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International Agricultural Trade and Policy Center

**RISK MANAGEMENT PRACTICES FOR SPECIALTY CROP
PRODUCERS IN CALIFORNIA, FLORIDA, NEW YORK, AND
PENNSYLVANIA**

By

Jione Jung, Richard Weldon, & John VanSickle

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- Serve as a nation-wide resource for research on public policy issues concerning specialty crops.
- Disseminate research results to, and interact with, policymakers; research, business, industry, and resource groups; and state, federal, and international agencies to facilitate the policy debate on specialty crop issues.

Risk Management Practices for Specialty
Crop Producers in California, Florida,
New York and Pennsylvania
Survey Summary

May 18, 2005

By
Jione Jung
Richard Weldon
John VanSickle

International Agricultural Trade and Policy Center
Food and Resource Economics Department
University of Florida
Gainesville, FL

BACKGROUND¹

The USDA Risk Management Agency funded a survey to examine the unique needs of the specialty crop producers. Specialty crops include all agricultural crops (except for wheat, feed grains, oilseeds, cotton, rice, peanuts, sugar, and tobacco) from fruits and vegetables to Christmas trees and maple syrup, which are generally higher-value, more perishable, and sometimes not edible.

Vegetables and melons averaged 8% of all farm cash receipts between 1995 and 1999 and 14% (\$14.9 billion) of crop receipts. This was generated on about 1% of all the U.S. harvest acreage. Vegetable and melon farms are largely individually owned and relatively small. In 1997, having sales in excess of \$500,000, about 11% of vegetable and melon farms accounted for 70% of total vegetable and melon acreage. California and Florida produce the largest selection and quantity of fresh vegetables. Vegetable and melon industries can be classified by the two end-uses: fresh and processing. Crops grown specifically for one use may not be switched to the other use. About 53% of all vegetable and melon production is utilized for processing.

California and Florida have some of the largest floriculture and nursery growers and highest sales in the United States.² In 2002, the U.S. floriculture production area totaled about 58,000 acres with average annual sales per grower of \$450,000. According to the recent USDA survey of U.S. nursery crops in 2000, total combined production area of 17 major nursery crop states was 369,000 acres.³ Growers in California sold \$857 million of nursery crops in 2000, while Florida sold \$462 million. Sales of Christmas trees accounted for \$149 millions.

The U.S. fruits and tree nuts industry generated \$12.7 billion in farm cash receipts in 2000 (7% of all farm cash receipts and 14% of all crop receipts). Based on data from the Census of Agriculture, fruits and nuts acreage was 5.3 million acres in 1997. Of the total acreage, 48% was for non-citrus production, 27% for nuts, and 25% for citrus. The most significant fruits in terms of farm cash receipts in 2000 were grapes (\$3.1 billion), oranges (\$2.1 billion), apples (\$1.4 billion), and strawberries (\$1.0 billion). California and Florida are those of the largest fruit producing states. Based on data from the National Agricultural Statistics Service, 48% of fruit producing acreage was in California, followed by Florida (24%) in 2000. U.S. tree nuts production totaled 2.2 billion pounds in 2000 with \$1.5 billion of farm cash receipts. Almonds, walnuts, pecans, and pistachios accounted for 97% of U.S. sales. California is the number one producer of tree nuts (83% of U.S. tree nuts production).

¹ Most of the contents in this section are from *Briefing Rooms* of the USDA Economic Research Services: *Vegetables and Melons*, *Floriculture Crops*, and *Fruit and Tree Nuts*.

² Floriculture crops include bedding plants, flowering plants, foliage plants, cut cultivated greens, and cut flowers. The Census of Agriculture defines nursery crops as ornamental trees and shrubs, fruit and nut trees (for landscaping), vines, and ground covers.

³ The 17 selected states were AL, CA, CT, FL, GA, IL, MI, NJ, NY, NC, OH, OR, PA, SC, TN, TX, and WA.

EXECUTIVE SUMMARY

The International Agricultural Trade and Policy Center (IATPC) in cooperation with the USDA Risk Management Agency surveyed specialty crop producers in California, Florida, New York, and Pennsylvania for the following objectives:

- To provide information for both production and marketing systems and enable the Risk Management Agency to develop a risk management profile of specialty crop producers.
- To improve the design of future crop insurance programs to meet the unique needs of specialty crop producers.

The survey consisted of questions regarding:

- Farm size and regional profile
- Years of farming experience
- Crops grown
- Organic production
- Primary specialty crop use and marketing channels
- Primary specialty crop yield and yield, price, and profit fluctuations
- Main causes of low profit
- Sources of risk
- Preference for risk management tools
- Receipt of government disaster payments or loans
- Purchase of crop insurance
- Reason for crop insurance participation decisions
- Suggestions for improving crop insurance program
- Importance of risk management
- Familiarity of crop insurance
- Participation in risk management education
- Off-farm income share
- Financial characteristics: value of gross sales, assets, and debts

This analysis utilized 18,756 responses to provide a detailed summary of the survey. Accounting for 55%, the number of responses from California was the largest, followed by Florida (18%), New York (15%), and Pennsylvania (12%). The results from the survey show the extreme diversity of the specialty crop industry. A total of 137 different specialty crops were represented in this survey. Primary specialty crops include nurseries, grapes, oranges, almonds, walnuts and Christmas trees, accounting for over 50% of total survey responses. The summary of results is as follows:

- The average years in farming represented in the survey were 24.7 years.
- The average farm size was 195.2 acres. The average acreage of the vegetable group (449.9 acres) is the largest, followed by citrus (320.9 acres).
- Only 929 specialty crop growers practiced organic farming in 2001. About 6.2% of California growers produced organic crops, followed by New York (5.7%), Pennsylvania (3.1%), and Florida (2.0%).

- About 45% of growers produced their specialty crops exclusively for fresh use. Only 8% supply for both fresh and processing use.
- Selling at a predetermined price was the major outlet for processing use, while direct marketing to consumers was the most frequent marketing channel for fresh use.
- Over all crop producers, 33.4% indicated that yield fluctuated less than 10% over the last five years. The results are similar in price and profit fluctuations (39.6% and 34.4%, respectively).
- Poor yield was the main cause of the lowest profit, followed by low market prices due to high production and due to high levels of imports.
- Adverse temperature and output price fluctuation were the two highest ranked risk sources.
- Crop insurance was the most preferred and available risk management tool, followed by crop diversification and diversified marketing.
- About 30% of specialty crop growers reported that they had received government disaster payments or loans.
- A half of specialty crop growers responded that risk management has become more important.
- Less than 50% of specialty crop growers had attended any meeting or seminar for risk management education.
- About 60% of specialty crop growers did not purchase crop insurance during the last five years. A high of 80% of the ornamental producers did not purchase crop insurance.
- High risk of crop loss was the most important reason for purchasing crop insurance, followed by a requirement to qualify for USDA programs.
- Unavailability of crop insurance was the number one reason for not purchasing crop insurance, followed by never having lost enough to file and too high premium cost.
- Compensating a higher level of production loss was the most important way to improve crop insurance, followed by compensating for a loss of profit, compensating for a loss of gross sales, and guaranteeing cash production cost.
- A half of specialty crop growers indicated that they became more familiar with crop insurance programs.
- About 20% of specialty crop growers reported that 91~100% of their household income came from non-farm activities, while only 8.4% indicated that non-farm income was zero.
- Gross agricultural sales averaged \$570,000 per farm with averages of \$1.7 million in total assets and \$470,000 in debts. Only 6.4% of specialty crop growers reported that their gross sales in 2001 were over one million dollars, while 23.4% said that the gross sales were less than \$10,000.

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1. INTRODUCTION

The International Agricultural Trade and Policy Center (IATPC) in cooperation with the USDA Risk Management Agency of the United States Department of Agriculture surveyed specialty crop producers in California, Florida, New York and Pennsylvania to examine the unique needs of these producers for the purpose of providing data for developing new risk management tools and instruments, particularly crop insurance (see Appendix I for the survey form). The survey was conducted with mailings and telephone interviews in 2002. The California Agricultural Statistical Service (CASS, the California office of the National Agricultural Statistical Service (NASS), USDA) mailed out 31,864 surveys and received 15,137 responses (48% response rate). Sixty eight percent of those responses or 10,285 observations were found to be usable. The Florida Agricultural Statistics Service (FASS, the Florida office of NASS, USDA) mailed out 16,889 surveys to Florida specialty crop producers. There were 9,256 surveys returned (55% response rate) where 3,394 or 37% were usable. The New York Agricultural Statistic Service mailed out 8,998 surveys and received 2,798 usable responses. The Pennsylvania office of NASS sent surveys to 7,349 Pennsylvania specialty growers and 2,279 usable responses were obtained. Overall, a total of 18,756 observations are used in this analysis (Table 1-1).

Table 1-1. Number of usable survey responses by states.

	Number of usable responses	Percent
California	10,285	55%
Florida	3,394	18%
New York	2,789	15%
Pennsylvania	2,279	12%
All	18,756	100%

The four-page questionnaire (provided in the appendix) focused on several aspects of the specialty crop producer's operation. In addition to total farm acreage the respondents were asked to provide acreage on major crops grown, specialty crops, and organic crops produced. They were asked to provide financial information on off-farm income, gross sales and value of assets and equity. Additional questions requested marketing channel information such as relative proportion of the primary specialty crop that went for processing versus fresh marketing and specific outlets for each.

The survey attempted to obtain information concerning the various sources of risk facing the producer. The respondents were asked to provide actual yield history (5-years) for the primary specialty crops produced and variability that had been experienced over the last five years in yield per acre, price and profit. In addition, the respondents were asked to list the main cause of lowest profit for the primary specialty crop over the last five years and to rank various sources of risk and their effect on net farm income, including adverse temperature, floods, drought, disease, input and output price fluctuations, pest and quarantine.

