



New England Apple Management Survey
Pest management Resources Online for New England
(PRO New England)



This survey should be completed by the person most responsible for crop management decisions on your farm. Please complete if you grow APPLES.

Do you grow Apples for sale? (Please circle your answer)

Yes ----> continue below

No ----> if no, please return questionnaire using the self-addressed stamped envelope – Thank you

Please fill in the blanks or circle your answers where indicated in the questions below for apples.

A1. How many acres of apples did you manage in 2003? (Please fill in your answer)

_____Acres

A2. Over the past five years, what is your average annual yield of harvested apples per acre? (Please fill in your answer)

_____ Bushels/Acre

A3. What percentage of your apple crop is sold through each of these markets?

Fresh market, wholesale	_____%
Fresh market, retail (pre-picked)	_____%
Processing	_____%
U-Pick /Pick Your Own	_____%
Other (specify _____)	_____%
Total	100 %

If you have any questions about this survey please contact Natalia P. Clifton at (413) 545-1044 or email at nclifton@ent.umass.edu

A4. Which of the following describe you planting densities? (Please estimate the approximate percentage of your apple orchard that is planted at each density.)

Fewer than 120 trees per acre _____ %
121 to 340 trees per acre _____ %
More than 340 trees per acre _____ %
Total 100 %

Horticultural Management for APPLES

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

dormant pruning
summer pruning
growth regulators to suppress shoot growth

B2. Do you use tissue analysis to determine fertilizer needs in most years? (Circle your answer)

No
Annually
Every second year
Every third year
Do not use fertilizer
Other (please specify) _____

General Pest Management Information for APPLES

C1. Please estimate your average number of pesticide applications for apples used in a typical year:

Number of times you spray specifically for insects each year _____
Number of times you spray specifically for mites each year _____
Number of times you spray specifically for weeds each year _____
Number of times you spray specifically for diseases each year _____

C2. Do you use Tree Row Canopy Volume for determining pesticide applications rates? (please circle your answer)

Yes
No
Not sure

C3. Which of these insects/mites require routine annual management, require occasional management, or are never a problem on your apple orchard? (Please circle your answers)

Insects & Mites

Pear thrips	Routine, annual management	Occasional pest	Never a problem
Insect trunk borers	Routine, annual management	Occasional pest	Never a problem
European red mite	Routine, annual management	Occasional pest	Never a problem
San Jose scale	Routine, annual management	Occasional pest	Never a problem
Rosy apple aphid	Routine, annual management	Occasional pest	Never a problem
Climbing cutworms	Routine, annual management	Occasional pest	Never a problem
Tarnished plant bug	Routine, annual management	Occasional pest	Never a problem
Tentiform leafminers	Routine, annual management	Occasional pest	Never a problem
Green pug moth	Routine, annual management	Occasional pest	Never a problem
Oriental fruit moth	Routine, annual management	Occasional pest	Never a problem
European apple sawfly	Routine, annual management	Occasional pest	Never a problem
Green fruitworm	Routine, annual management	Occasional pest	Never a problem
Gypsy moth	Routine, annual management	Occasional pest	Never a problem
Apple pith moth	Routine, annual management	Occasional pest	Never a problem
White apple leafhopper	Routine, annual management	Occasional pest	Never a problem
Plum curculio	Routine, annual management	Occasional pest	Never a problem
Obliquebanded leafroller	Routine, annual management	Occasional pest	Never a problem
Redbanded leafroller	Routine, annual management	Occasional pest	Never a problem
Mullein bug	Routine, annual management	Occasional pest	Never a problem
Apple and/or spirea aphid	Routine, annual management	Occasional pest	Never a problem
Apple maggot	Routine, annual management	Occasional pest	Never a problem
Japanese beetles	Routine, annual management	Occasional pest	Never a problem
Codling moth, Lesser appleworm	Routine, annual management	Occasional pest	Never a problem
Twospotted spider mite	Routine, annual management	Occasional pest	Never a problem
Rose leafhopper	Routine, annual management	Occasional pest	Never a problem
Potato leafhopper	Routine, annual management	Occasional pest	Never a problem
Woolly apple aphid	Routine, annual management	Occasional pest	Never a problem
Stinkbugs	Routine, annual management	Occasional pest	Never a problem
European corn borer	Routine, annual management	Occasional pest	Never a problem
Other insects/mites (Specify: _____)	Routine, annual management	Occasional pest	
Other insects/mites (Specify: _____)	Routine, annual management	Occasional pest	

C4. Which of these diseases require routine annual management, require occasional management, or are never a problem on your apple orchard? (Please circle your answers)

Diseases

Phytophthora rot	Routine, annual management	Occasional disease	Never a problem
Fire blight	Routine, annual management	Occasional disease	Never a problem
Apple Scab	Routine, annual management	Occasional disease	Never a problem
Powdery mildew	Routine, annual management	Occasional disease	Never a problem
Cedar apple rust	Routine, annual management	Occasional disease	Never a problem
Quince rust	Routine, annual management	Occasional disease	Never a problem
Moldy core	Routine, annual management	Occasional disease	Never a problem
Calyx end rot, Dry-eye	Routine, annual management	Occasional disease	Never a problem
Fly speck	Routine, annual management	Occasional disease	Never a problem
Sooty blotch	Routine, annual management	Occasional disease	Never a problem
Bitter rot	Routine, annual management	Occasional disease	Never a problem
Black rot	Routine, annual management	Occasional disease	Never a problem
Post-Harvest rots	Routine, annual management	Occasional disease	Never a problem
Other diseases:(Specify: _____)	Routine, annual management	Occasional disease	
Other diseases:(Specify: _____)	Routine, annual management	Occasional disease	

C5. Which of these pests require routine annual management, require occasional management, or are never a problem on your apple orchard? (Please circle your answers)

Weeds & Vertebrate pests

Annual Broadleaf Weeds	Routine, annual management	Occasional pest	Never a problem
Perennial Broadleaf Weeds	Routine, annual management	Occasional pest	Never a problem
Perennial Woody Weeds	Routine, annual management	Occasional pest	Never a problem
Annual Grasses	Routine, annual management	Occasional pest	Never a problem
Perennial Grasses	Routine, annual management	Occasional pest	Never a problem
Deer	Routine, annual management	Occasional pest	Never a problem
Voles	Routine, annual management	Occasional pest	Never a problem
Rabbits	Routine, annual management	Occasional pest	Never a problem
Other Vertebrate pests (Specify: _____)	Routine, annual management	Occasional management	
Other Vertebrate pests (Specify: _____)	Routine, annual management	Occasional management	

In order to understand the importance of various pesticides and alternative strategies to APPLE pest management, the following sections D-F ask for specific information about your pest management strategies and actual pesticide use.

General Pest Management Information for APPLE

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

- (a) trapping
- (b) insecticide-treated traps
- (c) mating disruption
- (d) release predatory mites and insects
- (e) orchard monitoring of pest and beneficial populations
- (f) remove wild/alternate hosts and abandoned orchards
- (g) use degree-day models to time applications
- (h) border row spraying rather than entire orchards
- (i) row cropping and annual tillage of adjacent cropland
- (j) Orchard floor groundcover/habitat management

For each of the following insects and mites, indicate the **percentage of your apple orchard treated in 2003**. If you **did not treat for the pest**, put **“0”** in the “percent treated” slot. If question is left blank, we won’t know if you meant zero percent treated or if you skipped the question. Please circle the pesticides that you used and the effectiveness of the management strategy (**excellent, good, poor**). If you used non-pesticide strategies to manage a pest please specify them in the **“Other Strategies Employed”** area.

