

RISK and IPM HOP PRODUCTION in the PACIFIC NORTHWEST

Integrated Pest Management (IPM) is a pest management strategy that *emphasizes selecting, integrating, and implementing complimentary pest management strategies to maintain pests at economically acceptable levels while minimizing negative ecological and social impacts of pest management activities.*

The following questions are asked to help us gather information on risk and IPM in hop production. The focus is during the 2010 growing and production season. Please be assured that we will keep this information in **STRICT CONFIDENTIALITY** and **ONLY FOR OUR OWN RESEARCH PURPOSES**. Summary information will be reported in research findings but not individual responses.

PART A. HOP PRODUCTION CHARACTERISTICS

A1. Name of primary hop business/enterprise: _____ zip code: _____

A2. What year did this hops business/enterprise begin operation? _____

A3. Please list all the hop varieties grown on your farm in 2010 on separate lines in the table below. For each variety report the total acreage grown, whether the hop variety was produced organically, the total acreage harvested, and the total yield. Also report the base price received by the grower, the length of the current contract for a particular variety(s), and identify type of firm with whom you contract. If you have multiple contracts for a specific variety, please split and list on a separate lines in the table below.

Hop Variety	Acreage Grown (acres)	Organically produced (Yes or No)	Acreage Harvested (acres)	Yield (total pounds)	Base Price (\$/pound)	Contract Length (enter years or NC for no contract)	Contract with 1)Large brewery 2)Small brewery 3)Hops merchant 4)Other grower 5)Other

A4. What percent of the your 2010 crop has been exported? _____ %

A5. Have you ever had all or part of your hops output rejected by a contracted buyer?
(Please skip this question if you have never been under contract)

- No
- Yes ⇒ please specify the reason _____ ,

the variety _____, and the percentage of your total yield (across all varieties) rejected.
 _____%

A5. Please indicate the current gross revenue of the hop enterprise in 2010:

- less than \$1,000,000 \$2,000,001 to \$2,500,000 \$4,000,001 to \$4,500,000
 \$1,000,001 to \$1,500,000 \$2,500,001 to \$3,000,000 \$4,500,001 to 5,000,000
 \$1,500,001 to \$2,000,000 \$3,500,001 to \$4,000,000 Over \$5,000,000

A6. Please indicate the number of workers, labor hours for your hop production, as well as the total cost of hired labor in 2010.

Farm Manager: Yes. If yes, provide total cost _____ (\$/year) No

	Number of workers	Hours per week of work	Total cost of labor
Permanent/Year-round:			
<u>Self and family</u>			
<u>Non-family workers</u>			
Additional/Seasonal:			
<u>Self and family</u>			
<u>Non-family workers</u>			

A7. What was your total cost of water for hop irrigation in 2010? \$ _____

A8. What was the total amount of nitrogen fertilizer used on the hop business/enterprise in 2010? _____ total pounds, and the total cost \$ _____

A9. Please list in the table below the total amount and cost of pest control in 2010 for your hop business/enterprise.

	Total pounds	Total cost (\$)
Mildews (e.g., Powdery Mildew, Downy Mildew)		
Chemical fungicide		
Biological fungicide		
Spider mite		
Chemical miticide/pesticide		

Biological miticide/pesticide		
Other biological pest controls inputs, please specify: _____		

A16. What was your total production cost for the 2010 hops season? \$ _____

A10. What was the percent of yield loss on total production across all varieties for each of the pest problems listed below in 2010?

- Downy mildew _____ %
- Powdery mildew _____ %
- Spider mites _____ %

PART B. PEST MANAGEMENT PRACTICES

The following questions provide us with information on your pest management practices in 2010.

B1. Do you use a pest control advisor (PCA)?

