

New England Sweet Corn Pest Management Survey Results

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A survey was distributed to 754 New England growers in the fall of 2004. Dillman survey methodology was used to design and conduct the survey. The original survey and summary of results may be found at the website www.pronewengland.org.

New England Sweet Corn Pest Management Survey Returns

| State | #Surveys Sent | #Surveys Returned | %Return | #Growing Sweet Corn | #Sweet Corn Acres |
|--------------|---------------|-------------------|-----------|---------------------|-------------------|
| MA | 261 | 167 | 64 | 98 | 2523 |
| ME | 130 | 94 | 72 | 56 | 801 |
| NH | 213 | 126 | 59 | 28 | 565 |
| RI | 42 | 26 | 62 | 9 | 395 |
| VT | 23 | 17 | 74 | 17 | 169 |
| CT | 85 | 46 | 54 | 6 | 21 |
| Total | 754 | 476 | 63 | 215 | 4474 |

Question A2. Over the past five years, what is your average annual yield of harvested sweet corn per acre? (N=183)¹

| | |
|---------------------------------|----------------|
| Number of Growers Reporting | 157 |
| Percent of Growers ² | 73% |
| Number of Acres | 3544 |
| Percent of Acres | 79% |
| Total Bushel bags/Year | 660,799 |
| Average Bushel bags/Acre | 186 |

¹N is used throughout the entire document and refers to the number of growers who answered the question.

²**Percent of growers** was calculated using the number growers who responded to the survey as the denominator, not the number of growers responding to a particular question. Many questions allowed multiple answers, thus percent responses may sum to more than 100%.

Question A3. What percentage of your sweet corn crop is sold through each of these markets? (N=213)

| Markets | #Acres | %Acres |
|-------------------------|--------|--------|
| Fresh market, retail | 2405 | 54 |
| Fresh market, wholesale | 1964 | 44 |
| Processing | 0.6 | <1 |
| Other* | 17 | <1 |

*Community Supported Agriculture (CSA), Farmers' Market, and U-Pick

Question B1. Which of the following practices do you use? (Circle all that apply.) (N=210)

| Practices | #Growers | %Growers |
|------------------------------|----------|----------|
| direct seed into bare ground | 202 | 94 |
| direct seeding under plastic | 48 | 22 |
| direct seed with row covers | 46 | 21 |
| transplants into bare ground | 14 | 7 |
| transplants with row covers | 12 | 6 |
| transplants in plastic | 9 | 4 |

Question B2. Do you use a soil test to determine fertilizer needs for sweet corn in most years? (Circle your answer) (N=209)

| Soil test | #Growers | %Growers |
|-----------------------|----------|----------|
| No | 44 | 20 |
| Annually | 63 | 29 |
| Every 2-3 years | 85 | 40 |
| Every 4-5 years | 15 | 7 |
| Do not use fertilizer | 3 | 1 |
| Other | 5 | 2 |

Question B3. Which soil/and/or nutrient management practices do you use? (Circle all that apply) (N=209)

| Practices | #Growers | %Growers |
|---|----------|----------|
| Grass cover crop (rye, oat, sudax, etc) | 145 | 67 |
| Pre-side dress (June) nitrate test | 87 | 40 |
| Manure application | 65 | 30 |
| Compost application | 35 | 16 |
| Legume cover crop (clover, vetch, etc.) | 32 | 15 |
| Other | 35 | 16 |

Question C1. Please estimate your average number of pesticide applications for sweet corn used in a typical year: (N=208)

| Pests | #Average Number of Sprays |
|--------------|----------------------------------|
| Insects | 4.02 |
| Weeds | 1.15 |
| Mites | 0.08 |
| Disease | 0.135 |

Insects and Mites Section

Question C2. Which of these insects/mites require routine annual management, require occasional management, or are never a problem in your sweet corn fields? (N=212)

| Rank | Insect/Mite | Weighed Number* |
|-------------|------------------------|------------------------|
| 1 | corn earworm | 772 |
| 2 | European corn borer | 764 |
| 3 | fall army worm | 492 |
| 4 | corn leaf aphid | 250 |
| 5 | common army worm | 230 |
| 6 | stalk borer | 182 |
| 7 | cutworms | 126 |
| 8 | seedcorn maggot | 118 |
| 9 | corn flea beetles | 110 |
| 10 | Japanese beetle | 94 |
| 11 | sap and picnic beetle | 88 |
| 12 | wireworms | 76 |
| 13 | twospotted spider mite | 26 |

*The weighed number was determined by multiplying routine annual management by 4, occasional management by 2, and never a problem by 0.