D2. Borers, Dogwood borer and Roundheaded apple tree borer

a) **Percent of apple orchard treated for borers in 2003** _____ %

		Effectiveness			
		Excellent	Good	Poor	
b) Pesticide(s) used (circle all that apply)		Excellent	Good	Poor	
	Lorsban 50WS (chlorpyrifos)	Excellent	Good	Poor	
	Lorsban 4EC with oil (chlorpyrifos)	Excellent	Good	Poor	
	Thiodan 50WP (endosulfan)	Excellent	Good	Poor	
Other Pesticide(s) used:					
	(Please Specify) _____	Excellent	Good	Poor	
Other Strategies Employed:	(Please Specify) _____		Excellent	Good	Poor
	(Please Specify) _____		Excellent	Good	Poor

D3. European red mite

a) Percent of apple orchard treated for European red mite in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness				
	Excellent	Good	Poor		
Acramite 50WS (bifenazate)	Excellent	Good	Poor		
Agrimek 0.15EC (abamectin)	Excellent	Good	Poor		
Apollo 42SC (clofentezine)	Excellent	Good	Poor		
Carzol 92SP (formetanate hydrochloride)	Excellent	Good	Poor		
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor		
Kelthane 50WP (dicofol)	Excellent	Good	Poor		
M-Pede (insecticidal soap)	Excellent	Good	Poor		
Oil (Damoil, Sunspray Ultra Fine, Volck Sup)	Excellent	Good	Poor		
Pyramite 60WS (pyridaben)	Excellent	Good	Poor		
Safer's Insecticidal Soap	Excellent	Good	Poor		
Savey 50WP (hexythiazox)	Excellent	Good	Poor		
Valero (cinnamaldehyde)	Excellent	Good	Poor		
Vendex 50WP (fenbutatin-oxide)	Excellent	Good	Poor		
Vydate 2L (oxamyl)	Excellent	Good	Poor		
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D4. San Jose scale

a) Percent of apple orchard treated for San Jose scale in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Diazinon (diazinon)	Excellent	Good	Poor
Distance L (pyriproxyfen)	Excellent	Good	Poor
Esteem 0.86EC (pyriproxyfen)	Excellent	Good	Poor
Guthion 50WP (azinphos-methyl)	Excellent	Good	Poor
Imidan 70WP (phosmet)	Excellent	Good	Poor
Lorsban 50WS (chlorpyrifos)	Excellent	Good	Poor
Lorsban 4EC with oil (chlorpyrifos)	Excellent	Good	Poor
Oil (superior horticultural spray type)	Excellent	Good	Poor
Provado 1.6F (imidacloprid)	Excellent	Good	Poor

Supracide 25WP (methidathion)	Excellent	Good	Poor		
Other Pesticide(s) used:					
(Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D5. Rosy apple aphid

a) Percent of apple orchard treated for rosy apple aphid in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Ambush EC or 25WP (permethrin)	Excellent	Good	Poor
Asana EC (esfenvalerate)	Excellent	Good	Poor
Assail 70WP (acetamiprid)	Excellent	Good	Poor
Aza-Direct 1.2EC (azadirachtin)	Excellent	Good	Poor
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor
Diazinon 50WSB (diazinon)	Excellent	Good	Poor
Digon EC (dimethoate)	Excellent	Good	Poor
Dimate EC (dimethoate)	Excellent	Good	Poor
Distance L (pyriproxyfen)	Excellent	Good	Poor
Di-syston G (disulfoton)	Excellent	Good	Poor
Esteem 0.86EC (pyriproxyfen)	Excellent	Good	Poor
Imidan 70WP (phosmet)	Excellent	Good	Poor
Lannate L or 90SP (methomyl)	Excellent	Good	Poor
Lorsban 50WS (chlorpyrifos)	Excellent	Good	Poor
Lorsban 4EC with oil (chlorpyrifos)	Excellent	Good	Poor
M-Pede (insecticidal soap)	Excellent	Good	Poor
Oil (Damoil, Sunspray Ultra Fine, Volck Sup)	Excellent	Good	Poor
Phaser (endosulfan)	Excellent	Good	Poor
Pounce EC or 25WP (permethrin)	Excellent	Good	Poor
Provado F (imidacloprid)	Excellent	Good	Poor
Safer's Insecticidal Soap	Excellent	Good	Poor
Sevin F, 4EC XLR Plus, or 80S (carbaryl)	Excellent	Good	Poor
Supracide 25WP (methidathion)	Excellent	Good	Poor
Thiodan 50 WP (endosulfan)	Excellent	Good	Poor
Valero L (cinnamaldehyde)	Excellent	Good	Poor
Vydate (oxamyl)	Excellent	Good	Poor

Other Pesticide(s) used:
 (Please Specify) _____ Excellent Good Poor

Other Strategies Employed: (Please Specify) _____ Excellent Good Poor
 (Please Specify) _____ Excellent Good Poor

D6. Climbing cutworms

a) Percent of apple orchard treated for climbing cutworms in 2003 _____ %

b) Pesticide(s) used (circle all that apply)

	Effectiveness		
	Excellent	Good	Poor
Lorsban 50WS (chlorpyrifos)	Excellent	Good	Poor
Lorsban 4EC with oil (chlorpyrifos)	Excellent	Good	Poor
Supracide 25WP (methidathion)	Excellent	Good	Poor

Other Pesticide(s) used:
 (Please Specify) _____ Excellent Good Poor

Other Strategies Employed: (Please Specify) _____ Excellent Good Poor
 (Please Specify) _____ Excellent Good Poor

D7. Tarnished plant bug

a) Percent of apple orchard treated for tarnished plant bug in 2003 _____ %

b) Pesticide(s) used (circle all that apply)

	Effectiveness		
	Excellent	Good	Poor
Ambush 2EC or 25WP (permethrin)	Excellent	Good	Poor
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor
Avaunt 30DG (indoxacarb)	Excellent	Good	Poor
Aza-Direct 1.2EC (azadirachtin)	Excellent	Good	Poor
Azinphos-M 50WP (azinphos-methyl)	Excellent	Good	Poor
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor
Digon EC (dimethoate)	Excellent	Good	Poor
Dimate EC (dimethoate)	Excellent	Good	Poor
Guthion 50WP (azinphos-methyl)	Excellent	Good	Poor
Imidan 70WP (phosmet)	Excellent	Good	Poor
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor
Lorsban 50WS (chlorpyrifos)	Excellent	Good	Poor
Phaser (endosulfan)	Excellent	Good	Poor
Pounce 3.2EC or 25WP (permethrin)	Excellent	Good	Poor
Rotenone (rotenone)	Excellent	Good	Poor