- Yes. If yes, provide total cost of PCA in 2010 \$ _____
- No

B2. Which of the following methods of preventing and controlling *powdery mildew/downy mildew* have you practiced? Check all that apply

- a. Scouting, monitoring pest populations and/ or use economic threshold levels
- b. Select disease resistant hop varieties
- c. Using chemical fungicides/pesticides
- d. Pick hops early
- e. Removing basal growth with chemical desiccants in order to remove disease tissues and delay disease development
- f. Timely providing, altering fertilizer/irrigation levels or schedules
- Other, please specify _____

B3. Which of the following methods of controlling *spider mites* have you practiced? Check all that apply

- a. Scouting, monitoring pest populations and/ or use economic threshold levels
- b. Using chemical miticides/pesticides
- c. Preserve and attract endemic spider mites' natural enemies
- d. Maintain basal foliage in order to prevent spider mites
- e. Covering dirt road with gravel, straw, or crop debris, watering or oiling roads to minimize dusts.
- f. Timely providing, altering fertilizer/irrigation levels or schedules
- g. Other, please specify _____

B4. On average, how many labor hours per week were required for controlling *powdery mildew(downy mildew) and spider mites* in growing hops?

Labor hours for *scouting*: _____ hours/week

Labor hours for *applying chemical pesticides*: _____ hours/week

Labor hours for *applying biological pest controls*(e.g., activities related but not limited to B2(d-f),B3(c-f)): _____hours/week

B5. Which of the following quality issue do you concern most when choosing pest control methods?

- a. Seeds, leaves and stems
- b. Moisture (not too wet or over-dried)
- c. Good and even color
- d. Free from diseases(e.g., vermin, mold etc.)
- e. Not be injured by agricultural chemicals
- f. Chemical tolerance levels
- g. Other, please specify_____

B6. Question about chemical tolerance level:

B7. If the cost of chemical pesticides increased to 3 times your current cost would you switch to biological control for spider mites?

- Yes ⇒ go to question B6
- No ⇒ go to question B7

B8. If the cost of chemical pesticides increased to 4 times your current cost would you switch to biological control for spider mites?

- Yes
- No

B9. If the cost of chemical pesticides increased to 2 times your current cost would you switch to biological control for spider mites?

- Yes
- No

B10. If the cost of conventional control increased to 3 times your current cost would you switch to organic control for powdery mildew(downy mildew)?

- Yes ⇒ go to question B9
- No ⇒ go to question B10

B11. If the cost of conventional control increased to 4 times your current cost would you switch to organic control for powdery mildew(downy mildew)?

- Yes
- No

B12. If the cost of conventional control increased to 2 times your current cost would you switch to organic control for powdery mildew(downy mildew)?

- Yes
- No

PART C. GENERAL INFORMATION

The following questions are about principal grower's personal background. All information is strictly confidential. All results will be reported so that no individual will be identified. Please fill out the following questions based on your best knowledge of the principal grower.

C1. Are you the principal grower of hops?

- Yes
- No ⇒ Which of the following applies to you? (check all that apply)
 - farm manager agricultural field staff
 - crop consultant research/extension
 - other(please specify)_____

C2. What is the gender of the principal grower? Male Female

C3. What is the race/ethnic background of the principal grower?

- Caucasian Indigenous/Native People Black/African American
- Hispanic Asian/Pacific Islander Other

C4. Please indicate the age of the principal grower?

- less than 25 yrs 36 to 40 yrs 51 to 55 yrs 66 to 70 yrs
- 26 to 30 yrs 41 to 45 yrs 56 to 60 yrs over 70 yrs
- 31 to 35 yrs 46 to 50 yrs 61 to 65 yrs

C5. Please indicate the principal grower's highest level of formal education

- Some high school AA(2yr) degree Graduate degree
(MA, PhD, etc.)
- High school graduate Some college Professional degree
(Law, MD, etc.)
- High school GED College degree (BA/BS)
- Technical degree Some post-graduate education

C6. Which category best describes your household income as it relates to your hop business/enterprise? (check all that apply)

- income from hops farming fully supports the household
- income from hops farming partially supports the household, supplemented by spousal income
- income from hops farming partially supports the household, supplemented by income from sources other than spouse

C7. Do you purchase crop insurance? Yes No

C8. What is the total number of other crops are grown on your farm? _____.