Question D1. Which of the following practices do you use to manage insects and/or mite pests? (Circle all that apply.) (N=209)

| #Growers | %Growers | Practices used to manage insect and mite pests |
|----------|----------|--|
| 53 | 25 | pheromone trap for European corn borer |
| 69 | 32 | pheromone trap for corn ear worm |
| 43 | 20 | pheromone trap for fall army worm |
| 174 | 81 | field scouting for worms or feeding damage |
| 5 | 2 | field scouting for other insect pests |
| 22 | 10 | field scouting for beneficials |
| 128 | 60 | read state or regional pest alerts |
| 17 | 8 | none |

The following insect and mites pests (pages 4-10) are listed according to the number of growers who used pesticides to manage the pest in 2003. The survey listed several pesticides and some practices. Growers were able to write in additional pesticides and practices.

Corn earworm Number Percent
(N=210)
Acres Treated **3617** **81**
Growers **183** **85**

| Pesticide ³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|--------------------------|----------|----------|--------|--------------|-----------|------|------|
| Warrior | 103 | 48 | 2689 | 60 | 75 | 25 | 1 |
| Lannate SP | 82 | 38 | 2156 | 48 | 48 | 30 | 2 |
| Larvin 3.2 | 36 | 17 | 707 | 16 | 20 | 12 | 4 |
| Asana XL | 19 | 9 | 632 | 14 | 9 | 10 | 0 |
| Ambush | 27 | 13 | 462 | 10 | 8 | 16 | 3 |
| Baythroid 2 | 8 | 4 | 316 | 7 | 3 | 5 | 0 |
| Spintor 2SC | 7 | 3 | 192 | 4 | 4 | 2 | 1 |
| Sevin | 11 | 5 | 78 | 2 | 2 | 6 | 2 |
| Dipel DF or ES | 8 | 4 | 56 | 1 | 2 | 4 | 2 |
| Pounce | 3 | 1 | 46 | 1 | 2 | 1 | 0 |
| Golden Natural Spray Oil | 3 | 1 | 26 | 1 | 1 | 1 | 1 |
| Entrust | 7 | 3 | 23 | 1 | 4 | 2 | 1 |
| Permethrin | 1 | <1 | 20 | <1 | 1 | 0 | 0 |
| Pheromone traps | 1 | <1 | 15 | <1 | 1 | 0 | 0 |
| Zealater with DiPel | 2 | 1 | 5 | <1 | 2 | 0 | 0 |

³See Appendix A (page 22) for Brand names and active ingredients

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Lannate | 1 | <1 | 4 | <1 | 1 | 0 | 0 |
| Lannate | 1 | <1 | 4 | <1 | 1 | 0 | 0 |
| Capture 2EC | 1 | <1 | 1.5 | <1 | 0 | 1 | 0 |
| Thuricide | 1 | <1 | 0.6 | <1 | 0 | 0 | 0 |
| Generic soybean oil | 1 | <1 | 0.6 | <1 | 0 | 0 | 0 |
| Bullseye | 1 | <1 | 0.6 | <1 | 0 | 0 | 0 |
| Pyronyl | 1 | <1 | 0.5 | <1 | 0 | 1 | 0 |
| Handpick | 1 | <1 | 0.1 | <1 | 1 | 0 | 0 |
| Mustang | 0 | | | | | | |
| XenTari | 0 | | | | | | |
| Crop rotation | 1 | <1 | 1 | <1 | 0 | 1 | 0 |
| Lady bugs | 1 | <1 | 2 | <1 | 0 | 0 | 0 |

European corn borer (N=213) Number Percent
 Acres Treated **3459** **77**
 Growers **183** **85**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Warrior | 95 | 44 | 2284 | 51 | 71 | 23 | 1 |
| Lannate SP | 87 | 40 | 2177 | 49 | 52 | 33 | 2 |
| Larvin 3.2 | 39 | 18 | 829 | 19 | 21 | 15 | 3 |
| Ambush | 35 | 16 | 660 | 15 | 13 | 19 | 3 |
| Asana XL | 19 | 9 | 563 | 13 | 9 | 9 | 1 |
| Spintor 2SC | 18 | 8 | 456 | 10 | 12 | 5 | 1 |
| Baythroid 2 | 11 | 5 | 416 | 9 | 5 | 5 | 1 |
| Mustang | 1 | <1 | 153 | 3 | 0 | 0 | 0 |
| Dipel DF or ES | 16 | 7 | 131 | 3 | 5 | 8 | 1 |
| Sevin | 10 | 5 | 109 | 2 | 3 | 5 | 2 |
| Pounce | 7 | 3 | 72 | 2 | 4 | 3 | 0 |
| Lorsban | 1 | <1 | 65 | 1 | 1 | 0 | 0 |
| Intrepid 2F | 2 | 1 | 23 | 1 | 1 | 0 | 1 |
| Entrust | 6 | 3 | 22 | 1 | 4 | 2 | 6 |
| Permethrin | 1 | <1 | 20 | <1 | 1 | 0 | 0 |
| Xentari | 1 | <1 | 4.5 | <1 | 1 | 0 | 0 |
| Lannate | 1 | <1 | 4 | <1 | 1 | 0 | 0 |
| Capture 2EC | 1 | <1 | 1.5 | <1 | 0 | 1 | 0 |
| Thuricide (Bt Kurstaki) | 1 | <1 | 0.6 | <1 | 0 | 0 | 0 |
| Avaunt | 0 | | | | | | |
| Rotation | 1 | <1 | 22 | 1 | 0 | 1 | 0 |
| Ladybugs | 1 | <1 | 2 | <1 | 0 | 0 | 1 |