Sevin 50WP,F, 4EC XLR Plus, 80S (carbaryl)	Excellent	Good	Poor		
Sniper (azinphos-methyl)	Excellent	Good	Poor		
Thiodan (endosulfan)	Excellent	Good	Poor		
Vydate (oxamyl)	Excellent	Good	Poor		
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D8. Apple blotch and spotted tentiform leafminer

a) Percent of apple orchard treated for tentiform leafminers in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness				
	Excellent	Good	Poor		
Agrimek 0.15EC (abamectin)	Excellent	Good	Poor		
Ambush 2EC or 25WP (permethrin)	Excellent	Good	Poor		
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor		
Assail 70WP (acetamiprid)	Excellent	Good	Poor		
Confirm 2F (tebufenozide)	Excellent	Good	Poor		
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor		
Digon EC (dimethoate)	Excellent	Good	Poor		
Dimate EC (dimethoate)	Excellent	Good	Poor		
Esteem 0.86EC (pyriproxyfen)	Excellent	Good	Poor		
Intrepid 2F (methoxyfenoxide)	Excellent	Good	Poor		
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor		
M-Pede (insecticidal soap)	Excellent	Good	Poor		
Neemix (azadirachtin)	Excellent	Good	Poor		
Phaser (endosulfan)	Excellent	Good	Poor		
Pounce 3.2EC or 25WP (permethrin)	Excellent	Good	Poor		
Provado 1.6F (imidacloprid)	Excellent	Good	Poor		
Safer's Insecticidal Soap	Excellent	Good	Poor		
Spintor 2SC (spinosad)	Excellent	Good	Poor		
Thiodan 3EC or 50WP (endosulfan)	Excellent	Good	Poor		
Vydate 2L (oxamyl)	Excellent	Good	Poor		
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D9. European Apple Sawfly

a) Percent of apple orchard treated for European apple sawfly in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness				
	Excellent	Good	Poor		
Ambush 2EC or 25WP (permethrin)	Excellent	Good	Poor		
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor		
Azinphos-M 50WP (azinphos-methyl)	Excellent	Good	Poor		
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor		
Diazinon (diazinon)	Excellent	Good	Poor		
Guthion 50WP (azinphos-methyl)	Excellent	Good	Poor		
Imidan 70WP (phosmet)	Excellent	Good	Poor		
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor		
Pounce 3.2EC or 25WP (permethrin)	Excellent	Good	Poor		
Sevin F, 4EC XLR Plus, or 80S (carbaryl)	Excellent	Good	Poor		
Sniper (azinphos-methyl)	Excellent	Good	Poor		
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D10. Green fruitworms

a) Percent of apple orchard treated for green fruitworms in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Ambush 2EC or 25WP (permethrin)	Excellent	Good	Poor
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor
Azinphos-M 50WP (azinphos-methyl)	Excellent	Good	Poor
Bacillus thuringiensis (Agree, Dipel, Javelin, MVP, Xentari)	Excellent	Good	Poor
Confirm 2F (tebufenozide)	Excellent	Good	Poor
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor
Guthion 50WP (azinphos-methyl)	Excellent	Good	Poor
Imidan 70WP (phosmet)	Excellent	Good	Poor
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor
Phaser (endosulfan)	Excellent	Good	Poor
Pounce 3.2EC or 25WP (permethrin)	Excellent	Good	Poor

Thiodan 3EC or 50WP (endosulfan)	Excellent	Good	Poor		
Other Pesticide(s) used:					
(Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D11. White Apple and Rose Leafhoppers

a) Percent of apple orchard treated for white apple and/or rose leafhoppers in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness			Excellent	Good	Poor
	Excellent	Good	Poor			
Agrimek 0.15EC (abamectin)	Excellent	Good	Poor			
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor			
Assail 70WP (acetamiprid)	Excellent	Good	Poor			
Avaunt 30DG (indoxacarb)	Excellent	Good	Poor			
Aza-Direct 1.2EC (azadirachtin)	Excellent	Good	Poor			
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor			
Diazinon (diazinon)	Excellent	Good	Poor			
Digon EC (dimethoate)	Excellent	Good	Poor			
Dimate EC (dimethoate)	Excellent	Good	Poor			
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor			
M-Pede (insecticidal soap)	Excellent	Good	Poor			
Neemix (azadirachtin)	Excellent	Good	Poor			
Phaser (endosulfan)	Excellent	Good	Poor			
Provado 1.6F (imidacloprid)	Excellent	Good	Poor			
Pyramite 60WS (pyridaben)	Excellent	Good	Poor			
Pyrenone (pyrethrin)	Excellent	Good	Poor			
Safer's Insecticidal Soap	Excellent	Good	Poor			
Sevin 80S (carbaryl)	Excellent	Good	Poor			
Surround 95WP (kaolin clay)	Excellent	Good	Poor			
Thiodan 3EC or 50WP (endosulfan)	Excellent	Good	Poor			
Vydate 2L (oxamyl)	Excellent	Good	Poor			
Other Pesticide(s) used:						
(Please Specify) _____	Excellent	Good	Poor			
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor	
(Please Specify) _____			Excellent	Good	Poor	

D12. Plum Curculio

a) Percent of apple orchard treated for plum curculio in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness				
	Excellent	Good	Poor		
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor		
Avaunt 30DG (indoxacarb)	Excellent	Good	Poor		
Azinphos-M 50WP (azinphos-methyl)	Excellent	Good	Poor		
Danitol 2.4EC (fenprothrin)	Excellent	Good	Poor		
Diazinon (diazinon)	Excellent	Good	Poor		
Digon EC (dimethoate)	Excellent	Good	Poor		
Dimate EC (dimethoate)	Excellent	Good	Poor		
Guthion 50WP (azinphos-methyl)	Excellent	Good	Poor		
Imidan 70WP (phosmet)	Excellent	Good	Poor		
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor		
Lorsban 50WS (chlorpyrifos)	Excellent	Good	Poor		
Sevin F, 4EC XLR Plus, or 80S (carbaryl)	Excellent	Good	Poor		
Sniper (azinphos-methyl)	Excellent	Good	Poor		
Surround 95WP (kaolin clay)	Excellent	Good	Poor		
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D13. Obliquebanded Leafroller

a) Percent of apple orchard treated for obliquebanded leafroller in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Ambush 2EC or 25WP (permethrin)	Excellent	Good	Poor
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor
Aza-Direct 1.2EC (azadirachtin)	Excellent	Good	Poor
Azinphos-M 50WP (azinphos-methyl)	Excellent	Good	Poor
Bacillus thuringiensis (Agree, Dipel, Javelin, MVP, Xentari)	Excellent	Good	Poor
Confirm 2F (tebufenozide)	Excellent	Good	Poor
Danitol 2.4EC (fenprothrin)	Excellent	Good	Poor
Diazinon (diazinon)	Excellent	Good	Poor

Digon EC (dimethoate)	Excellent	Good	Poor	
Dimate EC (dimethoate)	Excellent	Good	Poor	
Esteem 0.86EC or 35WP (pyriproxyfen)	Excellent	Good	Poor	
Guthion 50WP (azinphos-methyl)	Excellent	Good	Poor	
Imidan 70WP (phosmet)	Excellent	Good	Poor	
Intrepid 2F (methoxyfenoxide)	Excellent	Good	Poor	
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor	
M-Pede (insecticidal soap)	Excellent	Good	Poor	
Phaser (endosulfan)	Excellent	Good	Poor	
Pounce 3.2EC or 25WP (permethrin)	Excellent	Good	Poor	
Safer's Insecticidal Soap	Excellent	Good	Poor	
Sevin F, 4EC XLR Plus, or 80S (carbaryl)	Excellent	Good	Poor	
Sniper (azinphos-methyl)	Excellent	Good	Poor	
Spintor 2SC (spinosad)	Excellent	Good	Poor	
Surround 95WP (kaolin clay)	Excellent	Good	Poor	
Thiodan 3EC or 50WP (endosulfan)	Excellent	Good	Poor	
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor	
Other Strategies Employed: (Please Specify) _____		Excellent	Good	Poor
(Please Specify) _____		Excellent	Good	Poor

