



**For interviewer use only**

Based on label information, enter last digit of contact telephone number:

→ Column number

Enter number of orchard listed in Step 2:

→ Row number

Use this table to select orchard

# of orchards	Last Digit of the contact's telephone number									
	0	1	2	3	4	5	6	7	8	9
1	1	1	1	1	1	1	1	1	1	1
2	1	2	2	1	2	1	2	1	1	2
3	1	2	1	3	2	1	2	3	3	1
4	1	4	3	3	2	1	2	2	3	1
5	4	5	3	1	5	2	2	4	1	3
6	5	1	2	1	3	6	4	3	2	5
7	7	2	1	3	2	4	6	5	6	4
8	6	4	2	3	8	5	6	1	3	7
9	5	8	5	4	9	2	5	6	7	1
10	8	4	5	3	7	6	1	2	9	10

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**STEP 2: Questions about the orchards where APPLES were grown for sale in 2005.**

2 What UNIT OF MEASURE will be used to report land areas? <sup>22</sup> This same unit should be used throughout the questionnaire.

(Check one circle only.)  <sup>01</sup> Acres  <sup>02</sup> Hectares  <sup>03</sup> Arpens (Quebec only)

3 What was your total producing and non-producing apple area (all varieties) on this operation in 2005? .....       <sup>60</sup>

4 What was your total producing apple area (all varieties)? .....       <sup>23</sup>

5 How many orchards (varieties of apple, cultivars or plots) produced apples for sale? .....    <sup>24</sup>

**Include:**

- ▶ all areas of apples grown for sale to the fresh or processing markets in 2005;
- ▶ all areas of apples grown for sale at roadside stands, farmer's markets or U-pick systems.

**Do not include:**

- ▶ apples grown for home use.

To save time, this interview will focus on one producing orchard only. First, we will list all producing orchards (varieties of apple, cultivars or plots) in production in 2005. You can use your identification system (name, number or description) to report each orchard. Then, I will select one producing orchard (variety of apple, cultivar or plot) from the list.

6 What were your producing orchards in 2005?

▶ If the respondent uses a different term than "orchard" (variety of apple, cultivar or plot) to describe the apple producing area, please specify here: \_\_\_\_\_ <sup>25</sup>

▶ If there are more than 10 producing orchards, list the 10 largest producing orchards.

	Name, number or orchard description
1	
2	
3	
4	
5	

	Name, number or orchard description
6	
7	
8	
9	
10	

Now, I will select one producing orchard from all producing orchards in 2005.

Interviewer action: enter the selected orchard (variety of apple, cultivar or plot) number .....   <sup>26</sup>

The selected producing orchard is: \_\_\_\_\_ During this interview, I will ask you questions about this orchard.

7 What was the area of this selected orchard (variety of apple, cultivar or plot)? .....       <sup>27</sup>

8 How many bearing trees were in this selected orchard? .....       <sup>61</sup>

9 What year was the selected orchard planted? .....     <sup>62</sup>

10 In 2005, ... if more than one, report the most important

a) which apple variety (or cultivar) was grown? .....  <sup>29</sup>

b) when did harvest start? .....     <sup>32</sup>     <sup>35</sup>     <sup>38</sup>     <sup>41</sup>

c) when did harvest finish? .....     <sup>33</sup>     <sup>36</sup>     <sup>39</sup>     <sup>42</sup>

**STEP 3: Questions about herbicide, insecticide or fungicide applications from January 1 to December 31, 2005 on the orchard selected in Step 2.**

11 In 2005, did you apply any herbicides, insecticides, fungicides or other pesticides on the selected orchard? <sup>43</sup>

<sup>01</sup>  Yes <sup>02</sup>  No If "YES", continue to question 12. If "NO" → Go to Step 4.

12 What format was used to keep records of herbicides, insecticides, fungicides or other pesticides applied to this orchard? <sup>44</sup>

Was it ...? (Check all that apply.)

<sup>01</sup>  Written <sup>02</sup>  Electronic/computer file <sup>03</sup>  No record kept

13 What information is kept in your logs/record-keeping system? <sup>45</sup>

Does it include the ...? (Check all that apply.)