Fall armyworm (N=210) Number Percent
 Acres Treated **1673** **37**
 Growers **128** **60**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Warrior | 73 | 34 | 1118 | 25 | 48 | 22 | 3 |
| Lannate SP | 62 | 29 | 908 | 20 | 35 | 23 | 4 |
| Larvin 3.2 | 26 | 12 | 223 | 5 | 9 | 16 | 1 |
| Asana XL | 13 | 6 | 191 | 4 | 4 | 8 | 1 |
| Baythroid 2 | 8 | 4 | 179 | 4 | 3 | 4 | 0 |
| Ambush | 19 | 9 | 150 | 3 | 8 | 10 | 0 |
| Mustang | 1 | <1 | 68 | 2 | 0 | 0 | 0 |
| Spintor 2SC | 5 | 2 | 38 | 1 | 4 | 1 | 0 |
| Pounce | 2 | 1 | 38 | 1 | 1 | 1 | 0 |
| Dipel DF or ES | 4 | 2 | 20 | <1 | 1 | 2 | 1 |
| Permethrin | 1 | <1 | 15 | <1 | 1 | 0 | 0 |
| Sevin | 3 | 1 | 6 | <1 | 0 | 2 | 0 |
| Capture 2EC | 1 | <1 | 1.5 | <1 | 0 | 1 | 0 |
| Entrust | 0 | | | | | | |
| XenTari | 0 | | | | | | |
| Avaunt | 0 | | | | | | |

Corn leaf aphid (N=209) Number Percent
 Acres Treated **1313** **29**
 Growers **62** **29**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Lannate SP | 43 | 20 | 897 | 20 | 29 | 12 | 1 |
| Warrior | 30 | 14 | 586 | 13 | 11 | 13 | 5 |
| M-Pede | 1 | | 170 | 4 | 0 | 0 | 0 |
| Thionex 50W | 2 | 1 | 16 | <1 | 2 | 0 | 0 |
| Lannate | 1 | | 9 | <1 | 0 | 1 | 0 |
| Capture 2EC | 0 | | | | | | |

³See Appendix A (page 22) for Brand names and active ingredients

Seedcorn maggot Number Percent
(N=207)
Acres Treated **1269** **28**
Growers **49** **23**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Gaucho 600 | 27 | 13 | 759 | 17 | 16 | 11 | 0 |
| Lorsban 4E | 13 | 6 | 623 | 14 | 10 | 3 | 0 |
| Treated seed | 6 | 3 | 147 | 3 | 0 | 2 | 0 |
| Force 3G | 1 | | 100 | 2 | 1 | 0 | 0 |
| Cruiser 5FS | 6 | 3 | 70 | 2 | 3 | 3 | 0 |
| Diazinon | 4 | 2 | 16 | <1 | 3 | 1 | 0 |
| Counter 15G | 1 | | 7.5 | <1 | 0 | 1 | 0 |
| Kernal guard | 1 | | 5.2 | <1 | 1 | 0 | 0 |
| Fortress 5G | 0 | | | | | | |
| Capture 2EC | 0 | | | | | | |
| Thimet 20G | 0 | | | | | | |
| Plant later | 1 | | 1 | <1 | 0 | 0 | 0 |

Stalk borer (N=215) Number Percent
Acres Treated **515** **12**
Growers **33** **15**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Warrior | 21 | 10 | 402 | 9 | 13 | 6 | 1 |
| Ambush | 8 | 4 | 183 | 4 | 3 | 4 | 1 |
| Baythroid 2 | 1 | <1 | 100 | 2 | 0 | 0 | 1 |
| Sevin | 2 | 1 | 16 | <1 | 0 | 1 | 0 |
| Lannate | 1 | <1 | 10 | <1 | 1 | 0 | 0 |
| Larvin | 1 | <1 | 10 | <1 | 1 | 0 | 0 |
| Pounce | 1 | <1 | 3 | <1 | 1 | 0 | 0 |
| Asana XL | 1 | <1 | 1 | <1 | 1 | 0 | 0 |
| Capture 2EC | 0 | | | | | | |

³See Appendix A (page 22) for Brand names and active ingredients

Cutworms (N=207) Number Percent
 Acres Treated **508** **11**
 Growers **15** **7**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Lorsban 4E | 6 | 3 | 386 | 9 | 3 | 2 | 0 |
| Warrior | 4 | 2 | 72 | 2 | 2 | 2 | 0 |
| Sevin XLR Plus | 3 | 1 | 38 | <1 | 2 | 0 | 1 |
| Asana XL | 1 | | 12 | <1 | 1 | 0 | 0 |
| Ambush | 0 | | | | | | |
| Baythroid 2 | 0 | | | | | | |
| Capture 2EC | 0 | | | | | | |
| Mustang | 0 | | | | | | |