D14. Redbanded leafroller

a) Percent of apple orchard treated for redbanded leafroller in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Ambush EC or 25WP (permethrin)	Excellent	Good	Poor
Asana EC (esfenvalerate)	Excellent	Good	Poor
Avaunt 30 DG (indoxacarb)	Excellent	Good	Poor
Aza-Direct 1.2EC (azadirachtin)	Excellent	Good	Poor
Azinphos-M 50WP (azinphos-methyl)	Excellent	Good	Poor
Bacillus thuringiensis (Agree, Dipel, Javelin, MVP, Xentari)	Excellent	Good	Poor
Confirm 2F (tebufenozide)	Excellent	Good	Poor
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor
Guthion 50WP (azinphos-methyl)	Excellent	Good	Poor
Imidan 70WP (phosmet)	Excellent	Good	Poor
Intrepid 2F (methoxyfenoxide)	Excellent	Good	Poor

Lannate L or 90SP (methomyl)	Excellent	Good	Poor	
M-Pede (insecticidal soap)	Excellent	Good	Poor	
Phaser (endosulfan)	Excellent	Good	Poor	
Pounce EC or 25WP (permethrin)	Excellent	Good	Poor	
Safer's Insecticidal Soap	Excellent	Good	Poor	
Sevin F, 4EC XLR Plus, or 80S (carbaryl)	Excellent	Good	Poor	
Sniper (azinphos-methyl)	Excellent	Good	Poor	
Surround 95WP (kaolin clay)	Excellent	Good	Poor	
Thiodan (endosulfan)	Excellent	Good	Poor	
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor	
Other Strategies Employed: (Please Specify) _____		Excellent	Good	Poor
(Please Specify) _____		Excellent	Good	Poor

D15. Mullein Plant Bug

a) Percent of apple orchard treated for mullein plant bug in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness			
	Excellent	Good	Poor	
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor	
Carzol 92SP (formetanate hydrochloride)	Excellent	Good	Poor	
Diazinon (diazinon)	Excellent	Good	Poor	
Digon EC (dimethoate)	Excellent	Good	Poor	
Dimate EC (dimethoate)	Excellent	Good	Poor	
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor	
Lorsban 50WS (chlorpyrifos)	Excellent	Good	Poor	
Provado 1.6F (imidacloprid)	Excellent	Good	Poor	
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor	
Other Strategies Employed: (Please Specify) _____		Excellent	Good	Poor
(Please Specify) _____		Excellent	Good	Poor

D16. Apple aphid

a) Percent of apple orchard treated for apple aphid in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness				
	Excellent	Good	Poor		
Ambush 2EC or 25WP (permethrin)	Excellent	Good	Poor		
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor		
Assail 70WP (acetamiprid)	Excellent	Good	Poor		
Aza-Direct 1.2EC (azadirachtin)	Excellent	Good	Poor		
Diazinon (diazinon)	Excellent	Good	Poor		
Digon EC (dimethoate)	Excellent	Good	Poor		
Dimate EC (dimethoate)	Excellent	Good	Poor		
Distance L (pyriproxyfen)	Excellent	Good	Poor		
Di-syston (disulfoton)	Excellent	Good	Poor		
Esteem 0.86EC or 35WP (pyriproxyfen)	Excellent	Good	Poor		
Imidan 70WP (phosmet)	Excellent	Good	Poor		
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor		
M-Pede (insecticidal soap)	Excellent	Good	Poor		
Phaser (endosulfan)	Excellent	Good	Poor		
Pounce 3.2EC or 25WP (permethrin)	Excellent	Good	Poor		
Provado 1.6F (imidacloprid)	Excellent	Good	Poor		
Safer's Insecticidal Soap	Excellent	Good	Poor		
Sevin F, 4EC XLR Plus, or 80S (carbaryl)	Excellent	Good	Poor		
Thiodan 3EC or 50WP (endosulfan)	Excellent	Good	Poor		
Valero (cinnamaldehyde)	Excellent	Good	Poor		
Vydate 2L (oxamyl)	Excellent	Good	Poor		
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D17. Apple maggot

a) Percent of apple orchard treated for apple maggot in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness				
	Excellent	Good	Poor		
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor		
Avaunt 30DG (indoxacarb)	Excellent	Good	Poor		
Azinphos-M 50WP (azinphos-methyl)	Excellent	Good	Poor		
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor		
Diazinon (diazinon)	Excellent	Good	Poor		
Digon EC (dimethoate)	Excellent	Good	Poor		
Dimate EC (dimethoate)	Excellent	Good	Poor		
Guthion 50WP (azinphos-methyl)	Excellent	Good	Poor		
Imidan 70WP (phosmet)	Excellent	Good	Poor		
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor		
Neemix (azadirachtin)	Excellent	Good	Poor		
Sevin F, 4EC XLR Plus, or 80S (carbaryl)	Excellent	Good	Poor		
Sniper (azinphos-methyl)	Excellent	Good	Poor		
Spintor 2SC (spinosad)	Excellent	Good	Poor		
Surround 95WP (kaolin clay)	Excellent	Good	Poor		
Vydate 2L (oxamyl)	Excellent	Good	Poor		
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D18. Codling Moth

a) Percent of apple orchard treated for codling moth in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor
Assail 70WP (acetamiprid)	Excellent	Good	Poor
Avaunt 30DG (indoxacarb)	Excellent	Good	Poor
Azinphos-M 50WP (azinphos-methyl)	Excellent	Good	Poor
Bacillus thuringiensis (Agree, Dipel, Javelin, MVP, Xentari)	Excellent	Good	Poor
Confirm 2F (tebufenozide)	Excellent	Good	Poor

Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor	
Diazinon (diazinon)	Excellent	Good	Poor	
Digon EC (dimethoate)	Excellent	Good	Poor	
Dimate EC (dimethoate)	Excellent	Good	Poor	
Esteem 0.86EC or 35WP (pyriproxyfen)	Excellent	Good	Poor	
Guthion 50WP (azinphos-methyl)	Excellent	Good	Poor	
Imidan 70WP (phosmet)	Excellent	Good	Poor	
Intrepid 2F (methoxyfenoxide)	Excellent	Good	Poor	
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor	
Lorsban 50WS (chlorpyrifos)	Excellent	Good	Poor	
Methoxychlor (methoxychlor)	Excellent	Good	Poor	
M-Pede (insecticidal soap)	Excellent	Good	Poor	
Safer's Insecticidal Soap	Excellent	Good	Poor	
Sevin F, 4EC XLR Plus, or 80S (carbaryl)	Excellent	Good	Poor	
Spintor 2SC (spinosad)	Excellent	Good	Poor	
Surround 95WP (kaolin clay)	Excellent	Good	Poor	
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor	
Other Strategies Employed: (Please Specify) _____		Excellent	Good	Poor
(Please Specify) _____		Excellent	Good	Poor