A set of questions dealt with risk management, in general, and crop insurance, in particular. The respondents were asked to give a preference ranking of risk management tools, the availability and utilization of risk management tools, and the history of receiving government disaster payments or loans. Those respondents that had purchased crop insurance were asked to rank

various reasons for making the purchase including; risk of high crop loss, expected water supply reduction, required for qualification in other USDA programs, expected low price or lender requirement. In a similar manner those that did not purchase crop insurance were asked to rank various reasons for not having made crop insurance purchases including; not available, major source of risk not insured, too much paperwork, never lose enough to qualify, premium cost too high, lack of a knowledgeable agent and lack of understanding about crop insurance. All respondents were asked to provide information on how crop insurance could be improved. Questions, also, addressed the importance of risk management to the producers, participation in risk management educational meetings and familiarity with crop insurance.

The purpose of this report is to provide an initial summary of the tabulation of responses to the survey for the four states involved in the survey. This report is intended to compliment the earlier reports completed by the individual states.⁴ The responses are tabulated for all respondents and by state. Where appropriate, questions are also tabulated by individual crop groupings. The report follows the basic framework of the actual questionnaire.

1-1. Primary specialty crops

A total of 137 different specialty crops are represented in the responses to the survey (for detail, see Appendix II). Primary specialty crops include nursery (1,860 responses, 9.9%); grapes for wine (1,730 responses, 9.2%); all oranges (1,455 responses, 7.8%); almonds (1,425 responses, 7.6%); walnut (1,154 response, 6.2%); Christmas trees (948 responses, 5.1%); and grapes for raisins (941 responses, 5.0%).⁵ These seven specialty crops represent over 50% of the responses. Only 21 crops represent at least 1% of the total survey response. Out of 137 specialty crops, 35 crops made up 90% of the survey responses and 49 crops make up 95%. At the other extreme, there are 16 specialty crops that are represented by a single producer. There are 45 specialty crops that are represented with five or fewer farms.

1-2. Crop aggregation

The primary specialty crops are consolidated into seven groups for a manageable analysis. Those groups are (1) vegetables, (2) ornamentals, (3) citrus, (4) berries and melons, (5) nuts, (6) non-citrus fruits and (7) miscellaneous.⁶ The predominant specialty crop group represented in the survey is non-citrus fruits with 6,265 responses (33.4% of total survey responses). About

⁴ Lee, H. and S.C. Blank. "A Statistical Profile of Horticultural Crop Industries in California, with Emphasis on Risk Issues." Department of Agricultural and Resource Economics, University of California, Davis (June 2003).

Weldon, R. and J. VanSickle. "Risk Management Practices for Specialty Crop Producers in Florida." Department of Food and Resource Economics, University of Florida, Gainesville.

White, G.B., W.L. Uva and M.-L. Cheng. "Analysis of Risk Management Practices of Specialty Crop Producers in New York: Implications for Crop Insurance." Department of Applied Economics and Management, Cornell University, Ithaca (March 2003).

Harper, J.K. "Results of the 2002 Pennsylvania Specialty Crop Risk Management Survey." Department of Agricultural Economics and Rural Sociology, Pennsylvania State University, University Park (July 2003).

⁵ The responses from all grape producers including grapes for wine, grapes for raisins, table grapes, and all other grapes are 3,491, which accounts for 18.6% of total number of responses (18,756). The responses from all orange growers including navel oranges, Valencia oranges and all other oranges are 2,036, which make up 10.9% of 18,756 observations.

⁶ The miscellaneous group includes; maple syrup, bee & honey total colonies, aquaculture, other specialty crops (especially from New York), herbs, honey producing colonies, mint, watercress, peppermint, wild rice, safflower, canola, other livestock including exotic, quail and taro.

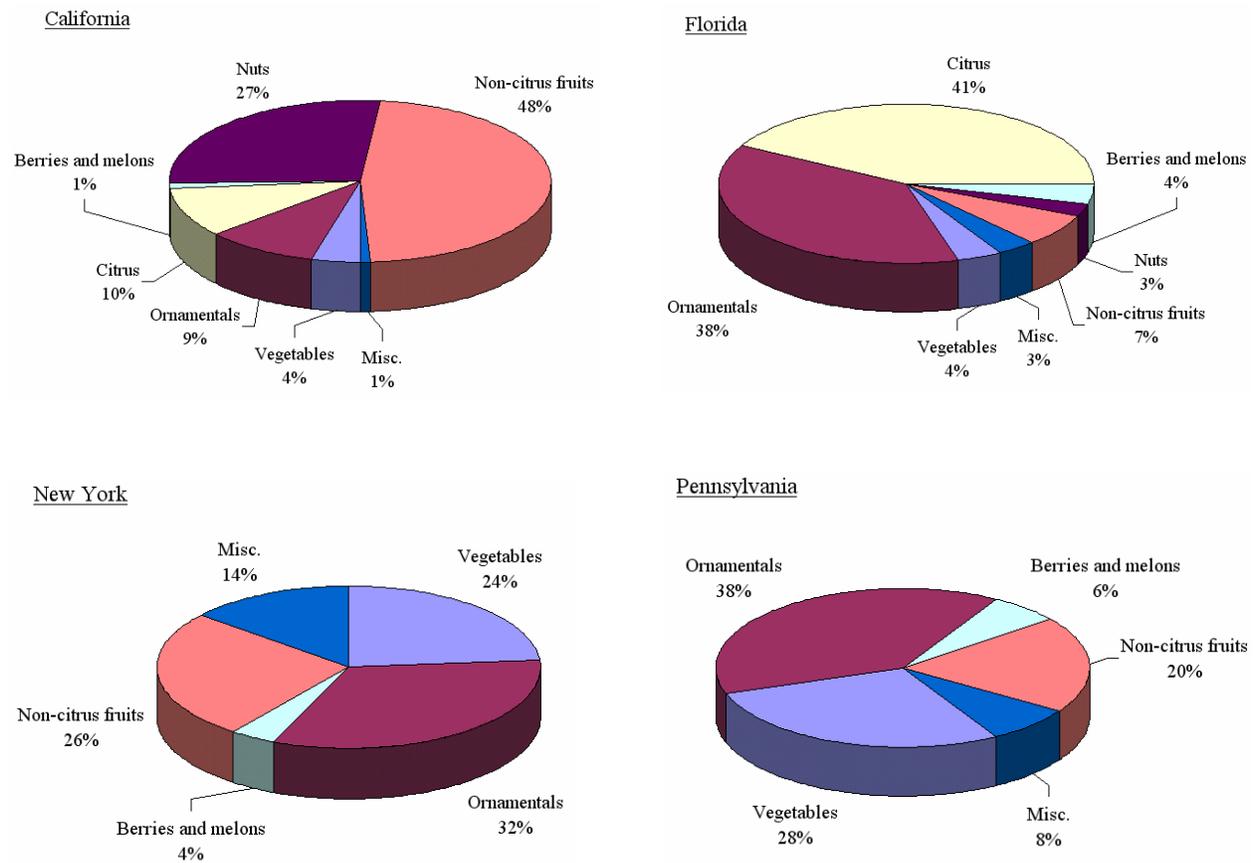
21% (4,028 producers) are ornamental crops. Nuts, citrus and vegetables account for 15.3%, 13.0%, and 10.0%, respectively. Berries and melons and miscellaneous groups make up only 6.9%. (See Appendix III for the top 5 primary specialty crops in each crop category.)

Table 1-2. Primary specialty crops by category.

	Crop group code	Number of responses	Percent
Vegetables	1	1,873	10.0%
Ornamentals	2	4,028	21.5%
Citrus	3	2,438	13.0%
Berries and melons	4	516	2.8%
Nuts	5	2,871	15.3%
Non-citrus fruits	6	6,265	33.4%
Misc.	7	763	4.1%
All		18,754	100.0%

Distributions of specialty crop groups are presented by state in Figure 1-1. The major specialty crop group in California is non-citrus fruits followed by nuts, citrus, ornamentals, vegetables, and berries and melons. The largest individual specialty crop represented in California is grapes for wine (16.8% of total California responses) followed by almonds (13.9%) and walnuts (11.2%).

Figure 1-1. Distribution of crop groups by state.



Citrus is the major specialty crop group in Florida followed by ornamentals, non-citrus fruits, berries and melons, vegetables, and nuts. The largest individual specialty crop represented in Florida is oranges (35.9% of total Florida responses) followed by nurseries (27.1%). The predominant specialty crop group in New York and Pennsylvania is ornamentals. Vegetables and non-citrus fruits in these two states account for nearly 50% of their total number of specialty crops represented in the survey. The largest individual specialty crop represented in New York is grapes (15.9% of total New York responses) followed by Christmas trees (13.3%) and greenhouse crops (11.4%). The largest individual specialty crop represented in Pennsylvania is Christmas trees (20.3% of total Pennsylvania responses) followed by cut flowers and greens (11.7%), apples (11.2%), and sweet corn (11.1%).

1-3. Average farming years

The average years in farming represented in the survey are 24.7 years (Table 1-3). The average farming years of vegetable and citrus growers are above the average. The average farming years of citrus growers are the longest in California and Florida (27.7 and 26.8 years, respectively). The average farming years of nut producers in Pennsylvania are the longest among all specialty crop producers in all four states (30.0 years), while the average farming years of ornamental producers in Florida are the shortest (18.5 years, excluding 13.3 years of miscellaneous crop producers).

Table 1-3. Average years of farming by crop group and state.

	California	Florida	New York	Pennsylvania	State average
Vegetables	25.7	21.6	28.4	27.6	27.0
Ornamentals	22.3	18.5	22.9	24.2	21.6
Citrus	27.7	26.8	-	-	27.1
Berries and melons	20.0	21.7	22.6	24.7	22.3
Nuts	25.5	20.9	-	30.0	25.4
Non-citrus fruits	25.0	20.8	26.8	26.8	25.2
Misc.	21.4	13.3	24.9	23.4	22.4
Group average	25.1	22.2	25.5	25.7	24.7

1-4. Average farm size

The average farm size represented in the survey is 195.2 acres (Table 1-4). The average acreage of vegetable farms (449.9 acres) is the largest followed by citrus (320.9 acres). The average farm size of Florida specialty crop producers (245.4 acres) is the largest among all 4 states followed by California (203.9 acres), New York (154.4 acres) and Pennsylvania (125.8 acres) specialty crop producers. In California, the average acreage per vegetable farms is a high of 1,103.5 acres. In Florida, the average size of citrus operation is a high of 446.6 acres. The largest average operation size is of vegetable farms in both New York and Pennsylvania (309.4 and 188.7 acres, respectively).