Corn flea beetle Number Percent
(N=209)
 Acres Treated **468** **10**
 Growers **24** **11**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Lannate SP | 13 | 6 | 356 | 8 | 5 | 7 | 0 |
| Warrior | 9 | 4 | 62 | 1 | 6 | 2 | 0 |
| Thimet 20G | 1 | <1 | 36 | 1 | 0 | 1 | 0 |
| Ambush | 1 | <1 | 30 | 1 | 0 | 1 | 0 |
| Gaicho 600 | 3 | 1 | 29 | 1 | 2 | 1 | 0 |
| Cruiser 5FS | 2 | 1 | 28 | 1 | 1 | 1 | 0 |
| Sevin XLR Plus | 3 | 1 | 21 | <1 | 2 | 1 | 0 |
| Asana XL | 0 | | | | | | |
| Baythroid 2 | 0 | | | | | | |
| Capture 2EC | 0 | | | | | | |
| Counter 15G | 0 | | | | | | |
| Mustang | 0 | | | | | | |

³See Appendix A (page 22) for Brand names and active ingredients

Sap and Picnic beetles (N=206) Number Percent

Acres Treated **366** **8**
 Growers **18** **8**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Lannate SP | 9 | 4 | 177 | 4 | 4 | 3 | 2 |
| Baythroid | 1 | | 136 | 3 | 0 | 0 | 0 |
| Warrior | 11 | 5 | 119 | 3 | 5 | 6 | 0 |
| Asana XL | 1 | | 3.5 | <1 | 1 | 0 | 0 |
| Capture 2EC | 0 | | | | | | |
| Malathion 57EC | 0 | | | | | | |
| Mustang | 0 | | | | | | |
| Sevin XLR Plus | 0 | | | | | | |

Wireworms (N=207) Number Percent

Acres Treated **195** **4**
 Growers **10** **5**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Cruiser 5FS | 3 | 1 | 73 | 2 | 1 | 2 | 0 |
| Gaucho | 1 | <1 | 7.5 | <1 | 0 | 1 | 0 |
| Counter 15G | 1 | <1 | 7.5 | <1 | 1 | 0 | 0 |
| Kernal guard | 1 | <1 | 5.2 | <1 | 1 | 0 | 0 |
| Diazinon | 1 | <1 | 0.5 | <1 | 1 | 0 | 0 |
| Treated seed | 4 | 2 | 116 | 3 | 0 | 1 | 0 |
| Capture 2EC | 0 | | | | | | |
| Force 3G | 0 | | | | | | |
| Mocap 10G | 0 | | | | | | |
| Thimet 20G | 0 | | | | | | |

³See Appendix A (page 22) for Brand names and active ingredients

Japanese beetle Number Percent
(N=207)
Acres Treated **91** **2**
Growers **14** **7**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Warrior | 7 | 3 | 71 | 2 | 4 | 3 | 0 |
| Sevin XLR Plus | 4 | 2 | 17 | < 1 | 0 | 4 | 0 |
| Lannate | 2 | 1 | 7.5 | < 1 | 2 | 0 | 0 |
| Ambush | 1 | <1 | 0.9 | < 1 | 0 | 0 | 0 |
| Handpick | 1 | <1 | 2 | < 1 | 0 | 1 | 0 |
| Capture 2EC | 0 | | | | | | |
| Mustang | 0 | | | | | | |

Twospotted spider Number Percent
mite (N=205)
Acres Treated **15** <**1**
Growers **1** <**1**

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Capture 2EC | 1 | <1 | 15 | < 1 | 0 | 1 | 0 |
| Metasystox-R | 0 | | | | | | |

³See Appendix A (page 22) for Brand names and active ingredients

Disease Section

Question C3. Which of these diseases require routine annual management, require occasional management, or are never a problem in your sweet corn fields? (Please circle your answers) (N=205)

| Rank | Disease | Weighed Number |
|------|--------------------------|----------------|
| 1 | Common smut | 170 |
| 2 | Rust | 160 |
| 3 | Seed decay | 136 |
| 4 | Stewart's wilt | 88 |
| 5 | Maize dwarf mosaic virus | 54 |