<sup>45</sup>  Date of application <sup>48</sup>  Product applied <sup>51</sup>  Temperature at application

<sup>46</sup>  Identification of orchard <sup>49</sup>  Rate of application <sup>52</sup>  Targeted weed, insect or disease

<sup>47</sup>  Total area treated <sup>50</sup>  Wind speed <sup>53</sup>  Other, specify: \_\_\_\_\_ <sup>54</sup>

14 Did the company or person purchasing your produce require the use of specific herbicides, insecticides or fungicides as part of a contractual agreement? <sup>55</sup>

<sup>01</sup>  Yes <sup>02</sup>  No <sup>03</sup>  Not applicable, the produce was not sold to a processor under a contractual agreement.

**STEP 3: Questions about herbicide, insecticide or fungicide applications from January 1 to December 31, 2005 on the orchard selected in Step 2**

**15 What chemicals were applied to the selected orchard in 2005? Report ALL CHEMICAL APPLICATIONS to the SELECTED ORCHARD in this table.**

Include all applications to the SELECTED ORCHARD (Step 2) made by the respondent, a partner, an employee or a custom applicator.

- ▶ Where necessary (more than 45 applications or lines), use additional tables supplied with the interviewer material.
- ▶ For pre-packaged mixes, enter the product code found in the *Interviewer Reference Guide*.
- ▶ If the respondent mixed more than one product in the tank, use a different line for each product mixed.
- ▶ If the code of a pre-packaged mix is not included in the list, report its name at the bottom of this table (p. 4).

Check if you use additional table  999

Line	Column [1] Date of application					Column [2] Which product was applied? <i>(Enter product name or code from the Interviewer Reference Guide)</i>					Column [3] What was the rate of application? <i>(e.g. 1 litre per acre)</i>					Column [4] What was the application technique? <i>(Enter the application technique code p. 4)</i>			Column [5] If this application was a local or half row treatment, what percent of the ORCHARD was treated?					
	D	D	M	M	101																			
1	D	D	M	M	101						201				301	per	401			501				601
2	D	D	M	M	102						202				302	per	402			502				602
3	D	D	M	M	103						203				303	per	403			503				603
4	D	D	M	M	104						204				304	per	404			504				604
5	D	D	M	M	105						205				305	per	405			505				605
6	D	D	M	M	106						206				306	per	406			506				606
7	D	D	M	M	107						207				307	per	407			507				607
8	D	D	M	M	108						208				308	per	408			508				608
9	D	D	M	M	109						209				309	per	409			509				609
10	D	D	M	M	110						210				310	per	410			510				610
11	D	D	M	M	111						211				311	per	411			511				611
12	D	D	M	M	112						212				312	per	412			512				612
13	D	D	M	M	113						213				313	per	413			513				613
14	D	D	M	M	114						214				314	per	414			514				614
15	D	D	M	M	115						215				315	per	415			515				615
16	D	D	M	M	116						216				316	per	416			516				616
17	D	D	M	M	117						217				317	per	417			517				617
18	D	D	M	M	118						218				318	per	418			518				618
19	D	D	M	M	119						219				319	per	419			519				619
20	D	D	M	M	120						220				320	per	420			520				620
21	D	D	M	M	121						221				321	per	421			521				621
22	D	D	M	M	122						222				322	per	422			522				622
23	D	D	M	M	123						223				323	per	423			523				623
24	D	D	M	M	124						224				324	per	424			524				624

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**STEP 4: Questions about WEED, INSECT, DISEASE AND OTHER PEST MANAGEMENT PRACTICES in 2005 for the orchard selected in Step 2**

**16 Which practices do you use in your spray operation in this orchard in 2005?**

Do you ...? (Check all that apply.)

- |  |  |
|--|--|
| 816 <input type="checkbox"/> Calibrate sprayer each year                     | 822 <input type="checkbox"/> Spray only when wind speeds are low (less than five km/h) |
| 817 <input type="checkbox"/> Use the highest labelled water volume           | 823 <input type="checkbox"/> Spray only when wind blows away from sensitive areas      |
| 818 <input type="checkbox"/> Replace nozzles at least every three years      | 824 <input type="checkbox"/> Maintain lower pressure or use low-drift nozzle           |
| 819 <input type="checkbox"/> Maintain sprayer travel speed less than 16 km/h | 825 <input type="checkbox"/> Use protective shrouds or cones around sprayer boom       |
| 820 <input type="checkbox"/> Maintain low boom height                        | 826 <input type="checkbox"/> Other, specify: _____ 827                                 |
| 821 <input type="checkbox"/> Adjust airblast direction for target height     | _____ 828  |

**17 In 2005, for the selected orchard, was the incidence of INSECTS compared to the last five years ...?** 844

- (Check one circle only.)
- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| 01 <input type="checkbox"/> Much less | 02 <input type="checkbox"/> Less      | 03 <input type="checkbox"/> About the same |
| 04 <input type="checkbox"/> More      | 05 <input type="checkbox"/> Much more |  |

If the answer is "More" or "Much more", continue to question 18. Otherwise → Go to Question 19.

