



A Perspective on Bird Damage to Fruit Crops in New York

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Fruit Crops at Risk

- Crops most at risk:
 - Blueberries, Cherries, Grapes, Apples
- Other crops damaged by birds:
 - Elderberries, Strawberries, Raspberries, Peaches, Plums
- Crop loss estimates reported:
 - Most commonly reported losses 30% to 50%



Types of Damage Occurring

- Direct damage:
 - Fruit feeding (all crops)
 - Blossom feeding (plums)
 - Trunk damage (apples)
- Indirect damage:
 - Fruit rot infections following feeding injuries (blueberries, tree fruit, grapes)
 - Planting of noxious weed species i.e. Poison Ivy, Asian Bittersweet by roosting birds (apples)





Birds Causing Damage

Blueberries

- Starlings (8)
- Robins (7)
- Finches (4)
- Grackles (4)
- Turkeys (4)
- Cedar Waxwings (3)
- Sparrows (3)
- Blue Jays (2)
- Cardinals (1)
- Catbirds (1)
- Crows (1)
- Grosbeaks (1)
- Red-winged Blackbirds (1)

Raspberries

- Blue Jays (1)
- Grackles (1)
- Finches (1)
- Sparrows (1)
- Robins (1)
- Starlings (1)

Strawberries

- Cedar Waxwings (4)
- Robins (2)
- Crows (1)
- Grosbeaks (1)
- Red-winged Blackbirds (1)
- Starlings (1)



Birds Causing Damage

Apples

- Crows (5)
- Sparrows (2)
- Starlings (2)
- Cedar Waxwings (1)
- Grackles (1)
- Robins (1)
- Woodpeckers (1)

Cherries

- Starlings (8)
- Robins (6)
- Finches (3)
- Cedar Waxwings (2)
- Grackles (2)
- Sparrows (2)
- Crows (1)
- Cardinals (1)
- Catbirds (1)
- Gulls (1)
- Red-winged blackbirds (1)

Grapes

- Starlings (7)
- Finches (4)
- Robins (4)
- Turkeys (3)
- Sparrows (2)
- Cardinals (1)
- Catbirds (1)
- Cedar waxwings (1)





Damage Mitigation Methods

- Growers use a combination of tactics:
 - Physical barriers
 - Netting of whole fields, individual rows or plants, fruiting zone
 - Visual scare devices
 - Scare-eye balloons, Mylar (flash) tape
 - Predator balloons or kites (owls, coyotes, hawks)
 - windmills
 - Audio scare devices
 - Bird distress calls, propane cannons, guns

Damage Mitigation Methods

– Feeding deterrents

- Methyl anthranilate (Bird-B-Gone)
- Table sugar sprays

– Other Tactics

- Bird traps (starlings)
- Frequent movement of people/equipment through plantings
- Providing nest boxes/sites for raptors
- Guinea fowl







Efficacy of Mitigation Methods

- Netting provides best protection, but is cumbersome and expensive
- A combination of other tactics provides some degree of protection
- Tactics should be in place before fruit begins to ripen
- Types and locations of tactics should be changed frequently



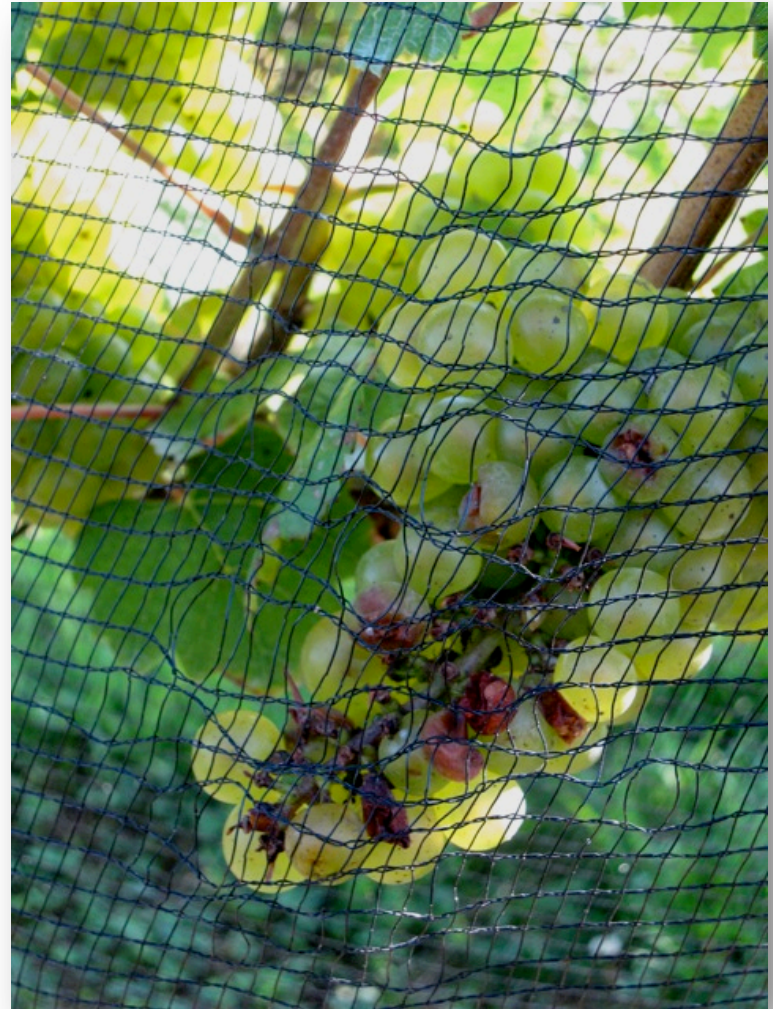
Future Research Needs

- More accurate data on:
 - Annual losses (\$ value, % crop loss)
 - Species causing damage
 - Factors impacting losses (i.e. drought)
 - Documentation of damage levels by crop



Future Research Needs

- Economics of netting
 - Products providing best protection
 - Ease of application
 - Documentation of damage reduction
 - Cost effectiveness



Future Research Needs

- Development of new bird repellents and scare devices
 - Feeding retardants that do not alter fruit taste, quality, appearance
 - Socci, Pritts and Kelly (1997) reported lower bird damage on blueberries sprayed with table sugar solution - approach should be tested more widely for efficacy
 - Registration of products
 - Audio deterrents inaudible to humans?

Future Research Needs

- Other
 - Effects of planting design on bird damage
 - Trellis systems – less bird friendly top wires?
 - Tree canopy management
 - Plant ecosystem management
 - Attractive compensatory plantings
 - Unappealing border crops
 - Hedgerow composition management
 - Providing water during drought periods
 - Predator enhancement potential
 - Attention to avian migratory flyways and timing.



Questions/Comments?

THANK YOU