Question E1. Which of the following practices do you use to manage diseases in sweet corn? (Circle all that apply.) (N=192)

| #Growers | %Growers | Practices used to manage diseases |
|----------|----------|-----------------------------------|
| 124 | 58 | crop rotation |
| 120 | 56 | fungicide-treated seed |
| 105 | 49 | disease tolerant varieties |
| 15 | 7 | application of fungicides |
| 5 | 2 | other |

| | | |
|---------------------|--------|---------|
| Rust (N=205) | Number | Percent |
| Acres Treated | 311 | 7 |
| Growers | 10 | 5 |

| Pesticide ³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------|----------|----------|--------|--------|-----------|------|------|
| Manzate | 4 | 2 | 261 | 6 | 0 | 4 | 0 |
| Dithane | 1 | | 250 | 6 | 0 | 1 | 0 |
| Maneb | 1 | | 250 | 6 | 0 | 1 | 0 |
| Bravo Ultrex 82 WDG | 5 | 2 | 19 | <1 | 2 | 1 | 2 |
| Gaucho | 1 | | 10 | <1 | 0 | 0 | 0 |
| Penncozeb | 1 | | 4 | <1 | 0 | 1 | 0 |
| Tilt | 0 | | | | | | |
| Tolerant variety | 1 | | 25 | <1 | 1 | 0 | 0 |

Weed Management Section

Question C4. Which of these weeds require routine annual management, require occasional management, or are never a problem on your sweet corn fields? (Please circle your answers) (N=209)

| Rank | Weeds | Annual Mgmt | Weighed Number |
|------|---------------------------|-------------|----------------|
| 1 | Annual broadleaf weeds | 190 | 780 |
| 2 | Annual grasses | 168 | 712 |
| 3 | Perennial broadleaf weeds | 121 | 588 |
| 4 | Perennial grasses | 113 | 568 |

Question F1. Which if the following weed management practices did you use for sweet corn? (Please circle the practices used and their effectiveness: excellent, good, poor.) (N=193)

| Practices | #Growers | %Growers | Excellent | Good | Poor |
|--|----------|----------|-----------|------|------|
| Mechanical cultivation | 148 | 69 | 28 | 106 | 6 |
| Hand pulling | 57 | 27 | 23 | 26 | 5 |
| Hoeing | 42 | 20 | 16 | 23 | 2 |
| Banded herbicide application (over the row only) | 34 | 16 | 15 | 17 | 1 |
| Spot treatment | 31 | 14 | 13 | 18 | 0 |
| Shielded application (between rows) | 14 | 7 | 4 | 10 | 0 |
| No-till or zone-till | 3 | 1 | 1 | 1 | 1 |
| Other Practices | | | | | |
| Complete Field Spray | 19 | 9 | 5 | 12 | 1 |
| Broadcast spray | 17 | 8 | 5 | 9 | 0 |
| Preemergence Application | 7 | 3 | 1 | 6 | 0 |

**Stale Bed
Application (N=203)**

| | | |
|---------------|------------|-----------|
| Acres Treated | 174 | 4 |
| Growers | 24 | 11 |

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Roundup 4S | 17 | 8 | 122 | 3 | 11 | 4 | 1 |
| Gramoxone Max 3S | 2 | 1 | 24 | <1 | 1 | 1 | 0 |
| Bicep II | 1 | | 15 | <1 | 0 | 1 | 0 |
| Bicep | 1 | | 10 | <1 | 0 | 1 | 0 |
| Aatrex | 1 | | 15 | <1 | 0 | 0 | 0 |
| Scythe 4.2 | 0 | | | | | | |
| Flaming | 1 | | 12 | <1 | 0 | 1 | 0 |
| Mechanical | 2 | 1 | 3.4 | <1 | 0 | 0 | 0 |

**Preemergence Soil Applied Annual Grass and
Broadleaf Herbicides (N=203)**

| | | |
|---------------|-------------|-----------|
| Acres Treated | 4026 | 90 |
| Growers | 162 | 75 |

| Pesticide³ | #Growers | %Growers | #Acres | %Acres | Excellent | Good | Poor |
|------------------------------|-----------------|-----------------|---------------|---------------|------------------|-------------|-------------|
| Aatrex 4L | 80 | 37 | 2524 | 56 | 31 | 45 | 3 |
| Dual Magnum | 76 | 35 | 2119 | 47 | 35 | 36 | 4 |
| Bicep Magnum | 50 | 23 | 1267 | 28 | 17 | 32 | 1 |
| Prowl H20 | 49 | 23 | 1196 | 27 | 16 | 29 | 2 |
| Lasso 4EC | 24 | 11 | 2119 | 25 | 7 | 16 | 0 |
| Bicep Lite Magnum | 27 | 13 | 493 | 11 | 12 | 13 | 2 |
| Eradicane 6E | 7 | 3 | 349 | 8 | 3 | 4 | 0 |
| Sutan+ 6.7E | 8 | 4 | 340 | 8 | 2 | 4 | 1 |
| Princep 80WP | 18 | 8 | 281 | 6 | 4 | 14 | 0 |
| Frontier 6.0 | 3 | 1 | 87 | 2 | 1 | 2 | 0 |
| Laddox | 6 | 3 | 176 | 4 | 1 | 3 | 0 |
| Sutazine 6ME | 0 | | | | | | |

