Deterring birds in blueberries: Three potential techniques

Deanna K. Leigh, WWU
Karen M. M. Steensma, TWU
Outline

• Background and Study Site
• Deterrent methods
  – Methyl anthranilate & sucrose sprays
  – Falconry
  – Hawk Kites
• Methods tested in other crops
  – American Kestrel nest boxes
  – Air dancers
Outline

• **Background and Study Site**
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Study sites

- Blueberries
- Apples & Cherries
- Wine grapes
Assessing Damage
Assessing Damage

1. Random selection of sample plants (60/block)
Assessing Damage

1. Random plant
2. Random branch
Assessing Damage

1. Random plant

2. Random branch

3. Mark
Assessing Damage

1. Random plant

2. Random branch

3. Mark

4. Count all blue + green berries
Assessing Damage

1. Random plant
2. Random branch
3. Mark
4. Count all blue + green berries
5. Recount at harvest to determine loss
Estimated bird damage to Pacific Northwest crops, 2012

Fruit Damage (% of total crop)

Blueberries: 5%
Cherries: 3%
Grapes: 8%
Apples: 1.5%
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Bird Deterrent Sprays

Methyl Anthranilate (M.A.)
- Occurs in concord grapes
- Avian Control™, Bird Stop™

Sucrose
- Table sugar (cane sugar, beet sugar, etc.)
M.A. & Sucrose
M.A. & Sucrose

Control  M.A.  Sucrose
M.A. & Sucrose

Fruit Damage (%)

Control  M.A.  Sucrose

P > 0.99
M.A. & Sucrose in Michigan

![Graph showing percent loss in TN1, TN2, and TN3 with different groups: Control, Sugar, Methyl A.](image)
Birds observed per hour at three sites in Michigan Jersey blueberries, 2013, 15.8 hours observation total.

The graph shows the number of birds observed per hour at three sites (TN1, TN2, TN3) with different treatments: Control, Sugar, and MA.
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Falconry

- 2012 pilot study suggests that falconry may reduce crop loss
Falconry vs. Hawk Kites

- Professional falconers with trained birds of prey
  - ~ $20,000/season
- Mimic birds of prey
  - ~ $100/kite
  - Pest birds may habituate

Photos: Kate Steensma
Falconry vs. Hawk Kites

Fruit Damage (%)

Control | Falconry | Kites | Falconry + Kites

0 | 4 | 10 | 12
Falconry vs. Hawk Kites

Fruit Damage (%)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Fruit Damage (%)</th>
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</thead>
<tbody>
<tr>
<td>Control</td>
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<tr>
<td>Falconry</td>
<td>6</td>
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<tr>
<td>Kites</td>
<td>12</td>
</tr>
<tr>
<td>Falconry + Kites</td>
<td>14</td>
</tr>
</tbody>
</table>
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American Kestrel Nest Boxes

- Kestrels territorial during nesting (Apr-Aug)
- Take readily to nest boxes
- Boxes used often in cherries and sometimes in blueberries

Photos: Kate Steensma
American Kestrel Nest Boxes

- Pilot study in sweet cherries
- Measured crop damage in kestrel-occupied and unoccupied blocks
American Kestrel Nest Boxes

- Lower damage in kestrel-occupied blocks
- Non-significant due to few trials (n=7)
- Study to continue in 2014
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Air Dancers

- $325 per setup
  - Electric or generator
- Birds may habituate
- Positive pilot studies in MI and NY
- Testing in 2014

Photo: Kate Steensma
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Danninger Orchards
Driediger Farm
East View Blueberry Farm
Enfield Farms
Flat Top Ranch
Gill Farm
Golden Ridge Vineyard
Hedeen Orchards
Hence Cellars
J4 Ranch
L'ecole 41
Lodmell Cellars
M&G Farms
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Samson Farms, Inc
Sekhon Farm
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