The last section of this survey contains a short question and is **Optional**. If you are willing to answer the last part of the survey you will have the opportunity to earn **Additional money**.

PART D. EXPERIMENT ON RISK ATTITUDES

The following questions will help us to understand your risk level

Instructions: You will be making **Ten decisions** between two lotteries, such as those represented as "Option A" and "Option B" below.

- Each Decision Row contains a pair of choices between **Option A** and **Option B**.
- You make your choice by checking the box on option "A" or "B" on the left. **Only one** option in each row can be selected, and you may change your decision as you wish.

How to determine the money payment:

Even though you will make ten decisions, **only one** of these will end up being used. The selection of the one to be used depends on the "throw of a ten-sided die" determined by the computer.

For example, suppose that you make all ten decisions and the throw of the die is 9, then your choice, A or B, for Decision 9 below would be used and the other decisions would not be used.

Then a second random number is obtained to determine the earnings for the option you chose for that row. In Decision 9 below, for example, a throw of 1, 2, 3, 4, 5, 6, 7, 8, or 9 will result in a \$7 payoff if you choose A, or a \$13 payoff if you choose B. Similarly, a throw of 10 will result in the lower payoff.

Please make ten choices for options A or B by checking one box in each row in the table below. Make these choices in any order and change them as much as you wish.

	Option A	Option B
Decision 1	<input type="checkbox"/> 1 in 10 chance to win \$8.00, 9 in 10 of \$6.40	<input type="checkbox"/> 1 in 10 chance to win \$15.40, 9 in 10 of \$0.40
Decision 2	<input type="checkbox"/> 2 in 10 chance to win \$8.00, 8 in 10 of \$6.40	<input type="checkbox"/> 2 in 10 chance to win \$15.40, 8 in 10 of \$0.40
Decision 3	<input type="checkbox"/> 3 in 10 chance to win \$8.00, 7 in 10 of \$6.40	<input type="checkbox"/> 3 in 10 chance to win \$15.40, 7 in 10 of \$0.40
Decision 4	<input type="checkbox"/> 4 in 10 chance to win \$8.00, 6 in 10 of \$6.40	<input type="checkbox"/> 4 in 10 chance to win \$15.40, 6 in 10 of \$0.40
Decision 5	<input type="checkbox"/> 5 in 10 chance to win \$8.00, 5 in 10 of \$6.40	<input type="checkbox"/> 5 in 10 chance to win \$15.40, 5 in 10 of \$0.40
Decision 6	<input type="checkbox"/> 6 in 10 chance to win \$8.00, 4 in 10 of \$6.40	<input type="checkbox"/> 6 in 10 chance to win \$15.40, 4 in 10 of \$0.40
Decision 7	<input type="checkbox"/> 7 in 10 chance to win \$8.00, 3 in 10 of \$6.40	<input type="checkbox"/> 7 in 10 chance to win \$15.40, 3 in 10 of \$0.40
Decision 8	<input type="checkbox"/> 8 in 10 chance to win \$8.00, 2 in 10 of \$6.40	<input type="checkbox"/> 8 in 10 chance to win \$15.40, 2 in 10 of \$0.40
Decision 9	<input type="checkbox"/> 9 in 10 chance to win \$8.00, 1 in 10 of \$6.40	<input type="checkbox"/> 9 in 10 chance to win \$15.40, 1 in 10 of \$0.40

Decision	<input type="checkbox"/> 10 in 10 chance to win \$8.00, 0 in 10	<input type="checkbox"/> 10 in 10 chance to win \$15.40, 0 in 10
10	of \$6.40	of \$0.40