³See Appendix A for Brand names and active ingredients

Vertebrate Pest Management Section

Question C4. Which of these vertebrate pests require routine annual management, require occasional management, or are never a problem in your sweet corn fields? (Please circle your answers) (N=205)

| Rank | Vertebrate | Annual Mgmt | Weighed Number |
|------|------------|-------------|----------------|
| 1 | Birds | 102 | 558 |
| 2 | Raccoons | 87 | 514 |
| 3 | Deer | 54 | 352 |
| 4 | Porcupine | 9 | 48 |
| 5 | Skunks | 4 | 38 |
| 6 | Coyote | 4 | 34 |
| 7 | Turkeys | 4 | 24 |
| 8 | Bears | 5 | 28 |
| 9 | Squirrels | 5 | 20 |
| 10 | Geese | 3 | 12 |
| 11 | Possums | 1 | 8 |
| 12 | Beaver | 1 | 8 |

Question G1. Which strategies do you use to manage birds? (Please circle the strategies that you use and their effectiveness: excellent, good, poor.) (N=146)

| Strategy | #Growers | %Growers | Excellent | Good | Poor |
|-------------------------------------|----------|----------|-----------|------|------|
| Scare-eye balloons | 66 | 31 | 5 | 40 | 19 |
| Chop and leave debris after harvest | 38 | 18 | 2 | 25 | 11 |
| Recorded distress call devices | 28 | 13 | 4 | 12 | 12 |
| Cannons | 25 | 12 | 2 | 15 | 7 |
| Shell crackers | 20 | 9 | 2 | 10 | 8 |
| Shooting | 14 | 6 | 6 | 3 | 4 |
| Avitrol bait | 11 | 5 | 2 | 4 | 5 |
| Hanging bird carcass | 3 | 1 | 2 | 1 | 0 |
| Dogs | 1 | | 0 | 1 | 0 |
| Fake owl | 1 | | 0 | 1 | 0 |
| Scarecrow | 1 | | 0 | 1 | 0 |
| Netting | 2 | 1 | 2 | 0 | 0 |
| Treated seed | 1 | | 1 | 0 | 0 |

Question G2. Which strategies do you use to manage deer? (Please circle the strategies that you use and their effectiveness: excellent, good, poor.) (N=124)

| Strategy | #Growers | %Growers | Excellent | Good | Poor |
|----------------------|----------|----------|-----------|------|------|
| hunting/shooting | 58 | 27 | 12 | 25 | 19 |
| electric fence | 29 | 13 | 13 | 12 | 1 |
| dogs | 16 | 7 | 6 | 5 | 5 |
| Deer Away | 8 | 4 | 0 | 2 | 6 |
| Hinder | 6 | 3 | 0 | 4 | 2 |
| fence (non electric) | 5 | 2 | 2 | 1 | 2 |
| none | 16 | 7 | | | |
| not a problem | 7 | 3 | | | |

Question G3. Which strategies do you use to manage raccoons? (Please circle the strategies that you use and their effectiveness: excellent, good, poor.) (N=152)

| Strategy | #Growers | %Growers | Excellent | Good | Poor |
|-------------------------|----------|----------|-----------|------|------|
| trapping | 90 | 42 | 23 | 50 | 16 |
| dogs | 37 | 17 | 14 | 18 | 4 |
| electric fence | 35 | 16 | 10 | 13 | 11 |
| hunting/shooting | 7 | 3 | 2 | 2 | 1 |
| plant trap crop at edge | 3 | 1 | 0 | 1 | 1 |

Question G4. Other Vertebrate Pests and Strategies (Please list vertebrate, list strategies used and circle their effectiveness) (N=67)

| Pest and Strategy | #Growers | Excellent | Good | Poor |
|-------------------------------|-----------------|------------------|-------------|-------------|
| Skunks | 13 | | | |
| trap | 9 | 1 | 6 | 1 |
| electric fence | 1 | 0 | 1 | 0 |
| hunting/shooting | 1 | 1 | 0 | 0 |
| avoid planting near tree line | 1 | 0 | 1 | 0 |
| Bears | 16 | | | |
| hunting/shooting | 4 | 2 | 1 | 1 |
| dogs | 3 | 1 | 2 | 0 |
| radio | 3 | 0 | 2 | 1 |
| electric fence | 2 | 2 | 0 | 0 |
| coyote alarm from USDA | 2 | 0 | 0 | 2 |
| none | 3 | 0 | 0 | 1 |
| Squirrel | 8 | | | |
| trap | 3 | 0 | 2 | 1 |
| dogs | 1 | 0 | 0 | 1 |
| electric netting | 1 | 0 | 1 | 0 |
| sharing | 1 | 0 | 1 | 0 |
| Porcupine | 15 | | | |
| trap | 6 | 2 | 3 | 0 |
| hunting/shooting | 5 | 3 | 2 | 0 |
| plant more | 1 | 0 | 0 | 1 |
| Woodchuck | 7 | | | |
| hunting/shooting | 4 | 3 | 1 | 0 |
| coyote | 2 | 2 | 0 | 0 |
| trap | 1 | 0 | 1 | 0 |
| Smoke bombs | 1 | 0 | 1 | 0 |
| Coyotes | 16 | | | |
| trap | 2 | 2 | 0 | 0 |
| electric fence | 1 | 0 | 0 | 0 |
| chase out | 1 | 0 | 1 | 0 |
| hunting/shooting | 1 | 0 | 0 | 1 |
| dog repellent | 1 | 0 | 0 | 1 |
| None | 6 | | | |