D19. Twospotted Spider Mite

a) Percent of apple orchard treated for twospotted spider mite in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Acramite 50WS (bifenazate)	Excellent	Good	Poor
Agrimek 0.15EC (abamectin)	Excellent	Good	Poor
Apollo 42SC (clofentezine)	Excellent	Good	Poor
Aza-Direct 1.2EC (azadirachtin)	Excellent	Good	Poor
Azinphos-M 50WP (azinphos-methyl)	Excellent	Good	Poor
Carzol 92SP (formetanate hydrochloride)	Excellent	Good	Poor
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor
Kelthane 50WP (dicofol)	Excellent	Good	Poor
M-Pede (insecticidal soap)	Excellent	Good	Poor
Neemix (azadirachtin)	Excellent	Good	Poor
Oil (Damoil, Sunspray Ultra Fine, Volck Sup)	Excellent	Good	Poor
Pyramite 60WS (pyridaben)	Excellent	Good	Poor

Safer's Insecticidal Soap	Excellent	Good	Poor		
Savey 50WP (hexythiazox)	Excellent	Good	Poor		
Valero (cinnamaldehyde)	Excellent	Good	Poor		
Vendex 50WP (fenbutatin-oxide)	Excellent	Good	Poor		
Vydate 2L (oxamyl)	Excellent	Good	Poor		
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D20. Potato Leafhopper

a) Percent of apple orchard treated for potato leafhopper in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness				
	Excellent	Good	Poor		
Agrimek 0.15EC (abamectin)	Excellent	Good	Poor		
Asana 0.66EC (esfenvalerate)	Excellent	Good	Poor		
Assail 70WP (acetamiprid)	Excellent	Good	Poor		
Avaunt 30DG (indoxacarb)	Excellent	Good	Poor		
Aza-Direct 1.2EC (azadirachtin)	Excellent	Good	Poor		
Danitol 2.4EC (fenpropathrin)	Excellent	Good	Poor		
Diazinon (diazinon)	Excellent	Good	Poor		
Digon EC (dimethoate)	Excellent	Good	Poor		
Dimate EC (dimethoate)	Excellent	Good	Poor		
Lannate 2.4L or 90SP (methomyl)	Excellent	Good	Poor		
Neemix (azadirachtin)	Excellent	Good	Poor		
Phaser (endosulfan)	Excellent	Good	Poor		
Provado 1.6F (imidacloprid)	Excellent	Good	Poor		
Pyramite 60WS (pyridaben)	Excellent	Good	Poor		
Pyrenone (pyrethrin)	Excellent	Good	Poor		
Sevin 80S (carbaryl)	Excellent	Good	Poor		
Surround 95WP (kaolin clay)	Excellent	Good	Poor		
Thiodan 3EC or 50WP (endosulfan)	Excellent	Good	Poor		
Vydate 2L (oxamyl)	Excellent	Good	Poor		
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

D21. Woolly apple aphid

a) Percent of apple orchard treated for woolly apple aphid in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Assail 70WP (acetamiprid)	Excellent	Good	Poor
Aza-Direct 1.2EC (azadirachtin)	Excellent	Good	Poor
Digon EC (dimethoate)	Excellent	Good	Poor
Dimate EC (dimethoate)	Excellent	Good	Poor
Distance L (pyriproxyfen)	Excellent	Good	Poor
Di-syston (disulfoton)	Excellent	Good	Poor
M-Pede (insecticidal soap)	Excellent	Good	Poor
Phaser (endosulfan)	Excellent	Good	Poor
Provado 1.6F (imidacloprid)	Excellent	Good	Poor
Safer's Insecticidal Soap	Excellent	Good	Poor
Thiodan 3EC (endosulfan)	Excellent	Good	Poor
Thiodan 50WP (endosulfan)	Excellent	Good	Poor
Valero (cinnamaldehyde)	Excellent	Good	Poor
Vydate 2L (oxamyl)	Excellent	Good	Poor
Other Pesticide(s) used: (Please Specify) _____	Excellent	Good	Poor
Other Strategies Employed: (Please Specify) _____	Excellent	Good	Poor
(Please Specify) _____	Excellent	Good	Poor

D22. Other Insect/Mite Pest(s) Please Specify _____

a) Percent of apple orchard treated for Other Insect/Mite(s) in 2003 _____%

b) Pesticide/Strategy(ies) used (please list)	Effectiveness		
	Excellent	Good	Poor
_____	Excellent	Good	Poor
_____	Excellent	Good	Poor

D23. Other Insect/Mite Pest(s) Please Specify _____

a) Percent of apple orchard treated for Other Insect/Mite(s) in 2003 _____%

b) Pesticide/Strategy(ies) used (please list)	Effectiveness		
	<u>Excellent</u>	<u>Good</u>	<u>Poor</u>
_____	Excellent	Good	Poor
_____	Excellent	Good	Poor

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Disease Management for APPLES

E1. Which of the following practices do you use to manage diseases? (Circle all that apply.)

- (a) Autumn assessment of potential inoculum levels
- (b) Spring/Summer monitoring of scab maturity and infection periods
- (c) Flailing or elimination of leaves
- (d) Application of urea
- (e) Remove wild/alternate hosts and abandoned orchards
- (f) Use scab resistant cultivars
- (g) Pruning out cankered limbs and branches during the dormant season
- (h) Pruning out blighted shoots as soon as they appear in the early summer
- (i) Pruning systems and nitrogen fertilization practices that avoid excessive and prolonged shoot growth
- (j) Avoid highly susceptible cultivars and rootstocks
- (k) Annual pruning to open tree canopies and promote air circulation
- (l) Proper fruit thinning
- (m) Mowing of grass middles and within-row weed management
- (n) The removal of hedgerows or surrounding woodlots

For each of the following diseases, indicate the **percentage of your apple orchard treated in 2003**. If you **did not treat for the disease**, put “0” in the “percent treated” slot. If question is left blank, we won’t know if you meant zero percent treated or if you skipped the question. Please circle the pesticides that you used and the effectiveness of the management strategy (**excellent, good, poor**). If you used non-pesticide strategies to manage a disease please specify them in the “**Other Strategies Employed**” area.

E2. Phytophthora crown, collar and root rot

a) Percent of apple orchard treated for phytophthora crown, collar and/or fruit rot in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Aliette 80WDG (fosetyl Al)	Excellent	Good	Poor
Basicop (basic copper sulfate)	Excellent	Good	Poor
Basic Copper 53 (basic copper sulfate)	Excellent	Good	Poor
Blue Shield (basic copper sulfate)	Excellent	Good	Poor
Champ or Champion (copper hydroxide)	Excellent	Good	Poor
COCS (copper oxychloride sulfate)	Excellent	Good	Poor
Kocide (copper hydroxide)	Excellent	Good	Poor
Phostrol (phosphorus acid)	Excellent	Good	Poor
Ridomil Gold EC (metalaxyl)	Excellent	Good	Poor

Other Pesticide(s) used:

(Please Specify) _____ Excellent Good Poor

Other Strategies Employed: (Please Specify) _____ Excellent Good Poor

(Please Specify) _____ Excellent Good Poor

E3. Apple scab

a) Percent of apple orchard treated for apple scab in 2003 _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Basicop (basic copper sulfate)	Excellent	Good	Poor
Basic Copper 53 (basic copper sulfate)	Excellent	Good	Poor
Blue Shield (basic copper sulfate)	Excellent	Good	Poor
Captan or Captec (captan)	Excellent	Good	Poor
Champ or Champion (copper hydroxide)	Excellent	Good	Poor
COCS (copper oxychloride sulfate)	Excellent	Good	Poor
Dithane F-45 or M-45 (mancozeb)	Excellent	Good	Poor
Dithane Rainshield DF (mancozeb)	Excellent	Good	Poor
Ferbam Granuflo 76WP (ferbam)	Excellent	Good	Poor
Flint 50WDG (trifloxystrobin)	Excellent	Good	Poor
Kocide (copper hydroxide)	Excellent	Good	Poor
Maneb 75DF & 80WP (maneb)	Excellent	Good	Poor
Manex (maneb)	Excellent	Good	Poor
Manzate 75DF (mancozeb)	Excellent	Good	Poor
Nova 40W (myclobutanil)	Excellent	Good	Poor
Penncozeb 75DF (mancozeb)	Excellent	Good	Poor
Polyram 80DF (metiram)	Excellent	Good	Poor
Procure 50WS (triflumizole)	Excellent	Good	Poor
Rubigan EC (fenarimol)	Excellent	Good	Poor
Sovran 50WG (kresoxim-methyl)	Excellent	Good	Poor
Sulfur	Excellent	Good	Poor
Syllit 65WP (dodine)	Excellent	Good	Poor
Thiram 75WDG (thiram)	Excellent	Good	Poor
Topsin-M 70W (thiophanate methyl)	Excellent	Good	Poor
Vanguard WG (cyprodinil)	Excellent	Good	Poor
Ziram 76DF (ziram)	Excellent	Good	Poor

Other Pesticide(s) used:

(Please Specify) _____ Excellent Good Poor

(Please Specify) _____	Excellent	Good	Poor		
Cultural Strategies Employed:					
Leaf Mulching	Excellent	Good	Poor		
Ground Urea Sprays	Excellent	Good	Poor		
Elimination of Wild Trees	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

E4. Fire Blight

a) **Percent of apple orchard treated for fire blight in 2003 _____%**

		Effectiveness				
b) Pesticide(s) used (circle all that apply)	<u>Excellent</u>	<u>Good</u>	<u>Poor</u>			
AgriMycin 17WP (streptomycin)	Excellent	Good	Poor			
Basicop (basic copper sulfate)	Excellent	Good	Poor			
Basic Copper 53 (basic copper sulfate)	Excellent	Good	Poor			
Bac-Master (streptomycin sulfate)	Excellent	Good	Poor			
Blue Shield (basic copper sulfate)	Excellent	Good	Poor			
Champ or Champion (copper hydroxide)	Excellent	Good	Poor			
COCS (copper oxychloride sulfate)	Excellent	Good	Poor			
Kocide (copper hydroxide)	Excellent	Good	Poor			
Streptrol (streptomycin sulfate)	Excellent	Good	Poor			
Other Pesticide(s) used:						
(Please Specify) _____	Excellent	Good	Poor			
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor	
(Please Specify) _____			Excellent	Good	Poor	

E5. Powdery Mildew

a) **Percent of apple orchard treated for powdery mildew in 2003 _____%**

		Effectiveness				
b) Pesticide(s) used (circle all that apply)	<u>Excellent</u>	<u>Good</u>	<u>Poor</u>			
Bayleton 50DF (triadimefon)	Excellent	Good	Poor			
Flint 50WDG (trifloxystrobin)	Excellent	Good	Poor			
Nova 40W (myclobutanil)	Excellent	Good	Poor			
Procure 50WS (triflumizole)	Excellent	Good	Poor			

Rubigan EC (fenarimol)	Excellent	Good	Poor	
Sovran 50WG (kresoxim-methyl)	Excellent	Good	Poor	
Sulfur 6L	Excellent	Good	Poor	
Topsin-M 70W (thiophanate methyl)	Excellent	Good	Poor	
Other Pesticide(s) used:				
(Please Specify) _____	Excellent	Good	Poor	
(Please Specify) _____	Excellent	Good	Poor	
Other Strategies Employed: (Please Specify) _____		Excellent	Good	Poor
(Please Specify) _____		Excellent	Good	Poor

E6. Cedar Apple Rust

a) Percent of apple orchard treated for cedar apple rust in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Bayleton 50DF (triadimefon)	Excellent	Good	Poor
Captan or Captec (captan)	Excellent	Good	Poor
Dithane F-45 or M-45 (mancozeb)	Excellent	Good	Poor
Dithane Rainshield DF (mancozeb)	Excellent	Good	Poor
Ferbam Granuflo 76WP (ferbam)	Excellent	Good	Poor
Flint 50WDG (trifloxystrobin)	Excellent	Good	Poor
Maneb 75DF & 80WP (maneb)	Excellent	Good	Poor
Manex (maneb)	Excellent	Good	Poor
Manzate 75DF (mancozeb)	Excellent	Good	Poor
Nova 40W (myclobutanil)	Excellent	Good	Poor
Penncozeb 75DF (mancozeb)	Excellent	Good	Poor
Polyram 80DF (metiram)	Excellent	Good	Poor
Procure 50WS (triflumizole)	Excellent	Good	Poor
Rubigan EC (fenarimol)	Excellent	Good	Poor
Sovran 50WG (kresoxim-methyl)	Excellent	Good	Poor
Syllit 65WP (dodine)	Excellent	Good	Poor
Ziram 76DF (ziram)	Excellent	Good	Poor
Other Pesticide(s) used:			
(Please Specify) _____	Excellent	Good	Poor
Cultural Strategies Employed:			
Eliminate wild alternate host trees	Excellent	Good	Poor

Other Strategies Employed: (Please Specify) _____ Excellent Good Poor
 (Please Specify) _____ Excellent Good Poor

E7. Fly Speck and Sooty Blotch

a) Percent of apple orchard treated for fly speck and/or sooty blotch in 2003 _____%

		Effectiveness		
		<u>Excellent</u>	<u>Good</u>	<u>Poor</u>
b) Pesticide(s) used (circle all that apply)				
	Captan or Captec (captan)	Excellent	Good	Poor
	Dithane F-45 or M-45 (mancozeb)	Excellent	Good	Poor
	Dithane Rainshield DF (mancozeb)	Excellent	Good	Poor
	Ferbam Granuflo 76WP (ferbam)	Excellent	Good	Poor
	Flint 50WDG (trifloxystrobin)	Excellent	Good	Poor
	Maneb 75DF & 80WP (maneb)	Excellent	Good	Poor
	Manex (maneb)	Excellent	Good	Poor
	Manzate 75DF (mancozeb)	Excellent	Good	Poor
	Penncozeb 75DF (mancozeb)	Excellent	Good	Poor
	Polyram 80DF (metiram)	Excellent	Good	Poor
	Sovran 50WG (kresoxim-methyl)	Excellent	Good	Poor
	Thiram 75WDG (thiram)	Excellent	Good	Poor
	Topsin-M 70W (thiophanate methyl)	Excellent	Good	Poor
	Ziram 76DF (ziram)	Excellent	Good	Poor
Other Pesticide(s) used:				
	(Please Specify) _____	Excellent	Good	Poor
Cultural Strategies Employed:				
	Eliminate alternate hosts	Excellent	Good	Poor
	Summer pruning	Excellent	Good	Poor
Other Strategies Employed:				
	(Please Specify) _____	Excellent	Good	Poor
	(Please Specify) _____	Excellent	Good	Poor