Table 1-4. Average acres in operations by crop group and state.

	California	Florida	New York	Pennsylvania	State average
Vegetables	1,103.5	215.9	309.4	188.7	449.9
Ornamentals	199.4	109.6	71.6	110.3	124.0
Citrus	146.8	446.6	-	-	320.9
Berries and melons	357.0	120.5	100.2	65.7	161.1

Nuts	185.3	53.6	-	25.0	181.0
Non-citrus fruits	143.7	16.5	112.9	103.1	132.9
Misc.	149.7	53.1	160.1	78.3	122.5
Group average	203.9	245.4	154.5	125.8	195.2

1-5. Organic production

The number of organic farms by crop group is summarized in Table 1-5. Only 929 producers (5% of total responses) responded that they practiced organic farming. The group of berries and melons represent the highest ratio of organic to non-organic farming followed by vegetables. The rate of organic production in the ornamental group is the lowest.

Table 1-5. Organic production by crop group.

	No organic production		Organic production		Total
	Number of responses	Percent	Number of responses	Percent	
Vegetables	1,686	90.8%	170	9.2%	1,856
Ornamentals	3,903	97.6%	98	2.4%	4,001
Citrus	2,356	96.8%	77	3.2%	2,433
Berries and melons	459	90.0%	51	10.0%	510
Nuts	2,726	95.1%	140	4.9%	2,866
Non-citrus fruits	5,909	94.7%	334	5.3%	6,243
Misc.	685	92.1%	59	7.9%	744
All	17,724	95.0%	929	5.0%	18,653

Table 1-6 shows the distribution of organic farms by state. About 6% of California growers practiced organic farming and 5.7% of New York growers produced organic products. The rate of organic production is lower than the average in Florida and Pennsylvania (2.0% and 3.1%, respectively).

Table 1-6. Organic production by state.

	No organic production		Organic production		Total
	Number of responses	Percent	Number of responses	Percent	
California	9,627	93.8%	635	6.2%	10,262
Florida	3,322	98.0%	67	2.0%	3,389
New York	2,639	94.3%	159	5.7%	2,798
Pennsylvania	2,137	96.9%	69	3.1%	2,206
All	17,725	95.0%	930	5.0%	18,655

2. MARKETING

This section summarizes the survey results on types of marketing (i.e., processing or fresh) and channels for each type of marketing.

2-1. Marketing type: Fresh vs. processing

About 45% of total responses (8,437 producers) indicate that 100% of their specialty crops were designated to fresh use, while 7,977 producers reported that their entire specialty crop production was used for processing (Table 2-1). Only 8% of farms (1,498 producers) supply for both fresh and processing use. For fresh use, 99.0% of ornamental crop growers responded that they marketed their ornamental crops only for fresh use purposes. For processing, 98.0% of nut producers indicated that their nut products were designated only to the processors.

Table 2-1. Distribution of type of marketing by crop group: Fresh versus processing use.

	Fresh		Processing	
	Total Number of responses	100% fresh use	Total Number of responses	100% processing use
Vegetables	1,582	1,445 (91.3%)	369	232 (62.9%)
Ornamentals	3,907	3,869 (99.0%)	55	17 (30.9%)
Citrus	1,302	753 (57.8%)	1,558	1,009 (64.8%)
Berries and melons	495	448 (90.5%)	57	10 (17.5%)
Nuts	223	174 (78.0%)	2,487	2,438 (98.0%)
Non-citrus fruits	2,090	1,456 (69.7%)	4,509	3,875 (85.9%)
Misc.	336	292 (86.9%)	440	396 (90.0%)
All	9,935	8,437 (84.9%)	9,475	7,977 (84.2%)

2-2. Marketing channels for processing use

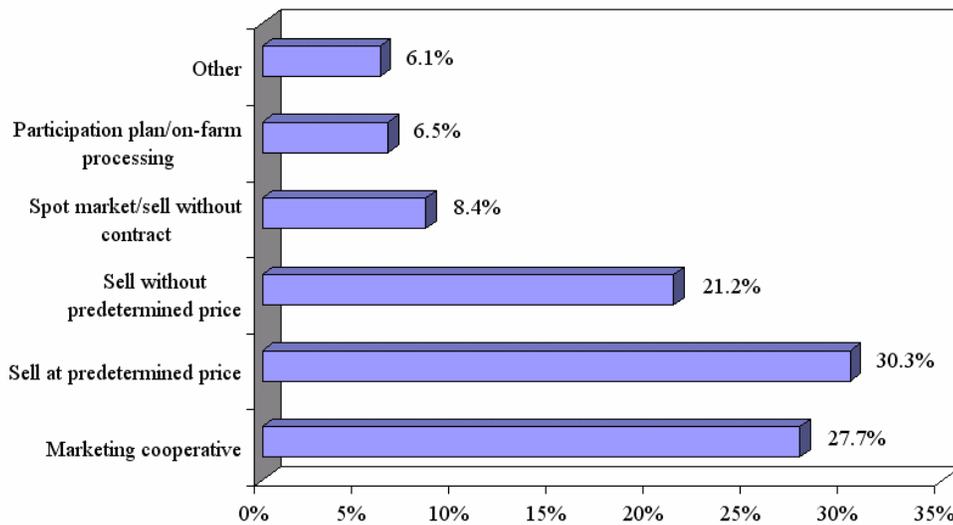
Marketing channels differ for an end (processing vs. fresh) use of a crop since it involves different post-harvest handling. The survey asked specialty crop producers what percentage of their crops (which were produced for processing use) was marketed through listed channels. The listed channels are (1) marketing cooperative, (2) selling to a processor under contract with a predetermined price, (3) selling to a processor under contract without a predetermined price, (4) selling without contract, (5) on-farm processing and (6) other outlets.⁷

Selling to a processor at a predetermined price is the major marketing channel for specialty crops that are produced for processing (Figure 2-1). About 30% (3,062 responses) reported that they used it most frequently.⁸ Of these, 2,606 respondents said that they sold their entire crops using this method. Marketing cooperative and “selling without a predetermined price” are ranked next (27.7% and 21.2%, respectively).

⁷ For the California survey, spot market and participation plan are given instead of selling without contract and on-farm processing.

⁸ However, in terms of the percentage of using a specific channel for marketing a crop, marketing cooperative is ranked the highest (94.7%) among all marketing channels followed by “selling at a predetermined price” (93.3%) and “selling without a predetermined price” (92.8%). See Appendix IV for detail.

Figure 2-1. Marketing channels for processing use.



“Selling at a predetermined price” was most frequently used by vegetables, citrus, berries and melons, and non-citrus fruit growers. For nut growers, marketing cooperative was most frequently used for marketing their crops for processing. For more detail of use of each marketing channel, see Appendix IV.

2-3. Marketing channels for fresh use

Grower-shipper status

The survey asked producers of fresh-use crops whether he or she was a grower and shipper (grower-shipper), or grower only.⁹ Table 2-2 indicates that about 9.8% of producers were grower-shippers. The ornamental industry has the largest proportion of grower-shippers (12.4%, excluding miscellaneous crop growers). Nut growers have the least proportion of grower-shippers (3.8%).

Table 2-2. Fresh use: Number of grower/shippers by crop group.

	Grower only		Grower-shipper		Total
	Number of responses	Percent	Number of responses	Percent	
Vegetables	1,353	90.3%	145	9.7%	1,498
Ornamentals	3,144	87.6%	446	12.4%	3,590
Citrus	1,168	95.7%	53	4.3%	1,221
Berries and melons	440	92.4%	36	7.6%	476
Nuts	201	96.2%	8	3.8%	209
Non-citrus fruits	1,768	91.8%	157	8.2%	1,925
Misc.	244	81.3%	56	18.7%	300
All	8,318	90.2%	901	9.8%	9,219

⁹ Grower-shippers are referred as such a case that large commercial growers integrate field production with post-harvest packing and shipping activities under the same ownership. p. 18, Lee, H. and S.C. Blank. “A Statistical Profile of Horticultural Crop Industries in California, with Emphasis on Risk Issues.” Department of Agricultural and Resource Economics, University of California, Davis (June, 2003).

By state, Florida shows the largest proportion of grower-shippers (13.4%) followed by California (11.1%) and Pennsylvania (9.9%). The proportion of grower-shippers of New York (2.7%) is far below the 4-state average of 9.8%.

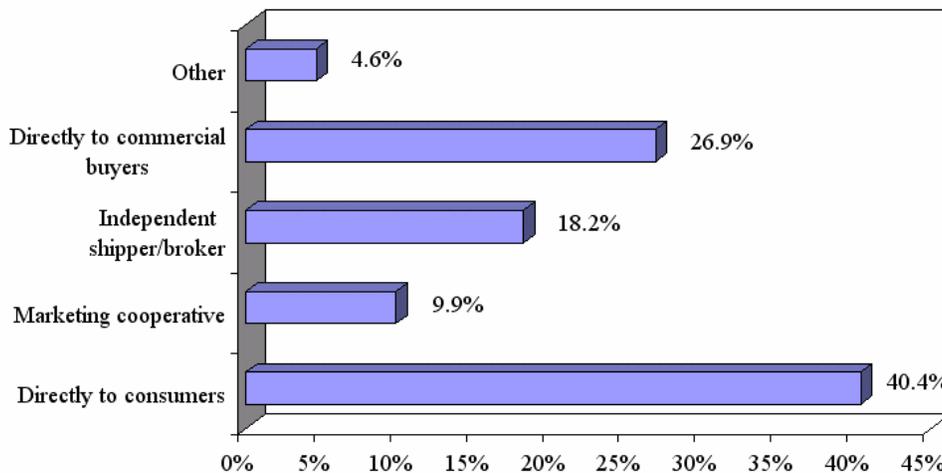
It was asked particularly to grower-shippers what percentage of volume was sold with a predetermined price. Selling at a predetermined price tends to reduce price risk. Of 901 grower-shippers, 666 responded that they sold an average of 84.1% of their products at a predetermined price. Among ornamental grower-shippers, 361 out of 441 farms sell an average of 89.8% of their crops at a predetermined price. For vegetable grower-shippers, the data indicated 107 vegetable grower-shippers selling 68.5% of their vegetables at a predetermined price (See Appendix V).