**18 What do you plan to do during the next growing season to reduce your INSECT problems?**

Will you ...? (Check all that apply)

- |  |   |
|--|---|
| 951 <input type="checkbox"/> Scout for insect or damage presence | 849 <input type="checkbox"/> Take actions to disrupt insect reproduction or development |
| 952 <input type="checkbox"/> Use forecasting systems             | 850 <input type="checkbox"/> Increase rate of insecticide applications                  |
| 847 <input type="checkbox"/> Switch to a different insecticide   | 851 <input type="checkbox"/> Other, specify: _____ 852                                  |
| 848 <input type="checkbox"/> Apply an additional insecticide     | _____ 853   |

**19 In 2005, did you deal with any NEW INSECTS in this field?** 854

- 02  No      01  Yes

► If yes, what was the main insect? \_\_\_\_\_

**20 In 2005, for the selected orchard, what was the MOST PREVALENT INSECT you had to control?**

If there was no significant insect problem, enter "0" and skip to Question 22. \_\_\_\_\_ 856

**21 What did you do to control the MOST PREVALENT INSECT?**

Did you ...? (Check all that apply.)

- |   |   |
|---|---|
| 857 <input type="checkbox"/> Apply insecticides throughout the growing season                                   |   |
| 858 <input type="checkbox"/> Time insecticide applications to target the insect at different development stages |   |
|   | What were the developmental stages? 859 <input type="checkbox"/> Early nymph or egg stages          |
|   | If not applicable, go to next choice: Box 862 860 <input type="checkbox"/> Larval or nymphal stages |
|   | 861 <input type="checkbox"/> Adult  |
| 862 <input type="checkbox"/> Take other steps to disrupt the reproduction of this insect                        |   |
| 863 <input type="checkbox"/> Take other actions to disrupt the morphological development of this insect         |   |
| 865 <input type="checkbox"/> Release beneficial organisms to control this insect                                |   |
| 866 <input type="checkbox"/> Manage this orchard and its surrounding area to attract beneficial organisms       |   |

**22 In 2005, for the selected orchard, was the incidence of DISEASES (fungus, bacteria, mildew) compared to the last five years ...?** 867

- (Check one circle only.)
- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| 01 <input type="checkbox"/> Much less | 02 <input type="checkbox"/> Less      | 03 <input type="checkbox"/> About the same |
| 04 <input type="checkbox"/> More      | 05 <input type="checkbox"/> Much more |  |

If the answer is "More" or "Much more", continue to question 23. Otherwise → Go to Question 24.

**23 What do you plan to do during the next growing season to reduce your DISEASE problems?**

Will you...? (Check all that apply)

- |  |   |
|--|---|
| 953 <input type="checkbox"/> Scout for disease damages               | 954 <input type="checkbox"/> Use forecasting systems                  |
| 869 <input type="checkbox"/> Increase rate of fungicide applications | 873 <input type="checkbox"/> Alter soil fertility or water management |
| 870 <input type="checkbox"/> Switch to a different fungicide         | 874 <input type="checkbox"/> Other, specify: _____ 875                |
| 871 <input type="checkbox"/> Apply an additional fungicide           | _____ 876   |

**24 In 2005, did you deal with any NEW DISEASES in this orchard?** 877

- 02  No      01  Yes

► If yes, what was the main disease? \_\_\_\_\_ 878

**25 For the selected orchard, what was the MOST PREVALENT DISEASE (fungus, bacteria, mildew) you had to control?**

If there was no significant insect problem, enter "0" and skip to Question 28. \_\_\_\_\_ 879

**26 What tools/methods did you or your advisor use to make decisions on when to apply fungicides in this orchard to control the MOST PREVALENT DISEASE?**

Was the decision based on ...?

(Check all that apply.)

