- Guthion

  - Chlorothalonil
    - (Bravo, Echo, Equus)
  - Actara
  - Intrepid
  - Kerb
  - Simazine
    - (Princep, Caliber)
Reduced risk pesticide products

- Biologicals or non-chemical alternatives
- low toxicity compounds
- low rate products

Reduced risk handling systems
- formulations and packaging eliminate handling
- containers reduce spills and accidents
Dermal Exposure

- If a pesticide is spilled on someone’s skin, you should **immediately rinse** with plenty of water.

- Penetrants and oils may allow faster movement through the skin.

- Cuts and abrasions allow faster absorption.
When handling the concentrate...

- Wear a protective suit that covers all parts of the body except head, hands, and feet. Wear chemical resistant gloves, chemical resistant apron, and chemical resistant shoes or boots. Wear goggles or a face shield and a NIOSH approved pesticide respirator.
During application, while repairing or cleaning equipment, or during reentry before the REI is up.

- Wear a protective suit that covers all parts of the body except head, hands, and feet. Wear chemical resistant gloves, chemical resistant apron, and chemical resistant shoes or boots. Wear goggles or a face shield.
Personal Protective Equipment

PPE
still the best way to reduce exposure and reduce your risk!
Personal Protection Equipment

- Coveralls
- Boots
- Gloves
- Hat
- Eyewear
- Respirator
- Apron
Personal Protective Equipment

- Must be provided by employer
  “Companies are required to make available to all workers whatever protective equipment is required for handling the chemicals they use”
- PPE should be identified
- Training should be provided
- Company should implement and enforce PPE program
Availability

- Gemplers
- RASP
- DECRAN
- RF MORSE
CLOTHING/COVERALLS

- Longsleeved shirt and pants
  - Woven or Nonwoven long sleeved shirt and long legged pants
  - EVERY pesticide label requires long pants and long shirt!!

- Coverall over shirt and pants
  - Always provide more protection
  - Disposable coveralls are a good idea for pesticide use

- Chemical resistant protective suit
  - Rubber, plastic, barrier coated

- Waterproof suit
GLOVES

- Chemically Resistant
  - Nitrile
  - Butyl
  - Neoprene
  - Natural Rubber
  - Barrier Laminate

Disposable Nitrile gloves
FOOTWEAR

- Shoes - Leather, Canvas, Fabric

- Chemical Resistant Footwear or Boots:
  - Chemical Resistant Shoes
  - Chemical Resistant Boots
  - Chemical Resistant Shoe Covering
BOOTS

PVC BOOTS

VINYL BOOTS
EYEWEAR

- Protective Eyewear
  - Shielded Safety Glasses
  - Face Shield
  - Goggles
  - Full Face style respirator
Respirators
MUST HAVE NIOSH/MSHA APPROVAL

- Dust/mist filtering - dusts, powders, mists, and sprays. TC-21C
- Vapor removing - gases and vapors.
  - TC-23C - cartridge for organic vapors + prefilter
  - TC-14G - canister for pesticides/organic vapors
Extra Protection

- Apron
  - Chemical resistant

- Hat or Hood
  - Chemical resistant
  - Full hood as part of respirator
  - Not ball cap used all season
Clean Equipment!!

- Protective equipment should be cleaned after every use.
- Soap and water!!
- Dispose of heavily contaminated PPE
Storage

- Keep chemicals in original containers and tightly sealed.
Recommendation for Storage

- Glass bottles should be stored within a metal can, like a coffee can. If the bottle breaks, the spill will be contained.
- Be sure that caps are tightened securely on all bottles and cans.
- Eliminate leaky containers.
- Above all, keep pesticide materials in a locked room or cabinet and out of reach of children and animals.
Recommendation for Storage

- Store wettable powders, dusts and granules of pesticide products in a cool, dry place.
- Keep temperatures below 100 degrees F.
- Do not allow liquids to freeze
  - (glass containers could break).
Recommendation for Storage

- Do not store weed killers close to other materials (such as wettable powders, dust formulations or granular insecticides).

- Some weed killers such as 2,4-d and 2,4,5-t are highly volatile and can contaminate other materials (especially when confined in close quarters).
Storage

- It is not recommended to store pesticides longer than two years.

- Always purchase pesticides in a container size small enough to be used up within a season or less.

- Reduce storage problems.
Hazardous Waste Collections

- MDAR got funding for free pesticide disposal
- Cape Cod Extension is leading the charge
- Saturday mornings starting in May -- 9 to 12
- 20 collection dates on the Cape this summer
  - Sandwich, Bourne, Harwich, Marstons Mills, etc
- Restriction on transporting -- limit
  - 55 gallons or 440 lbs product
- Must complete list of pesticides and fax to Cape Cod Extension 2 weeks in advance of collection date