Pest Management Decision Making Section

Question H1. Who does insect trapping or field scouting on your farm (Please circle all that apply) (N=206)

| #Growers | %Growers | Who monitors for pests? |
|----------|----------|-----------------------------------|
| 146 | 68 | Grower |
| 35 | 16 | Farm employee |
| 24 | 11 | Private IPM scout/consultant |
| 24 | 11 | University/Extension scout |
| 28 | 13 | No one |
| 2 | 1 | Other: University/Extension scout |

Question H2. How important are these factors to you when choosing pesticides for use on your farm? (Please circle your answers) (N=203)

| Factors for choosing Pesticides | Rank | Score* | Important | | |
|---|------|--------|-----------|----------|-----|
| | | | Very | Somewhat | Not |
| Effectiveness against pest compared to alternative products | 1 | 670 | 159 | 17 | 2 |
| Applicator hazard (toxicity to humans) | 2 | 646 | 141 | 41 | 4 |
| Customer relations (food safety concerns) | 3 | 566 | 113 | 57 | 8 |
| Label restrictions (reentry and preharvest intervals, protective equipment) | 4 | 522 | 102 | 57 | 11 |
| Impact on beneficials (parasites, predators, pollinators) | 5 | 516 | 92 | 74 | 7 |
| Other potential nontarget and environmental impacts | 6 | 492 | 90 | 66 | 9 |
| Cost per treatment | 7 | 482 | 77 | 87 | 10 |
| Formulations (liquid vs dry, water soluble bags) | 8 | 366 | 50 | 83 | 28 |
| Storage requirements | 9 | 336 | 42 | 84 | 32 |
| Size or type of packaging | 10 | 334 | 43 | 81 | 38 |

*The score was determined by multiplying very important by 4, somewhat important by 2, and not important by 0.

Question H3. How often (frequently, occasionally, never) do you use the following weather information in making your pest management decisions? (please circle your answers) (N=205)

| Weather Information | Rank | Frequently | Occasionally | Never |
|---|------|------------|--------------|-------|
| Forecasts for next rain | 1 | 183 | 11 | 10 |
| Wind speed forecast | 2 | 152 | 25 | 14 |
| Rainfall total (for effect on spray residues) | 3 | 108 | 47 | 24 |
| Temperatures (for degree day models) | 4 | 73 | 60 | 45 |

Question H4. If weather information was readily available, would you use it for? (please circle your answers) (N=203)

| Weather Information | Yes | No |
|---|-----|----|
| Forecasts for next rain | 193 | 8 |
| Wind speed forecast | 170 | 13 |
| Rainfall total (for effect on spray residues) | 144 | 29 |
| Temperatures (for degree day models) | 142 | 33 |

Question H5. How often do you use the following personal protective equipment and protective clothing when mixing and/or applying pesticides (please circle your answer) (N=198)

| Personal Protective Equipment | #Growers | %Growers | Always | Occasionally | Never | Not Applicable |
|-------------------------------|----------|----------|--------|--------------|-------|----------------|
| Long pants | 189 | 88 | 175 | 10 | 1 | 3 |
| Long-sleeved shirt | 189 | 88 | 134 | 50 | 2 | 3 |
| Gloves | 189 | 88 | 122 | 58 | 6 | 3 |
| Respirator | 177 | 82 | 82 | 62 | 29 | 4 |
| Nitrile gloves | 160 | 74 | 68 | 43 | 41 | 8 |
| Goggles | 175 | 81 | 56 | 72 | 42 | 4 |
| Boots (chemical resistant) | 178 | 83 | 54 | 63 | 57 | 4 |
| Latex gloves | 161 | 75 | 36 | 44 | 71 | 10 |
| Chemical resistant suit | 169 | 78 | 34 | 61 | 68 | 6 |
| Face shield | 164 | 76 | 30 | 49 | 80 | 5 |
| Cotton gloves | 151 | 70 | 5 | 16 | 121 | 9 |