Marketing channels

The survey asked specialty crop producers what percentage of their crops (which were produced for fresh use) was marketed through listed channels. The listed channels are; (1) selling directly to consumers, (2) marketing cooperative, (3) independent shipper/broker, (4) directly to commercial buyers and (5) other.

As Figure 2-2 presents, selling directly to consumers (e.g., farmers’ markets, roadside stands, or U-pick) is the most frequently used marketing channel for fresh uses (40.4%), followed by direct marketing to commercial buyers (26.9%), using independent shipper/brokers (18.2%), and marketing cooperative (9.9%).¹⁰

Figure 2-2. Marketing channels for fresh use (Grower only).



¹⁰ However, in terms of the percentage of using a specific channel for marketing a crop, an average percentage of using independent shipper/brokers is the highest among all marketing channels (91.2%), followed by marketing cooperative (90.2%), direct marketing to consumers (84.4%), direct marketing to commercial buyers (78.1%), and other channels (73.0%). See Appendix VI for detail.

By crop group, direct marketing to consumers is most frequently used in vegetables, ornamentals, berries and melons, nuts, and miscellaneous groups. Citrus growers use mostly marketing cooperative for selling their fresh crops. The major outlet for non-citrus fruit growers is independent shipper/brokers. For more detail of use of each marketing channel, see Appendix VI.

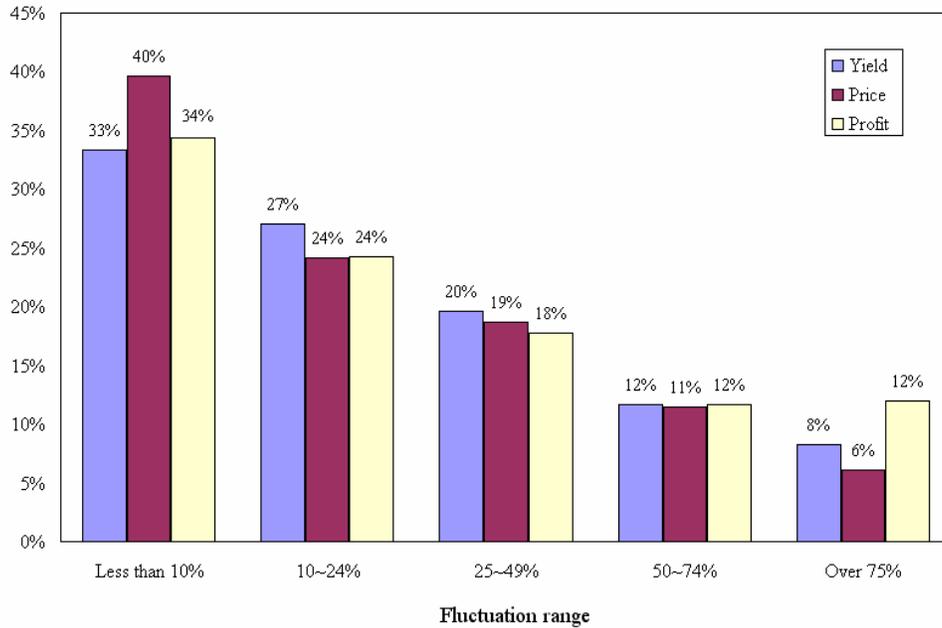
3. YIELD, PRICE, AND PROFIT

This section summarizes the survey results on specialty crop producers' yield, price and profit fluctuations. Also, the main cause of their lowest profits is explained.

3-1. Yield, price and profit fluctuations

Respondents to the survey were asked to indicate their largest yield, price, and profit fluctuations from the average over the last five years. Figure 3-1 reported the resulting distributions by fluctuation range. Over all crop producers, 33.4% indicated that yield fluctuated less than 10% over the last 5 years. The results are similar in price and profit fluctuations. (Respectively, 39.6% and 34.4% of total responses reported that price and profit fluctuated less than 10% from the 5-year average.)

Figure 3-1. Largest fluctuation of yield, price, and profit over the last five years.



An index for yield, price, and profit variability is constructed by ranking the variability from 1 (fluctuation less than 10%) to 5 (fluctuation from 75 to 100%) and then measuring the weighted average variability for each commodity group and for all crop producers. The results are summarized in Table 3-1. The index value for yield variability across all crop groups is 2.34, indicating that the average yield variability is in the 10 to 24% range. The crop group with the lowest yield variability is ornamentals (1.81), while nut growers reported the highest yield variability (2.62). The index value for price variability for all crop groups is 2.20, indicating that the average price variability is in the 10 to 24% range. Like the yield variability, the crop group with the lowest price variability is ornamentals (1.50), while nut growers reported the highest price variability (2.79).

Table 3-1. Index values of yield, price and profit fluctuation over the last five years.

<u>Crop groups</u>	Index value*		
	Yield	Price	Profit
Vegetables	2.29	1.82	2.16
Ornamentals	1.81	1.50	1.76
Citrus	2.34	2.61	2.84
Berries and melons	2.44	1.84	2.21
Nuts	2.62	2.79	2.83
Non-citrus fruits	2.56	2.47	2.69
Misc.	2.54	1.81	2.13
<u>States</u>			
California	2.50	2.60	2.76
Florida	2.01	1.89	2.20
New York	2.39	1.84	2.12
Pennsylvania	2.19	1.52	1.86
All	2.34	2.20	2.42

* An index for yield, price, and profit variability was constructed by ranking the variability from 1 (fluctuation less than 10%) to 5 (fluctuation from 75 to 100%) and then measuring the weighted average variability for each commodity group and for all crop producers.

The combination of yield and price risk should translate into profit risk which can be measured by profit variability. Index values constructed for profit variability indicate that the average value for profit variability across all commodity groups is in 10 to 25% variability range (2.42). Ornamental farms have the least profit variability (1.76). Citrus growers have the highest profit variability (2.84) followed by nuts (2.83). Index values are calculated also by state. California shows the highest variability of yield, price and profit (2.50, 2.60, and 2.76, respectively), while Florida shows the lowest variability in yield and Pennsylvania experienced the lowest variability in price and profit.

3-2. Main causes of low profit

The survey respondents were asked to give the main cause of their lowest profit over the last 5 years. About 35% (5,516 producers) responded that poor yield was the main cause of the lowest profit (Table 3-2). Low market prices due to high production (23.1%) and due to high levels of imports (14.1%) were all recognized as primary drivers of low profit. High input costs (10.2%) and other reasons (11.9%) ranked behind the primary causes, but were identified by significant numbers of growers. Poor yield was identified as the main cause of low profit for vegetables, berries and melons, non-citrus fruits, and miscellaneous crop growers. Increased imports were identified as the main reason for low profit for citrus, while over production was identified as the main reason for low profit for ornamentals and nuts. Poor yield (30.7%) and low market price due to overproduction (26.6%) were the two most important causes for the lowest profit for California producers. Florida producers reported that poor yield (24.7%) and low market price due to over production and increased imports (24.0% and 20.8%, respectively) were the main causes of the lowest profit. The main cause of the lowest profit for New York producers was poor yields, accounting for 49.8% of total responses. High input costs, low market price due to high domestic production, and low market price due to increased imports accounted for 41.2% of total responses in New York. Poor yield (52.0%) was the major reason for the lowest profit for Pennsylvania producers represented in the survey.

Table 3-2. Main cause of the lowest profit.

	Poor Yield	Poor Quality	High Input costs	Low price due to High Production	Low price due to Increased Imports	Inability to Market due to Quarantine	Other	Total Number of Observation
<u>Crop groups</u>								
Vegetables	55.9%	7.6%	8.3%	15.9%	9.2%	0.1%	3.1%	1,665
Ornamentals	18.3%	9.3%	22.9%	24.5%	8.4%	0.6%	15.9%	3,330
Citrus	22.9%	3.8%	5.2%	22.1%	34.1%	0.7%	11.2%	2,246
Berries and melons	57.4%	6.2%	9.3%	16.6%	4.0%	0.2%	6.4%	453
Nuts	33.1%	3.3%	5.3%	36.5%	6.7%	0.0%	15.0%	2,360
Non-citrus fruits	40.2%	4.6%	6.9%	21.4%	14.5%	0.4%	12.0%	5,424
Misc.	50.8%	5.2%	12.8%	4.5%	17.6%	1.4%	7.8%	579
<u>States</u>								
California	30.7%	4.2%	7.6%	26.6%	13.9%	0.3%	16.7%	8,699
Florida	24.7%	4.1%	11.4%	24.0%	20.8%	0.7%	14.3%	3,214
New York	49.8%	8.6%	14.8%	14.4%	12.0%	0.4%	-	2,274
Pennsylvania	52.0%	11.4%	14.3%	15.5%	6.1%	0.7%	-	1,871
All producers	34.7%	5.6%	10.2%	23.1%	14.1%	0.5%	11.9%	16,058

* N = Number of responses

Figure 3-2 presents the distributions of the main cause of the lowest profit by end use (i.e., 100% fresh or 100% processing use). Poor yield is the most important cause of the lowest profit for both 100% fresh and 100% processing crops. Poor quality, high input cost, and inability to market a crop due to quarantine seem more important causes of the lowest profit to farmers producing for fresh end use than those growing their crops for processing.

Figure 3-2. Main cause of the lowest profit, by end use (Processing vs. fresh).

