

New England Integrated Pest Management (IPM) Potato Planning Project

Do you grow potatoes for sale? (Please circle the number of your answer).

1) Yes → → Please continue below.

2) No → → If no, **please take a moment now to return the blank survey** in the enclosed envelope in order to avoid getting follow-up mailings from us--thank you!

This study will help potato IPM programs in Maine and Massachusetts to better understand how you grow and manage your potatoes. We will use this information to plan our future research and Extension activities in potato IPM to better meet your needs.

The survey should be completed by the person most responsible for farm management decisions on your farm. Please enclose a separate sheet with additional comments if you like, and feel free to comment in the margins. Thank you very much for your help.

Survey Coordinators, Entomology West, Ag. Eng. Bldg., UMass, Amherst, MA 01003

Please **circle** the number of your response, **fill in** the blanks or **circle** selections when indicated.

A. GENERAL

1. How many acres of potatoes do you grow? _____acres.

2. What percentage of your potatoes are sold through each of the following types of markets? (Please fill in the approximate percentage. Note that percentages should add up to 100).

- | | |
|----------------------------------|--------|
| 1) processing | _____% |
| 2) fresh market retail | _____% |
| 3) fresh market wholesale | _____% |
| 4) seed | _____% |
| 5) other (please specify: _____) | _____% |

100%

3. Do you grow potatoes under contract to a processor? yes..... no

4. How would you describe your potato production practices? (Circle the one that best applies).

Conventional Organic IPM Other (please specify: _____)

5. How long have you been growing potatoes commercially? _____years.

6. How many total acres of all crops do you have in production? _____acres.

7. What other crops do you grow? _____

B. PEST MANAGEMENT

1. Do you apply insecticides to potatoes?

1) yes

2) no → → → If no, skip to question 0 at the top of the next page → → → → → → → →

2. If yes, what type of sprayer do you use to apply insecticides to potatoes? (Please circle all that apply.)

- 1) boom sprayer
- 2) aerial application
- 3) in-furrow application
- 4) mist blower
- 5) other (please specify: _____)

3. What methods, if any, do you use to evaluate the effectiveness and accuracy of your sprayer(s)? (Circle all that apply.)

- 1) calibration of whole sprayer once per season
- 2) calibration of whole sprayer two or more times per season
- 3) calibration of individual nozzles
- 4) tests with water-sensitive cards clipped to target areas of potatoes
- 5) other (please specify: _____)
- 6) I don't check the effectiveness or accuracy of my sprayer.

4. What insecticides did you use in 1994 and 1995 to control Colorado potato beetle? (Fill in the approximate percentage of your acreage on which you used these materials in 1994 and 1995.)

	1994	1995
	<u>approx. percentage of acreage</u>	<u>approx. percentage of acreage</u>
<i>Example</i>	<u>50 %</u>	<u>25 %</u>
1) Admire	<u> %</u>	<u> %</u>
2) Provado	<u> %</u>	<u> %</u>
3) Bt (M-trak, Foil, Novador)	<u> %</u>	<u> %</u>
4) Ambush, Pounce, Asana	<u> %</u>	<u> %</u>
5) Guthion	<u> %</u>	<u> %</u>
6) Vydate	<u> %</u>	<u> %</u>
7) Thiodan	<u> %</u>	<u> %</u>
8) Rotenone	<u> %</u>	<u> %</u>
9) Kryocide	<u> %</u>	<u> %</u>
10) Monitor	<u> %</u>	<u> %</u>

5. If you spray, how do you determine the need for and timing of sprays for key insect pests? (Please circle the **THREE MOST IMPORTANT.**)

- 1) Extension hotline or pest message
- 2) time of year
- 3) crop growth stage
- 4) IPM scout or consultant recommendation
- 5) when traps or scouting indicate pests have reached action thresholds
- 6) processor or contract requirement
- 7) my own experience
- 8) chemical company representative recommendations
- 9) informal field observations
- 10) other (please specify: _____)

The next few questions ask about how you obtain information about insect pests and how you decide how to treat them. Please tell us how these activities are done on your farm, even if you don't do them yourself. In other words, if a consultant or employee gathers information about pests and reports it to you, please tell us how they get the information.

6. If IPM practices such as insect trapping or field scouting are done on your farm, WHO MOST OFTEN does them? (Please circle **ONE**. If these practices are not used, go on to the next question.)

- 1) you or other family member
- 2) private IPM scout/consultant
- 3) farm employee
- 4) Extension agent or IPM field scout
- 5) other (please specify: _____

_____)

7. If FIELD SCOUTING for insects is done on your farm, HOW is it done? (Please circle all that apply. If scouting is not done, skip to question 0.)

- 1) observe plants for insects at least once per week
- 2) observe plants for insects occasionally, but less than once per week
- 3) look at 50-100 plants per field
- 4) look at fewer than 50 plants per field
- 5) examine plants in the middle of the field
- 6) examine plants along the edge of the field
- 7) examine plants in both places, the middle and the edges of the field
- 8) other (please specify: _____)

8. What pests do you SCOUT for using the methods circled above? (Please circle all that apply.)

- | | |
|---------------------------|------------------------|
| 1) Colorado potato beetle | 4) flea beetle |
| 2) aphids | 5) European corn borer |
| 3) potato leafhopper | 6) cutworms |

9. Which, if any, of these other sampling techniques do you use? (Please circle all that apply. If you don't use any of these techniques, go on to the next question).