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E8. Bitter Rot

a) Percent of apple orchard treated for bitter rot in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness			
	Excellent	Good	Poor	
Captan or Captec (captan)	Excellent	Good	Poor	
Dithane F-45 or M-45 (mancozeb)	Excellent	Good	Poor	
Dithane Rainshield DF (mancozeb)	Excellent	Good	Poor	
Ferbam Granuflo 76WP (ferbam)	Excellent	Good	Poor	
Flint 50WDG (trifloxystrobin)	Excellent	Good	Poor	
Maneb 75DF & 80WP (maneb)	Excellent	Good	Poor	
Manex (maneb)	Excellent	Good	Poor	
Manzate 75DF (mancozeb)	Excellent	Good	Poor	
Penncozeb 75DF (mancozeb)	Excellent	Good	Poor	
Polyram 80DF (metiram)	Excellent	Good	Poor	
Sovran 50WG (kresoxim-methyl)	Excellent	Good	Poor	
Topsin-M 70W (thiophanate methyl)	Excellent	Good	Poor	
Ziram 76DF (ziram)	Excellent	Good	Poor	
Other Pesticide(s) used:				
(Please Specify) _____	Excellent	Good	Poor	
(Please Specify) _____	Excellent	Good	Poor	
Other Strategies Employed: (Please Specify) _____		Excellent	Good	Poor
(Please Specify) _____		Excellent	Good	Poor

E9. Black Rot

a) Percent of apple orchard treated for black rot in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Captan or Captec (captan)	Excellent	Good	Poor
Dithane F-45 or M-45 (mancozeb)	Excellent	Good	Poor
Dithane Rainshield DF (mancozeb)	Excellent	Good	Poor
Ferbam Granuflo 76WP (ferbam)	Excellent	Good	Poor
Flint 50WDG (trifloxystrobin)	Excellent	Good	Poor
Maneb 75DF & 80WP (maneb)	Excellent	Good	Poor

Manex (maneb)	Excellent	Good	Poor		
Manzate 75DF (mancozeb)	Excellent	Good	Poor		
Penncozeb 75DF (mancozeb)	Excellent	Good	Poor		
Polyram 80DF (metiram)	Excellent	Good	Poor		
Sovran 50WG (kresoxim-methyl)	Excellent	Good	Poor		
Syllit 65WP (dodine)	Excellent	Good	Poor		
Topsin-M 70W (thiophanate methyl)	Excellent	Good	Poor		
Ziram 76DF (ziram)	Excellent	Good	Poor		
Other Pesticide(s) used:					
(Please Specify) _____	Excellent	Good	Poor		
(Please Specify) _____	Excellent	Good	Poor		
Cultural Strategies Employed:					
Pruning	Excellent	Good	Poor		
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor
(Please Specify) _____			Excellent	Good	Poor

E10. Other Disease Pests (Please Specify) _____

a) Percent of apple orchard treated for other Diseases in 2003 _____%

b) Pesticide/Strategy(ies) used (please list)	Effectiveness			Excellent	Good	Poor
	Excellent	Good	Poor			
_____	Excellent	Good	Poor			
_____	Excellent	Good	Poor			
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor	
(Please Specify) _____			Excellent	Good	Poor	

E11. Other Disease Pests (Please Specify) _____

a) Percent of apple orchard treated for other Diseases in 2003 _____%

b) Pesticide/Strategy(ies) used (please list)	Effectiveness			Excellent	Good	Poor
	Excellent	Good	Poor			
_____	Excellent	Good	Poor			
_____	Excellent	Good	Poor			
Other Strategies Employed: (Please Specify) _____			Excellent	Good	Poor	
(Please Specify) _____			Excellent	Good	Poor	

Weed Management for APPLES

F1. Which cultural weed management practices did you use? (Please circle the practices used and their effectiveness: excellent, good, poor.)

Practice (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Mowing	Excellent	Good	Poor
Mulching	Excellent	Good	Poor
Cultivation	Excellent	Good	Poor
None			
Other (please specify) _____	Excellent	Good	Poor
Other (please specify) _____	Excellent	Good	Poor

For each of the following weed management practices, indicate the **percentage of your apple orchard treated in 2003**. If you **did not use the practice**, put “0” in the “percent treated” slot. If question is left blank, we won’t know if you meant zero percent treated or if you skipped the question. Please circle the pesticides that you used and the effectiveness of the management strategy (**excellent, good, poor**). If you used non-pesticide strategies to manage weeds please specify them in the “**Other Strategies Employed**” area.

F2. Pre-emergence Annual Grasses

a) **Percent of apple orchard treated for pre-emergence annual grasses in 2003** _____%

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Casoron G (dichlobenil)	Excellent	Good	Poor
Devrinol 50W, 50DF, 10G (napropamide)	Excellent	Good	Poor
Direx (diuron)	Excellent	Good	Poor
Karmex DF (diuron)	Excellent	Good	Poor
Kerb 50W (pronamide)	Excellent	Good	Poor
Princep Caliber 90DF, 4L (simazine)	Excellent	Good	Poor
Prowl 3.3EC (pendimethalin)	Excellent	Good	Poor
Simazine 90DF, 4L (simazine)	Excellent	Good	Poor
Sinbar W (terbacil)	Excellent	Good	Poor
Snapshot 2.5TG (trifluralin and isoxaben)	Excellent	Good	Poor
Solicam DF (norflurazon)	Excellent	Good	Poor
Surflan AS, L (oryzalin)	Excellent	Good	Poor

Other Herbicide(s) used:

Please Specify _____
 Please Specify _____

Excellent Good Poor
 Excellent Good Poor

F2. Pre-emergence Broadleaf Weeds

a) Percent of apple orchard treated for pre-emergent broadleaf weeds in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Casoron G (dichlobenil)	Excellent	Good	Poor
Direx (diuron)	Excellent	Good	Poor
Gallery 75DF (isoxaben)	Excellent	Good	Poor
Goal 2XL (oxyfluorfen)	Excellent	Good	Poor
Karmex DF (diuron)	Excellent	Good	Poor
Princep Caliber 90DF, 4L (simazine)	Excellent	Good	Poor
Simazine 90DF, 4L (simazine)	Excellent	Good	Poor
Sinbar W (terbacil)	Excellent	Good	Poor
Snapshot 2.5TG (trifluralin and isoxaben)	Excellent	Good	Poor
Other Herbicide(s) used:			
Please Specify _____	Excellent	Good	Poor
Please Specify _____	Excellent	Good	Poor

F3. Post-emergence Grasses

a) Percent of apple orchard treated with post-emergence grasses in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Casoron G (dichlobenil)	Excellent	Good	Poor
Fusilade DX L (fluazifop-butyl)	Excellent	Good	Poor
Gramoxone Extra L (paraquat)	Excellent	Good	Poor
Glyphomax 4SC (glyphosate)	Excellent	Good	Poor
Kerb 50W (pronamide)	Excellent	Good	Poor
Poast L (sethoxydim)	Excellent	Good	Poor
Rattler (glyphosate)	Excellent	Good	Poor
Rely L (glufosinate-ammonium)	Excellent	Good	Poor
Roundup Ultra Max (glyphosate)	Excellent	Good	Poor
Select 2EC (clethodim)	Excellent	Good	Poor
Sinbar W (terbacil)	Excellent	Good	Poor
Touchdown (glyphosate)	Excellent	Good	Poor

Other Herbicide(s) used:

Please Specify _____

Excellent Good Poor

Please Specify _____

Excellent Good Poor

F4. Post-emergence Broadleaf Weeds

a) Percent of apple orchard treated with post-emergence broadleaf weeds in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Amine 4 (2,4-D)	Excellent	Good	Poor
Casoron G (dichlobenil)	Excellent	Good	Poor
Goal (oxyfluorfen)	Excellent	Good	Poor
Gramoxone Extra L (paraquat)	Excellent	Good	Poor
Glyphomax 4SC (glyphosate)	Excellent	Good	Poor
Rattler (glyphosate)	Excellent	Good	Poor
Rely L (glufosinate-ammonium)	Excellent	Good	Poor
Roundup L, Ultra Max (glyphosate)	Excellent	Good	Poor
Saber (2,4-D)	Excellent	Good	Poor
Sinbar W (terbacil)	Excellent	Good	Poor
Touchdown (glyphosate)	Excellent	Good	Poor
Other Herbicide(s) used:			
Please Specify _____	Excellent	Good	Poor
Please Specify _____	Excellent	Good	Poor

F5. Post-emergence Woody Weeds and Vines

a) Percent of apple orchard treated with post-emergence woody weeds and vines in 2003 _____ %

b) Pesticide(s) used (circle all that apply)	Effectiveness		
	Excellent	Good	Poor
Glyphomax 4SC (glyphosate)	Excellent	Good	Poor
Rattler (glyphosate)	Excellent	Good	Poor
Rely L (glufosinate-ammonium)	Excellent	Good	Poor
Roundup Ultra Max (glyphosate)	Excellent	Good	Poor
Touchdown (glyphosate)	Excellent	Good	Poor
Other Herbicide(s) used:			
Please Specify _____	Excellent	Good	Poor
Please Specify _____	Excellent	Good	Poor

Vertebrate Pest Management for APPLES

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

a) Percent of apple orchard with deer protection in 2003 _____%

b) Type of protection used (circle all that apply) Effectiveness of Management

Well-maintained 8 foot metal wire fence	Excellent	Good	Poor
Other wire fence	Excellent	Good	Poor
3+ wire electric fence	Excellent	Good	Poor
Single wire electric fence	Excellent	Good	Poor
Hinder (Spray repellent)	Excellent	Good	Poor
Deer Away (Spray repellent)	Excellent	Good	Poor
Other repellents Please specify _____	Excellent	Good	Poor
Orchard resident dogs	Excellent	Good	Poor

Other strategies:

Please Specify _____	Excellent	Good	Poor
Please Specify _____	Excellent	Good	Poor

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

a) Percent of apple orchard treated with vole protection in 2003 _____%

b) Type of protection used (circle all that apply) Effectiveness of Management

Physical barriers (i.e. mouse guards on trunks)	Excellent	Good	Poor
Frequent mowing (to reduce favorable habitat)	Excellent	Good	Poor
Herbicide tree row strips (to reduce favorable habitat)	Excellent	Good	Poor
Removing drops form orchard floor	Excellent	Good	Poor
Broadcast zinc phosphide oat or pellet bait	Excellent	Good	Poor
Broadcast zinc phosphide corn bait	Excellent	Good	Poor
Bait station zinc phosphide bait	Excellent	Good	Poor
Broadcast anticoagulant (Ramik) bait	Excellent	Good	Poor
Bait station anticoagulant (Ramik) bait	Excellent	Good	Poor
Vole predator habitat enhancement (i.e. Kestrel boxes)	Excellent	Good	Poor

Other strategies:

Please Specify _____	Excellent	Good	Poor
Please Specify _____	Excellent	Good	Poor

G3. Other Vertebrate Pests and Strategies (Please list vertebrate, list strategies used and circle their effectiveness)

Please Specify Pest(s)	Strategy(ies) used	<u>Effectiveness of Management</u>		
		Excellent	Good	Poor
		Excellent	Good	Poor
		Excellent	Good	Poor
		Excellent	Good	Poor
		Excellent	Good	Poor
		Excellent	Good	Poor

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Information for Management Decisions:

H1. What kinds of pest monitoring do you use for pest management decisions? (Please circle the answer that fits best)

- a) Informal observations influence decisions, but no special field visits for pest observations
- b) Field visits made for purpose of pest observations, but not following a standard procedure and threshold
- c) Sampling according to standard procedures or traps, and comparing observations to pest threshold
- d) Use of pest forecast and tracking models and equipment to determine need or adjust timing for sampling or control measures

H2. If sampling procedures or pest models are used in making pest management decisions, who collects that information? (Please circle all that apply)

- a) You
- b) Private IPM scout/consultant
- c) Farm employee or family member
- d) Other (specify: _____)

H3. How important are these factors to you when choosing pesticides for use on your farm? (Please circle your answers)

		<u>How Important?</u>		
a)	Applicator hazard (toxicity to humans)	Very Important	Somewhat Important	Not Important
b)	Cost per Treatment	Very Important	Somewhat Important	Not Important
c)	Customer relations (food safety concerns)	Very Important	Somewhat Important	Not Important
d)	Effectiveness against pest compared to alternative products	Very Important	Somewhat Important	Not Important
e)	Formulation (liquid vs. dry, water soluble bags)	Very Important	Somewhat Important	Not Important
f)	Impact on beneficial species (parasites, predators, pollinators)	Very Important	Somewhat Important	Not Important
g)	Label restrictions (reentry & preharvest interval, protective equip.)	Very Important	Somewhat Important	Not Important
h)	Size or type of packaging	Very Important	Somewhat Important	Not Important
i)	Other potential nontarget and environmental impacts	Very Important	Somewhat Important	Not Important
j)	Storage requirements	Very Important	Somewhat Important	Not Important

H4. How often (frequently, occasionally, never) do you use the following weather information in making your pest management decisions? (please circle your answers)

a)	Forecasts for next rain	Frequently	Occasionally	Never
b)	Rainfall totals (for effect on spray residue)	Frequently	Occasionally	Never
c)	Temperatures (for degree day models)	Frequently	Occasionally	Never
d)	Humidity and/or leaf wetness hours	Frequently	Occasionally	Never
e)	Wind speed forecast	Frequently	Occasionally	Never

H5. If weather information was readily available, would you use it for? (please circle your answers)

Forecasts for next rain	Yes	No
Rainfall totals (for effect on spray residue)	Yes	No
Temperatures (for degree day models)	Yes	No
Humidity and/or leaf wetness hours	Yes	No
Wind speed forecast	Yes	No

H6. How important are these sources of information in making your pest management decisions? (please circle your answers)

a)	Twilight meetings	Very Important	Somewhat Important	Not Important
b)	Off season educational meetings	Very Important	Somewhat Important	Not Important
c)	New England Pest Mgmt Guide	Very Important	Somewhat Important	Not Important
d)	Newsletters	Very Important	Somewhat Important	Not Important
e)	Web sites	Very Important	Somewhat Important	Not Important
f)	Trade publications	Very Important	Somewhat Important	Not Important
g)	Other growers	Very Important	Somewhat Important	Not Important
h)	Suppliers/dealers	Very Important	Somewhat Important	Not Important
i)	University/Extension staff	Very Important	Somewhat Important	Not Important
j)	Other _____	Very Important	Somewhat Important	Not Important

H7. How would you describe your crop production practices? (please circle your answer)

Conventional
 IPM
 Organic
 Other (please specify: _____)

Please use this space for any comments that you have

Thank you for your help.

Please return your questionnaire in the enclosed envelope to:

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Amherst, MA 01003-0210**