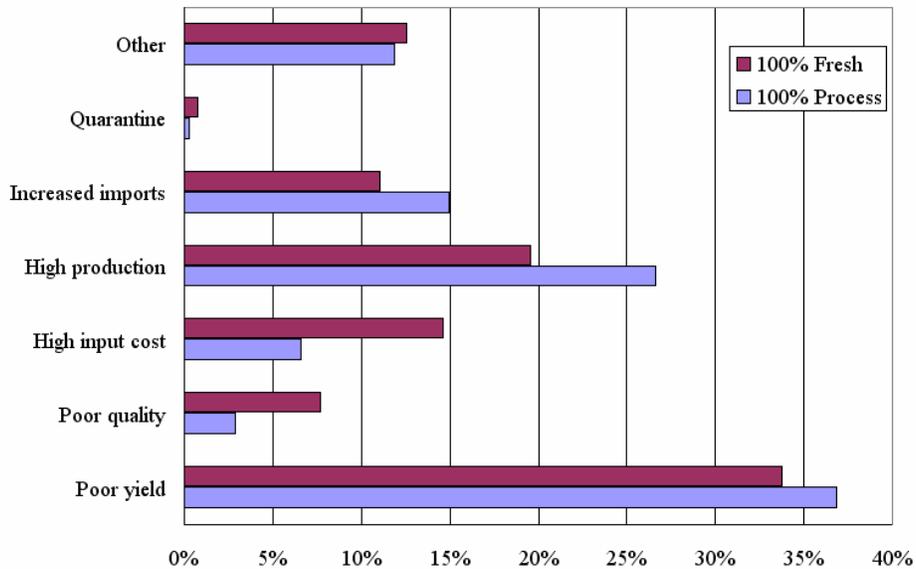
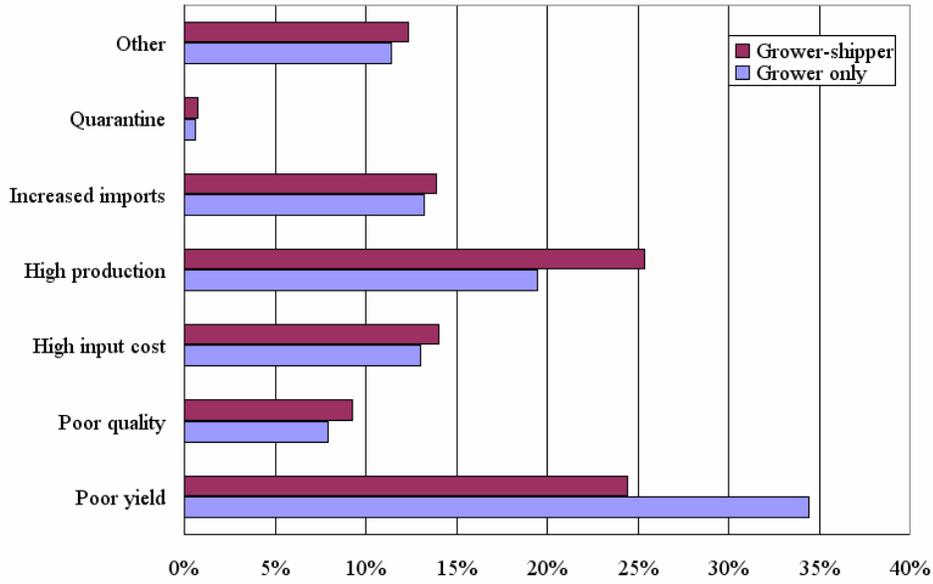


Figure 3-3 presents the distributions of the main cause of the lowest profit by grower/shipper status. Grower-only responded that poor yield was the most important cause of their lowest profit, while grower-shippers considered low market price due to high production as the main reason for the lowest profit.

Figure 3-3. Main cause of the lowest profit, by grower/shipper status.



4. RISK MANAGEMENT

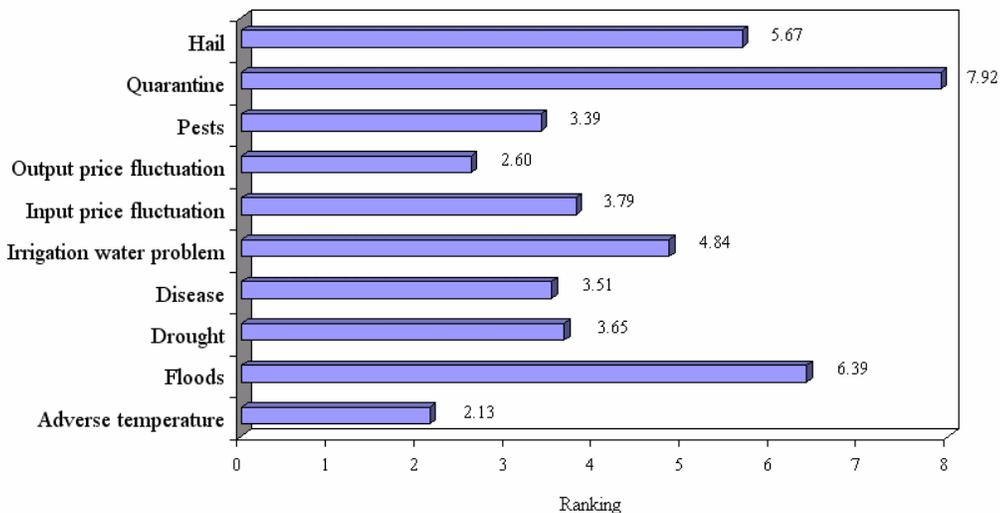
This section includes a discussion of questions related to risk management: the ranking of risk sources, the preference ranking of risk management tools, the availability and utilization of risk management tools, and the history of receiving government disaster payments or loans.

4-1. Source of risk

There are ten risk sources that the respondents were asked to rank from one (the most important) to ten (the least important) in terms of their effect on net farm income. The ten sources are; adverse temperature, floods, drought, disease, irrigation water supply problems, input price fluctuation, output price fluctuation, pests, quarantine, and hail.

Figure 4-1 presents the average ranking for each risk source listed in the questionnaire. Among the listed sources, adverse temperature and output price fluctuation are the two highest ranked sources with average rankings of 2.13 and 2.60, respectively. The next highest categories of risk sources include pests, disease, drought, and input price fluctuation, with average rankings between 3 and 4.

Figure 4-1. Source of risk: Average ranking.



By crop group, ornamentals, berries and melons, non-citrus fruits, and miscellaneous groups consider adverse temperature as the most effective source of risk while citrus and nut producers report that output price fluctuation is the most important risk source. Generally, quarantine, floods, and hail are unimportant sources of risk. For detail, see Appendix VI.

By state, for the California respondents, adverse temperature and output price fluctuation are the two highest ranked sources with average rankings of 2.05 and 2.27, respectively. The same is true for the Florida responses with their average rankings of 2.12 and 2.46, respectively. The most important source of risk in effect on net farm income in New York operations is adverse temperature with an average ranking of 2.28. The second most important factor for New York producers represented in the survey is drought (average ranking of 2.65). Unlike the other three

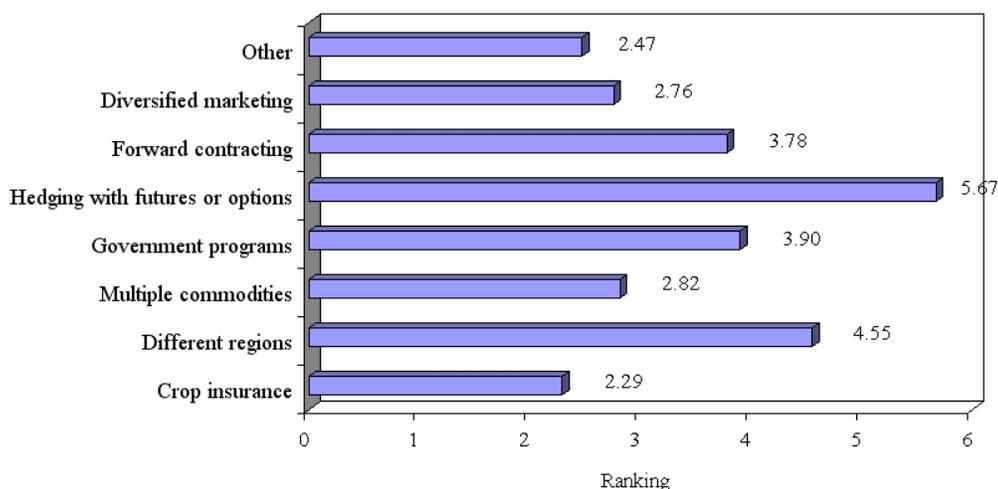
states, the dominant source of risk in Pennsylvania is drought with an average ranking of 2.08. Adverse temperature is ranked as the second (average ranking of 2.44). For detail, see Appendix VI.

4-2. Risk management tools: Preference, availability, and utilization

Growers have numerous tools to manage risk in their operations. Those risk management tools include crop insurance, producing crops in different regions, producing multiple products (crop diversification), using government programs for adverse outcomes, hedging with futures and options, using forward contracts to insure market access and eliminate price risk, and diversified marketing through multiple outlets. The survey respondents were asked to rank these specific risk management tools (and give an “other” if desired) in terms of their preference for use. The ranking scale is; 1 for most preferred to 8 for least preferred.

Figure 4-2 presents the average preference ranking of various risk management tools. Rankings for all crops indicate that crop insurance is most preferred, followed by diversified marketing and multiple commodities.

Figure 4-2. Risk management tools: Average preference ranking.



The preferences by crop group show different patterns. Crop insurance is the most preferred risk management tool for citrus, nuts, and non-citrus fruit growers. However, vegetables, berries and melons, and miscellaneous crop growers prefer diversified marketing, while ornamental crop farmers have preference for multiple commodities. See Appendix VII for detail.