Question H6. Which of the following pesticide application equipment do you use for sweet corn? (please circle all that apply.) (N=199)

| #Growers | %Growers | Pesticide application equipment |
|----------|----------|-------------------------------------|
| 106 | 49 | Boom sprayer without drop nozzles |
| 81 | 38 | Air blast sprayer |
| 51 | 24 | Boom spray with drop nozzles |
| 38 | 18 | Back pack sprayer |
| 11 | 5 | Zea-later (or other oil applicator) |
| 3 | 1 | Shielded sprayer |
| 2 | 1 | Air assisted sprayer |
| 12 | 6 | Other |

Question H7. How important are these sources of information in making your pest management decisions? (please circle your answers) (N=203)

| Information Sources | Rank | Score* | Important | | |
|--|------|--------|-----------|----------|-----|
| | | | Very | Somewhat | Not |
| New England Vegetable Management Guide | 1 | 638 | 141 | 37 | 7 |
| Extension newsletters and/or pest alerts | 2 | 636 | 137 | 44 | 6 |
| Off season educational meetings | 3 | 540 | 100 | 70 | 6 |
| University/Extension staff | 4 | 526 | 103 | 57 | 9 |
| Other growers | 5 | 476 | 81 | 76 | 16 |
| Suppliers/dealers | 6 | 442 | 73 | 75 | 19 |
| Twilight meetings | 7 | 336 | 48 | 72 | 36 |
| Trade publications | 8 | 332 | 32 | 102 | 27 |
| Web sites | 9 | 250 | 25 | 75 | 57 |
| Other: Crop consultants | 10 | 24 | 6 | 0 | 0 |

*The score was determined by multiplying very important by 4, somewhat important by 2, and not important by 0.

Question H9. How would you describe your crop production practices? (please circle your answer) (N=197)

| Crop Production | #Growers | %Growers |
|------------------------|-----------------|-----------------|
| Conventional | 105 | 49 |
| IPM | 95 | 44 |
| Organic | 32 | 15 |
| Other | 9 | 4 |

Special thanks to the hundreds of growers who supported this project.

Also to the members of the New England Pest Management Network team including, Glen Koehler and James Dill-University of Maine, Candace Bartholomew-University of Connecticut, Alan Eaton-University of New Hampshire, Margaret Siligato-University of Rhode Island, Ann Hazelrigg and Sarah Kingsley-Richards-University of Vermont, and Ruth Hazzard, William Coli, Amanda Duphily, and Patricia Vittum-University of Massachusetts.

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Funding provided by the USDA Northeast Pest Management Center.

Appendix A: Pesticide Product Brand Names and Active Ingredients

| Pesticide | Active Ingredient |
|--------------------------|---------------------------------|
| Aatrex 4L | atrazine |
| Ambush | permethrin |
| Amine 4 | 2,4-D amine |
| Asana XL | esfenvalerate |
| Avaunt | indoxacarb |
| Basagran 4E | betazon |
| Baythroid 2 | cyfluthrin |
| Bicep Magnum | metolachlor and atrazine |
| Bicep Lite Magnum | metolachlor and atrazine |
| Bravo Ultrex 82 WDG | chlorothalonil |
| Capture 2EC | bifenthrin |
| Counter 15G | terbufos |
| Credit | glyphosate |
| Cruiser 5FS | thiamethoxam |
| Dipel DF or ES | Bacillus thuringiensis kurstaki |
| Dithane | mancozeb |
| Dual Magnum | metolachlor |
| Entrust | spinosad |
| Eradicane 6E | EPTC and safener |
| Evik 80W | ametryn |
| Force 3G | tefluthrin |
| Fortress 5G | chlorethoxy fos |
| Frontier 6.0 | dimethenamid |
| Gaicho 600 | imidacloprid |
| Golden Natural Spray Oil | soybean oil |
| Gramoxone Max 3S | paraquat |
| Intrepid 2F | methoxyfenoxide |
| Laddox | bentazon and atrazine |

| Pesticide | Active Ingredient |
|----------------|--------------------------------|
| Lannate SP | methomyl |
| Larvin 3.2 | thiodicarb |
| Lasso 4EC | alachlor |
| Lorox 50DF | linuron |
| Lorsban 4E | chlorpyrifos |
| Maneb | maneb |
| Manzate | mancozeb |
| Metasystox-R | oxydemeton-methyl |
| Microtech | alachlor |
| Mocap 10G | ethoprop |
| M-Pede | potassium salts of fatty acids |
| Mustang | zeta-cypermethrin |
| Penncozeb | mancozeb |
| Permit 57 WDG | halosulfuron |
| Pounce | permethrin |
| Princep 80WP | simazine |
| Prowl H20 | pendimethalin |
| Roundup 4S | glyphosate |
| Scythe 4.2 | pelargonic acid |
| Sevin XLR Plus | carbaryl |
| Spintor 2SC | spinosad |
| Sutan+ 6.7E | butylate |
| Sutazine 6ME | alachlor and atrazine |
| Thimet 20G | phorate |
| Thionex 50w | endosulfan |
| Tilt | propiconazole |
| Warrior | lambda-cyhalothrin |
| Xentari | Bacillus thuringiensis aizawai |