- 1) flag Colorado potato beetle egg masses at beginning of each generation
- 2) take soil samples to estimate wireworm density
- 3) take soil samples to estimate grub density
- 4) other (please specify: _____

_____)

10. If ACTION THRESHOLDS are used on your farm, what is the most important source of the thresholds used? An action threshold is a certain level of pest activity or infestation at which a treatment is needed to prevent crop damage. (Please circle **ONE**. If you don't use thresholds, go on to the next question.)

- 1) university-provided threshold
- 2) private consultant-provided threshold
- 3) threshold specified by processor for whom I grow under contract
- 4) my own threshold (please specify the threshold you use for each pest: _____

_____)

11. Which, if any, cultural or mechanical methods do you use for control of COLORADO POTATO BEETLE, on at least part of your acreage? (Please circle all that apply. If you don't use these methods, go on to the next question.)

- 1) propane flaming
- 2) delayed planting
- 3) disruption of movement from overwintering sites (eg. plastic-lined trenches)
- 4) vacuuming
- 5) other (please specify: _____
_____)

12. How do you rate the severity of the following pests in average years on your farm? (Please circle your responses.)

(How SIGNIFICANT is this pest in an average year?)

- 1) **Colorado potato beetle**minor pestmoderate pest.....severe pest
- 2) **European corn borer**.....minor pestmoderate pest.....severe pest
- 3) **aphids**minor pestmoderate pest.....severe pest
- 4) **flea beetle**minor pestmoderate pest.....severe pest
- 5) **wireworms**minor pestmoderate pest.....severe pest
- 6) **grubs**.....minor pestmoderate pest.....severe pest
- 7) **potato leafhopper**.....minor pestmoderate pest.....severe pest
- 8) **cutworms** minor pest moderate pest severe pest

The next two questions ask about DISEASE MANAGEMENT in your potatoes.

13. Which, if any, of the following practices do you use for disease management on your farm? (Circle all that apply. If you use none of these practices, go on to the next question.)

- 1) plant certified virus-free seed
- 2) dispose of cull piles
- 3) destroy volunteer potato plants
- 4) rotate out of potatoes for more than 2 years
- 5) rogue diseased plants
- 6) spray fungicides
- 7) other (please specify: _____)

14. If you apply fungicides, how do you determine if and when to apply them? (Please circle the **THREE MOST IMPORTANT**. If you don't apply fungicides to potatoes, go on to the next question).

- 1) Extension hotline or pest message
- 2) time of year
- 3) crop growth stage
- 4) IPM scout or consultant recommendation
- 5) my own experience
- 6) processor or contract requirement
- 7) timing of insecticide applications
- 8) chemical company representative recommendations
- 9) weather monitoring
- 10) informal field observations
- 11) other (please specify: _____)

The next five questions ask about WEED MANAGEMENT methods.

15. Which, if any, of the following weed management practices do you use in potatoes? (Please circle all that apply.)

- 1) pre-emergence herbicides applied at rates recommended for your soil
- 2) pre-emergence herbicides applied at rates **lower** than those recommended for your soil
- 3) post-emergence herbicides
- 4) banded application of herbicides (over the row only)
- 5) supplementing herbicide applications with cultivation
- 6) rotation of herbicide classes to delay resistance
- 7) cultivation only, with no application of herbicides
- 8) spot treatment (herbicides or cultivation) of problem weeds
- 9) hand pulling of problem weeds
- 10) choosing rotation crops for weed suppression

16. Do you monitor your potato fields for weeds during the season or shortly after harvest?

- 1) always
- 2) sometimes
- 3) never → → → If never, skip to question 0.

17. If you do monitor or check for weeds, do you do any of the following, based on information from scouting? (Please circle all that apply.)

- 1) keep written records or maps of weed scouting
- 2) spot treat problem areas
- 3) adjust herbicide rate
- 4) change tillage practices
- 5) rotate to another crop for better weed control
- 6) other (please specify: _____)
- 7) none of the above

18. What tillage equipment do you use prior to planting potatoes? (Circle all that apply.)

- 1) chisel plow
- 2) moldboard plow
- 3) rototiller
- 4) disc harrow

5) other (please specify: _____)

19. What cultivation tactics do you use after planting the potato crop? (Circle all that apply.)

- 1) pre-emergence cultivation
- 2) post-emergence fingers for in-row weeding
- 3) post-emergence spring tines for in-row weeds
- 4) post-emergence rotary hoe for in-row weeds
- 5) post-emergence sweeps
- 6) hilling
- 7) other (please specify: _____)
- 8) none of the above

20. How important is a potato variety's resistance to pests (weeds, insects, diseases, and nematodes) when you choose which varieties to plant? (Please circle one.)