By state, California producers represented in the survey indicate that crop insurance is most preferred with average ranking of 2.06, followed by diversified marketing and multiple commodities (average rankings of 2.90 and 3.00, respectively). The responses of Florida show similar patterns. New York producers report that diversified marketing is the most preferred risk management tool with an average ranking of 2.78, followed by multiple commodities (average ranking of 2.92). Crop insurance is ranked as the third in New York survey responses. For the Pennsylvania respondents, diversification into multiple commodities is seen as the best risk

management tool with an average ranking of 2.00, followed by diversified marketing and crop insurance (average rankings of 2.25 and 2.34, respectively). See Appendix VII for detail.

The preference of risk management tools can be affected by the level of availability of those tools. Table 4-1 presents the availability and utilization rates of each risk management tool. The most available risk management tool was crop insurance (33.5% of total responses) followed by crop diversification (16.9%) and diversified marketing (15.2%).

Table 4-1. Availability and utilization of risk management tools.

	Availability rate	Utilization rate
Crop insurance	33.5%	62.6%
Different regions	7.5%	47.7%
Multiple commodities	16.9%	69.2%
Government programs	11.8%	59.6%
Hedging with futures or options	3.3%	23.9%
Forward contracting	9.2%	63.2%
Diversified marketing	15.2%	65.3%
Other	2.6%	73.9%
Total number of observations*	21,228	

* The number is not equal to total number of survey responses (18,756) because the survey question allowed multiple choices.

The utilization rate is calculated based on a ratio of the number of users to the number of respondents who said the corresponding tool was available. Most utilization rates, except for those of locating production in different regions and hedging with futures or options, exceed 60%, indicating that as long as the risk management tools are available, the majority of growers use those tools to manage risk. With the utilization rate of 69.2%, diversification into multiple commodities was utilized the highest (except for the group specified as “other” risk management tool). Hedging with futures or options was only available to 3.3% of the survey respondents, and 23.9% of them used it.

The availability of risk management tools is different across crop groups. Crop insurance is the most available risk management tool for citrus, nuts, and non-citrus fruit growers (42.2%, 39.5%, and 38.0%, respectively). In addition to crop insurance, diversifying into multiple crops is equally available to vegetable and ornamental growers, but the utilization rate of diversifying into multiple crops is much higher than that of crop insurance. By state, crop insurance is the most available risk management tool for California, Florida and New York. However, in Florida and New York, the utilization rate of crop insurance is not as high as other risk management tools. For Pennsylvania, crop insurance and diversifying into multiple commodities are equally available. For detail, see Appendix VIII.

4-3. Government disaster payments or loans

Of 16,986 responses, 5,249 producers (30.9%) reported that they had received government disaster payments. On the other hand, 6,563 producers (38.6%) said that they were not qualified to receive government payments and another 5,174 (30.5%) were not aware of such programs. California, Florida, and New York responses showed similar patterns in terms of the percentage; while 45.9% of Pennsylvania respondents reported that they were not qualified for government

disaster payment programs and only 26.3% of respondents received government payments. By crop group, of citrus growers, 38.7% reported that they received government disaster payments. Only 15.0% of ornamental crop producers represented in the survey received government payments, and 39.6% and 37.2% of them were neither qualified nor aware of the program. See Appendix IX for detail.

4-4. Importance of risk management

The survey asked producers whether risk management has become more important to their business in the last five years. Responses are split with 8,788 (52.4%) saying that yes, risk management has become more important, and 7,983 (47.6%) saying no, it has not. The responses are not different across crop groups or states.

4-5. Participation in risk management education

The survey asked the number of participation in meetings or seminars related to risk management education over the last five years. About 58% (8,961 responses) indicate that they had not attended any meeting or seminar for risk management education. The average number of risk management meetings or seminars participated in are 1.55.

By crop group, nut producers attended most in average, followed by non-citrus fruit growers. Ornamentals and miscellaneous crop growers participated in least; and the majority (about 80%) of those growers indicates that they never attended any risk management education meeting or seminar. By state, the average number of participation of California and Pennsylvania producers is higher than the average (3.19 and 3.15 times, respectively). The majority of Florida and New York respondents report that they have not attended any meeting or seminar related to risk management education (80.4% and 81.5%, respectively). For detail, see Appendix X.

5. CROP INSURANCE

The survey includes questions particularly regarding crop insurance among other risk management tools. This section summarizes information on specialty crop growers' crop insurance purchases, reasons for purchasing and not purchasing crop insurance, and suggestions for improving crop insurance.

5-1. Crop insurance purchases

About 60% (10,335 respondents) indicate that they did not purchase crop insurance during the last five years, while 7,133 (40.8%) report that they purchased crop insurance. Among the purchasers, 60.2% report that they purchased crop insurance every year during the last 5 years.

Table 5-1. Years of purchasing crop insurance during the last 5 years.

Number of years	Percent
1	8.6%
2	11.1%
3	12.4%
4	7.7%
5	60.2%

Purchase rates vary across crop groups and states (Table 5-2). The percentage of citrus, nuts, and non-citrus fruit producers purchasing crop insurance is above the average. A high of 80.3% of the ornamental producers reported that they did not purchase crop insurance over the last 5 years. Only in California, the number of crop insurance buyers is almost the same with the number of non-buyers. In other three state responses, the number of non-buyers is much higher than that of buyers.

Table 5-2. Purchase of crop insurance in the last 5 years by crop group.

<u>By crop group</u>	Yes	No	Total number of Responses
Vegetables	33.7%	66.3%	1,772
Ornamentals	19.7%	80.3%	3,750
Citrus	52.2%	47.8%	2,276
Berries and melons	21.7%	78.3%	474
Nuts	47.0%	53.0%	2,650
Non-citrus fruits	53.8%	46.2%	5,879
Misc.	14.7%	85.3%	667
<u>By state</u>			
California	50.5%	49.5%	9,596
Florida	37.7%	62.3%	3,100
New York	24.7%	75.3%	2,629
Pennsylvania	21.9%	78.1%	2,145
All	40.8%	59.2%	17,470

5-2. Private crop insurance

Of 11,350 private crop insurance buyers, 23.0% report that they purchased private insurance for protecting their crops from frost or freeze (Table 5-3). Hail and rain insurances are next most frequently purchased by specialty crop producers (20.6% and 18.6%, respectively). Rain insurance is the most popular with vegetable growers. About 36.5% of ornamental growers do not use private crop insurance. Frost or freeze insurance is the most common coverage purchased by California and Florida producers (22.7% and 19.8%, respectively). Most specialty crop growers in New York and Pennsylvania use private crop insurance. Among various coverage, hail and frost (or freeze) insurances are frequently purchased by those growers.

Table 5-3. Private crop insurance purchases

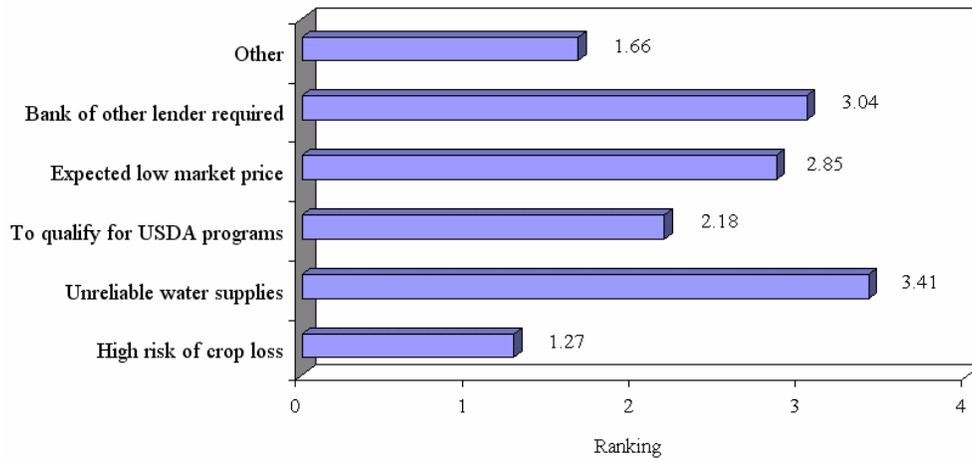
	Fire	Frost or freeze	Rain	Hail	Other	None	Total Number of Responses
<u>By crop group</u>							
Vegetables	8.5%	16.2%	24.4%	20.9%	19.6%	10.4%	1,028
Ornamentals	12.9%	15.0%	10.5%	13.0%	12.0%	36.5%	898
Citrus	4.5%	32.7%	10.3%	18.1%	7.9%	26.5%	1,623
Berries and melons	2.9%	19.4%	18.7%	20.1%	12.9%	25.9%	139
Nuts	6.3%	21.5%	19.1%	18.5%	4.7%	29.8%	2,035
Non-citrus fruits	5.0%	23.5%	21.2%	23.5%	5.9%	20.9%	5,521
Misc.	8.5%	17.9%	16.0%	12.3%	22.6%	22.6%	106
<u>By state</u>							
California	6.2%	22.7%	19.8%	19.7%	4.9%	26.8%	7,937
Florida	5.4%	19.8%	10.7%	15.2%	10.9%	37.9%	1,256
New York	6.2%	27.6%	21.0%	28.8%	14.3%	2.0%	1,241
Pennsylvania	6.2%	24.1%	16.1%	25.1%	21.7%	6.8%	917
All	6.1%	23.0%	18.6%	20.6%	7.9%	23.7%	11,351

5-3. Reasons for purchasing crop insurance

The survey respondents were asked to rank the reasons for purchasing crop insurance (and give an “other” if desired). The reasons are; high risk of crop loss, expected water supply to be cut back, required to qualify for USDA programs, expected lower crop prices, and bank or lender required. The ranking scale is; 1=most important, 2=next most important, etc.

Figure 5-1 shows that the average ranking of “high risk of crop loss” (1.27) is the highest among the reasons for purchasing crop insurance. The second average-ranked reason is “a requirement to qualify for USDA programs” (with an average ranking of 2.18). The most prevalent reason is “high risk of crop loss” with 4,158 responses indicating that it is indeed the most important reason. By comparison, the number of responses exceeds the sum of the number of responses which report other reason as the primary reason for purchasing crop insurance. The average ranking of reasons for purchasing crop insurance by crop group is presented in Appendix XI. No obvious distinctions exist by crop group.