- |   |  |
|---|--|
| 880 <input type="checkbox"/> A set application schedule (calendar spraying) |  |
| 881 <input type="checkbox"/> Scouting reports and thresholds                |  |
| 882 <input type="checkbox"/> Regional forecasting/warning services          |  |
| 883 <input type="checkbox"/> Climatic conditions (degree days, moisture)    |  |
| 884 <input type="checkbox"/> Advice from other operators                    |  |
| 885 <input type="checkbox"/> Advice from a chemical salesperson             |  |
| 886 <input type="checkbox"/> Don't know                                     |  |
| 887 <input type="checkbox"/> Other, specify: _____ 888                      |  |

**STEP 4: Questions about WEED, INSECT, DISEASE AND OTHER PEST MANAGEMENT PRACTICES in 2005 for the orchard selected in Step 2.**

27 In 2005, which practices did you use to avoid the **MOST PREVALENT DISEASE** (fungus, bacteria, mildew) in this orchard?

Did you ...?

(Check all that apply.)

- 889  Plant certified disease-free transplants
- 890  Select the plant variety known to be most resistant to the major disease threats in your area
- 891  Eliminate possible sources of inoculum, such as cull piles, pruning residue or volunteer plants in nearby fields
- 892  Clean equipment moving into this orchard to reduce risk of transporting disease spores or inoculum
- 893  Adjust fertilizer levels to prevent excessive levels of nutrients in the root zone and foliage
- 894  Test your soil for micronutrient imbalances that can promote certain diseases
- 895  Alter the timing of fertilization and/or water applications

28 In 2005, did you use any of the following practices in this orchard for **WEED** management?

Did you ...?

(Check all that apply.)

- 829  Mulch
- 830  Plant a cover crop
- 831  Use a cultivator or rotary hoe
- 832  Chop or remove pruning residue
- 833  Other, specify: \_\_\_\_\_ 834

29 In 2005, for the selected orchard, was the incidence of **WEEDS** compared to the last five years ...? 835

(Check one circle only.)

- 01  Much less
- 02  Less
- 03  About the same
- 04  More
- 05  Much more

If "More" or "Much more", continue to question 30. Otherwise → Go to Question 31.

30 What do you plan to do during the next growing season to reduce your **WEED** problems?

Will you ...?

(Check all that apply.)

- 836  Switch to a different herbicide
- 837  Apply an additional herbicide
- 838  Increase rate of herbicide applications
- 955  Switch to a different weed control practice
- 841  Other, specify: \_\_\_\_\_ 842
- \_\_\_\_\_ 843

**STEP 5: Questions about weed, insect and disease RESISTANCE to chemical applications for your ENTIRE OPERATION**

31 In 2005, did you use any of the following practices to prevent weeds, insects and disease resistance to chemical products?

Did you ...?

(Check all that apply.)

- 896  Always rotate chemical families (or groups)
- 898  Sometimes rotate chemical families (or groups)
- 897  Select more pest resistant crop varieties
- 899  Reduce pest populations through non-chemical means
- 900  Other, specify: \_\_\_\_\_ 901

32 On YOUR FARM, to what extent, if any, are weeds becoming resistant to **HERBICIDES**?

Are weeds becoming ...?

(Check one circle only.)

- 01  Very resistant
- 02  Resistant
- 03  Slightly resistant
- 04  Not resistant
- 09  Don't know 902

33 On YOUR FARM, to what extent, if any, are insects becoming resistant to **INSECTICIDES**?

Are insects becoming ...?

(Check one circle only.)

- 01  Very resistant
- 02  Resistant
- 03  Slightly resistant
- 04  Not resistant
- 09  Don't know 903

34 On YOUR FARM, to what extent, if any, are diseases becoming resistant to **FUNGICIDES**?

Are diseases becoming ...?

(Check one circle only.)

- 01  Very resistant
- 02  Resistant
- 03  Slightly resistant
- 04  Not resistant
- 09  Don't know 904

**STEP 6: Questions are about the herbicide, insecticide or fungicide products that you would have liked to use if they had been registered for application on APPLES in 2005**

35 What are the herbicide, insecticide and fungicide products that were **NOT** registered for use on APPLES in 2005 that you would have liked to use if they had been registered in your province?

► List chemical products that are available in other provinces or countries.  
 ► If necessary, use the comment box on page 8 to provide further details or explanations.

(If available, enter PCP number or product code found in the Interviewer Reference Guide.)

Product name	905	<input type="radio"/> None	► Go to question 36.								
1											906
2											908
3											910
4											912
5											914