- 1) **Not very important**; other factors like price, yield potential, market demand, and days to harvest are much more important than resistance
- 2) **Somewhat important**; if other requirements are met, I'll choose a variety with more resistance
- 3) **Very important**; I try to plant resistant varieties whenever possible.

C. SOIL AND NUTRIENT MANAGEMENT

The next few questions ask about soil and nutrient management in potatoes.

1. How often do you take SOIL TESTS on your fields for nutrient and pH status? (Please circle one.)

- 1) every year
- 2) every 2-3 years
- 3) every 4-5 years
- 4) every 6 years or more
- 5) never

2. How often do you test for the ORGANIC MATTER STATUS of your potato fields? (Circle one.)

- 1) every year
- 2) every 2-3 years
- 3) every 4-5 years
- 4) every 6 years or more
- 5) never

3. How often are potatoes grown in a given field on your farm? (Please circle one.)

- 1) every year
- 2) every other year
- 3) once in three years
- 4) once in four years
- 5) less often than one year in four

4. What other market crops and cover crops or green manures do you plant in rotation with potatoes?

Example: corn, rye and vetch

5. How and when do you apply nitrogen fertilizer? (Circle all that apply.)

- 1) preplant broadcast
- 2) banded through the planter

- 3) broadcast top-dress
- 4) banded side-dress
- 5) other (please specify: _____)
- 6) never (please explain: _____)

6. Which of the following soil amendments do you apply? (Circle all that apply.)

- 1) composted plant material
- 2) raw animal manure
- 3) composted animal manure
- 4) fish waste
- 5) none of the above

7. What percent (%) of your potato acreage is planted to a fall cover crop (either overseeded or seeded after harvest)? (Please circle one.)

- 1) none
- 2) 1 - 25%
- 3) 26 - 50%
- 4) 51 - 75%
- 5) 76 - 100%

8. In making decisions about soil and nutrient management, how important are each of the following? (Please circle your responses.)

(How IMPORTANT is this information?)

- 1) soil test results not somewhatvery
- 2) expected nutrient needs of crop not somewhatvery
- 3) nutrient credits for soil organic matter,
manure applications, or crop residues not somewhatvery
- 4) recommendations of crop consultant..... not somewhatvery
- 5) recommendations from soil test lab not somewhatvery
- 6) recommendations of Extension guide or agent..... not somewhatvery
- 7) recommendations of fertilizer salesperson..... not somewhatvery
- 8) past experience with crop not somewhatvery
- 9) other (please specify: _____) .. not somewhatvery

D. EFFECTS OF USING IPM

The following questions ask about your experiences using or considering the use of IPM. Please circle the number of your response.

1. If there are IPM techniques you choose not to use, what keeps you from using them? (Please circle all that apply).

- 1. I feel the technique is too costly to implement
- 2. I am uncertain about how effective the technique will be
- 3. I don't know exactly how to use the technique
- 4. I am satisfied with my current production methods
- 5. other (please specify: _____)

2. Which of the following might encourage you to adopt IPM techniques that you are not currently using? (Circle all that apply.)

- 1) 1. markets that want IPM-grown crops
- 2) availability of cost sharing for IPM consulting
- 3) learning more about how to use IPM techniques
- 4) better evidence that IPM techniques work
- 5) pressure from neighbors or consumers
- 6) loss of currently registered materials
- 7) new IPM techniques that are safer to use than my current practices
- 8) other (please specify: _____)

3. Below are various opinions, both positive and negative, that we have heard people give on the topic of the effects of IPM use. We would like to know whether you agree or disagree with each. If you use IPM practices, please base your answer on your experience with IPM on your own farm. If you don't use IPM practices, please give us your opinion about its effects. (Circle your response.)

- 1) Use of IPM attracts more customers.....agree disagree
- 2) Use of IPM increases management time.agree disagree
- 3) Use of IPM allows growers to charge a higher price for their product.....agree disagree
- 4) Use of IPM increases the costs of pest managementagree disagree
- 5) Use of IPM improves relations with neighbors.....agree disagree
- 6) Use of IPM decreases the quality of the product.....agree disagree
- 7) Use of IPM leads to decreased insecticide use.....agree..... disagree

E. SOURCES OF INFORMATION

This question asks about where you obtain information about farming and how useful it is to you.

1. Please indicate how important each of the following sources of information are to you in learning about potato pest and crop management. (Please circle your responses.)

(How IMPORTANT is this source of information?)

- 1) **winter meetings or workshops**not somewhat very
- 2) **on-farm twilight meetings or demonstrations**not somewhat very
- 3) ***New England Vegetable Production Guide***not somewhat very
- 4) **IPM hotline, recorded phone message**.....not somewhat very
- 5) **Extension newsletter or pest message**not somewhat very
- 6) **farm visits from Extension specialist**not somewhat very
- 7) **farm visits from private crop consultant**.....not somewhat very
- 8) **other farmers**.....not somewhat very
- 9) **other** (please specify: _____) ...not somewhat very

Are there any other pest control or crop management problems or solutions that you wish your state university would research further or provide more training on? Please tell us what they are.

THANK YOU FOR YOUR THOUGHT AND YOUR TIME!