Figure 5-1. Reason for purchasing crop insurance: Average ranking.

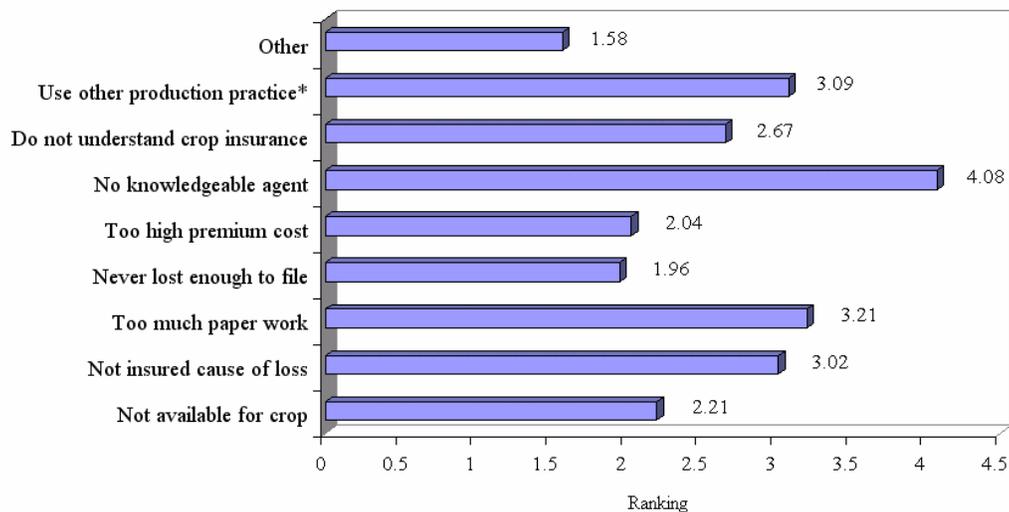


5-4. Reasons for not purchasing crop insurance

The survey respondents were also asked to rank the reasons for not purchasing crop insurance (and give an “other” if desired). The reasons are; not available for crop, source of risk not insurable, too much paperwork, never had lost enough to file claim, premium too costly, no knowledgeable agent, not understanding crop insurance program, and particular to New York and Pennsylvania producers, used production practices to reduce risk (e.g., irrigation, frost protection). The ranking scale is; 1=most important, 2=next most important, etc.

As Figure 5-2 shows, the average ranking of “never lost enough to file a claim” (1.96) is the highest among the reasons for not purchasing crop insurance (excluding “other” reason). The second and third average-ranked reasons are “too high premium cost” (2.04) and “not available for crop” (2.21). The next closest reason is “do not understand crop insurance program” (with an average ranking of 2.67). The least important reason is “lack of a knowledgeable agent” (with an average ranking of 4.08).

Figure 5-2. Reason for not purchasing crop insurance: Average ranking.



On the other hand, the most prevalent reason for not purchasing crop insurance (3,052 responses) is “crop insurance was unavailable”, followed by “never had lost enough to file” and “too high premium cost” (2,746 and 2,659 responses, respectively).

For almost all crop groups, “other” ranks as the primary reason for not insuring (Table 5-4). “Unavailability of crop insurance” is ranked next as the primary reason for not purchasing crop insurance among vegetables, ornamentals, berries and melons, and miscellaneous crop growers. “Never had lost enough to file a claim” and “too high premium” are ranked as the primary reasons for not purchasing crop insurance for citrus, nuts, and non-citrus fruit producers.

Table 5-4. Reason for not purchasing crop insurance: Average ranking by crop group.

	Vege.	Orna.	Citrus	Berries and Melons	Nuts	Non- Citrus Fruits	Misc.
Not available for crop	2.06	2.00	2.44	1.57	2.34	2.59	1.46
Not insured cause of loss	3.32	3.00	2.86	2.90	2.78	3.09	2.86
Too much paper work	3.51	3.23	2.87	3.21	3.12	3.26	3.15
Never lost enough to file	2.31	2.04	1.80	2.27	1.67	1.92	2.25
Too high premium cost	2.67	2.15	1.80	2.40	1.82	1.93	2.58
No knowledgeable agent	4.33	3.89	3.93	4.11	4.22	4.07	4.18
Do not understand crop insurance	2.99	2.47	2.32	2.73	2.75	2.79	2.48
Used other production practice	2.62	3.05	-	2.57	8.00	3.76	3.66
Other	1.70	1.58	1.41	1.66	1.50	1.61	1.75

5-5. Improving crop insurance program

The survey respondents were also asked to rank the suggestions to improve crop insurance. Suggestions listed are; compensate or cover a higher level of production loss (more that 75%), cover loss of gross sales, cover loss of profit, guarantee cash production costs, guarantee cost of grove or vineyard establishment costs, guarantee a higher coverage level, and give an “other” if desired. The ranking scale is; 1=most important, 2=next most important, etc.

“Compensate a higher level of production loss” is ranked high with the lowest average ranking of 2.10 (excluding “other”). “Compensate for a loss of profit”, “compensate for a loss of gross sales”, and “guarantee cash production costs” are ranked next with average rankings of 2.26, 2.33, and 2.68, respectively (Table 5-5). Particularly, for ornamental growers, “guarantee replacement costs of crop inventory” is ranked the highest (Appendix XII).

Table 5-5. Suggestions to improve crop insurance: Average ranking.

	Average ranking
Compensate for a higher production loss	2.10
Compensate for a loss of gross sales	2.33
Compensate for a loss of profit	2.26
Guarantee cash production costs	2.68
Guarantee costs of establishing	3.83
Guarantee costs of crop inventory	3.15
Guarantee higher coverage	3.39
Other	1.45

5-6. Familiarity with crop insurance

The survey asked producers whether they had become more familiar with crop insurance than they were five years ago. Of those that responded, 50.4% (8,543 responses) indicate that no, they were not more familiar with crop insurance (Table 5-6). Particularly, about 66% of ornamental growers and 70% of miscellaneous crop growers report that they have not become familiar with crop insurance.

Table 5-6. Familiarity with crop insurance: Are you more familiar with crop insurance than you were in 5 years ago?

	Yes	No	Total number of Responses
Vegetables	51.1%	48.9%	1,727
Ornamentals	34.2%	65.8%	3,648
Citrus	53.8%	46.2%	2,275
Berries and melons	44.6%	55.4%	451
Nuts	51.0%	49.0%	2,538
Non-citrus fruits	59.3%	40.7%	5,675
Misc.	30.6%	69.4%	635
All	49.6%	50.4%	16,949

6. FINANCIAL CHARACTERISTICS

This section summarizes financial characteristics of specialty crop producers. Four financial variables are considered: off-farm income share, gross sales, assets, and debts.

6-1. Off-farm income share

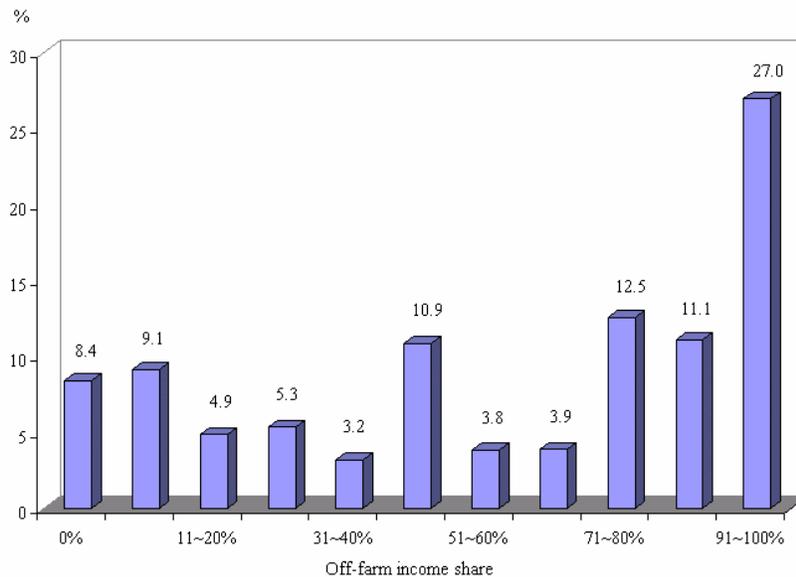
The survey respondents were asked to give the percentage of household total income that came from non-farm activities in 2001. The average off-farm income share is 60.7% (Table 6-1). Vegetable producers indicate that less than half (an average of 48.6%) of total household income came from non-farm activities. Citrus producers report that about 70% of total household income was from off-farm sources.

Table 6-1. Average off-farm income share.

	Average off-farm income share
Vegetables	48.6%
Ornamentals	54.6%
Citrus	69.7%
Berries and melons	59.8%
Nuts	66.5%
Non-citrus fruits	61.5%
Misc.	63.0%
All	60.7%

Of 14,144 responses, 27.0% report that 91~100% of their household income came from non-farm activities, while 8.4% indicate that income from non-farm activities was zero (Figure 6-1). The distribution shows relatively heavy densities at the 1 to 10 percent range, and then in the mid-range at 41 to 50 percent. Again, the density starts to increase at the range of 71 to 80 percent.

Figure 6-1. Distribution of off-farm income share.



The patterns of the distribution are similar across crop groups. The 91 to 100 percent range shows the highest density among all ranges for all crop groups. See Appendix XIII for detail.

6-2. Gross sales, assets, and debts

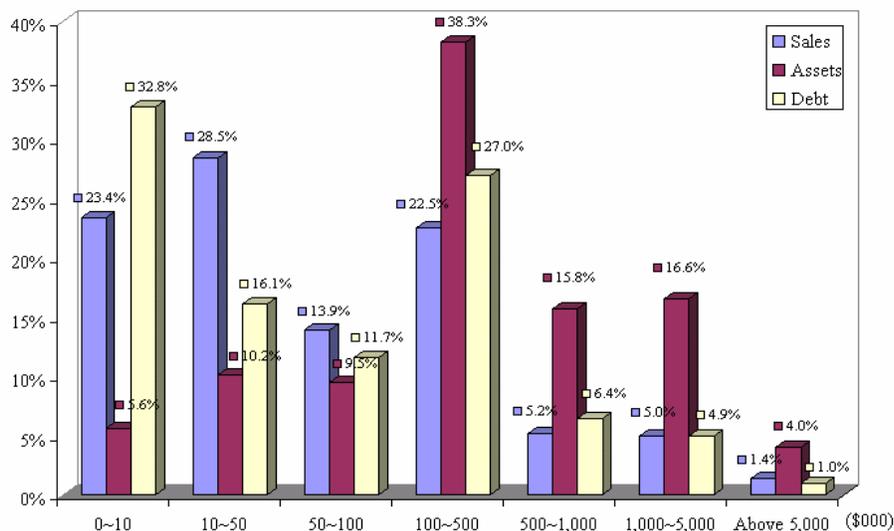
The survey asked the respondents to provide their gross sales of all agricultural commodities in 2001 and current value of their operation's assets and debts, in dollars. The average values are \$573,352 in gross agricultural sales, \$1,744,341 in total assets, and \$468,110 in debts (Table 6-2). The ratio of debt/asset (calculated from the average mean values of assets and debts) is 0.27. The maximum gross sales of all agricultural commodities and asset values are 500 million and 485 million dollars, respectively. The maximum debt level reported is 175 million dollars. The standard deviations are relatively large indicating substantial variations in sales, asset, and debt figures across all farms. The median and mean values diverge considerably; the median is much smaller than the mean value, indicating that some extremely high values (of sales, assets, or debts) are associated with a few very large-scale operations, combined with the large number of small-scale farms.

Table 6-2. Financial profiles: Gross agricultural sales, assets, and debts.

	Mean	Median	Standard Deviation	Maximum
	----- \$1,000 -----			
Sales	573.4	49	7,151.8	500,000
Assets	1,744.3	345	11,947.5	485,000
Debts	468.1	60	4,064.9	175,000
Debt/asset	0.27			

About 29% of the respondents indicate that their gross sales of all agricultural commodities are between \$10,000 and \$50,000 (Figure 6-2). The small number of the respondents (6.4%) reported that their gross sales in 2001 were over one million dollars, while 23.4% said that the gross sales were less than \$10,000 (154 producers reported having no sales in 2001).

Figure 6-2. Distribution of gross sales, assets, and debts.



About 38% of the respondents indicate that the approximate value of their farm assets was between \$100,000 and \$500,000, and 20.6% reported that the value of assets was over one million dollars. At the other extreme, 5.6% had asset values below \$10,000.

About 33% of the respondents indicate that the approximate level of debts in 2001 was between 0 and \$10,000 (1,835 producers reported no debt in 2001). Next, 27.0% report that their debt level was between the ranges of \$100,000-\$500,000.

Among crop groups, citrus growers have the greatest average gross sales with an average of \$949,119 while miscellaneous crop producers have the smallest average gross sales of \$148,106 in 2001. Non-citrus fruit growers have the highest mean values for assets and debts (\$2.5 millions and \$677,700, respectively). The debt/asset ratios of ornamentals, citrus, and miscellaneous crop growers are less than the 0.27 debt/asset ratio of all crops. See Appendix XIV.

By state, California has the highest mean values for gross sales, assets, and debts while New York has the lowest mean values for gross sales and debts and Pennsylvania has the lowest mean value of assets. The debt/asset ratios of Florida and New York are much less than the debt/asset ratio of all crops (0.17 and 0.09, respectively). See Appendix XIV.

7. SUMMARY AND IMPLICATIONS

The International Agricultural Trade and Policy Center (IATPC) in cooperation with the USDA Risk Management Agency surveyed specialty crop producers in California, Florida, New York, and Pennsylvania to examine the unique needs of these producers for the purposes of developing new risk management tools and instruments, particularly crop insurance. A total of 18,756 observations were used in this analysis.

The results from the survey support the fact that the specialty crop industry is extremely diverse. There are 137 different specialty crops represented in the survey. Primary specialty crops include nurseries, grapes, oranges, almonds, walnuts, and Christmas trees, accounting for over 50% of total survey responses. At the other extreme, there are 16 specialty crops that are represented by a single producer. Specialty crop producers are also diverse from a size perspective. The average farm size represented in the survey is 195.2 acres. The average acreage of the vegetable group (449.9 acres) is the largest of all specialty crop producers followed by citrus (320.9 acres). The average farm size of Florida (245.4 acres) is the largest among the four states, followed by California (203.9 acres), New York (154.4 acres), and Pennsylvania (125.8 acres). The importance of farming income as a component of household income is also very wide-ranging. Of 14,144 responses, 3,813 (27.0%) report that 91 to 100% of their household income comes from non-farm activities, while only 8.4% indicate that income from non-farm activities is zero.

The diversity of specialty crop producers means that there should be parallel diverse crop insurance issues. Further, even though the survey responses show that crop insurance is the most preferred, the relative importance of off-farm income suggests that for many producers the primary risk management tool is indeed off-farm employment, which may result in little motivation for the use of other risk management tools.

The survey respondents were asked to rank the sources in terms of their effect on net farm income. Among the listed sources, adverse temperature and output price fluctuation are the highest ranked sources. Unlike the other three states, the dominant source of risk in Pennsylvania is drought. Generally, quarantine, floods, and hail were unimportant sources of risk.

The survey respondents were asked to rank the listed risk management tools in terms of their preference for use. Crop insurance is the most preferred risk management tool for citrus, nuts, and non-citrus fruit growers. However, vegetable and berries and melons growers prefer diversified marketing, while ornamental crop farmers have preference for producing multiple commodities. Crop insurance is the most available risk management tool (with the utilization rate of 62.6%) except for vegetable growers. The availability of crop insurance for citrus, nut, and non-citrus fruit crop growers is higher than the average rate of availability of all risk management tools.

About 60% of the survey respondents indicate that they did not purchase crop insurance during the last five years. Only in California, the number of crop insurance buyers is almost the same with the number of non-buyers. In other three state responses, the number of non-buyers is much

higher than that of buyers. The number one reason for not purchasing crop insurance is the unavailability of crop insurance followed by “never had lost enough to file” and “too high premium cost”. Specialty crop growers suggest that compensating for a higher level of production loss (more than 75%) would improve crop insurance. It is consistent with the survey result that poor yield is identified as the main cause of the lowest profit.

Nearly a half of the specialty crop growers responded that crop insurance and risk management have not become more important in the last five years. There is a need for providing more information and education on the value of crop insurance program as a key risk management tool. In addition, processing and fresh market growers have different attitudes towards risk management and crop insurance programs, and therefore, crop insurance programs should address these differences.

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Appendix I

Risk Management Survey of Specialty Crop Producers – 2001 Crop Year

Form Approved
O.M.B. Number 0563-0059
Approval Expires 02/05
Project Code 465

1. How many acres are in your current farming operation? Whole Acres 001

2. In what county was the largest value of your agricultural products produced? 002

County _____

3. How many years have you been farming? Years 004

4. Please list MAJOR crops grown, acreage, and the approximate **percentage** of the total gross sales of each individual crop produced in 2001. (For nursery and greenhouse crops, please indicate if area is in square footage and list broad categories such as bedding/garden plants, potted flowering plants, foliage plants, etc.)

Crop	Acreage	Percent of Total Sales
005	006	007 %
008	009	010 %
011	012	013 %
014	015	016 %
017	018	019 %
020	021	022 %

5. Did you produce any specialty crops as organic or transitional organic in 2001? OFFICE USE
 YES - **continue** NO - **go to Question 6** 023

a. Please list the MAJOR organic or transitional organic crops grown in 2001.

Crop	Total Crop Acres	Organic Acres	Transitional Acres
024	025	026	027
028	029	030	031
032	033	034	035
036	037	038	039
040	041	042	043
044	045	046	047

*** INSTRUCTIONS: *** Questions 6-11 concern your **primary specialty crop**.
(The primary specialty crop is defined as the one with the highest percentage of sales.)

6. What is your primary specialty crop? 048

a. How much of your **primary specialty crop** is used for:
 Processing 049 %
 Fresh Market (include ornamentals) 050 %

100%

b. What percentage of your primary **processed** specialty crop is marketed through the following outlets?
 (If none, write zero.)

1. Marketing/processing cooperative	051 %
2. Sold to a processor under contract with a predetermined price	052 %
3. Sold to a processor under contract without a predetermined price	053 %
4. Sold to a processor without a contract	054 %
5. On-farm processing (cider, wine, juice, pies, etc.)	055 %
6. Other (specify) _____	056 %

100%

7. If you produce for fresh market (including ornamentals), are you a grower-shipper or a grower only?
 Grower-shipper - **complete 7a, then go to Question 9** Grower only - **go to Question 8** OFFICE USE

a. What percentage of your volume is sold with a predetermined price (negotiated with retail or food service buyers)? 057
058 %

8. If you are a grower only and produce for the **fresh market**, what percentage of your volume is delivered to the following marketing channels? (Include Nursery and Greenhouse)

- a. Directly to consumers (farmers markets, roadside stands, U-pick)
- b. Marketing cooperative
- c. Independent shipper/broker
- d. Directly to commercial buyers (wholesalers, retailers, restaurants)
- e. Other (specify): _____

059	%
060	%
061	%
062	%
063	%
100%	

9. What was your actual yield per acre for your **primary specialty crop** for each of the last five years? (Please answer in whole numbers. If you do not remember exactly, provide approximate numbers.) **Nursery/Greenhouses, please skip to question 10.**

Year	Actual Yield Per Acre	Unit	Unit Weight in Pounds
2001	064	065	066
2000	067	068	069
1999	070	071	072
1998	073	074	075
1997	076	077	078

10. For your primary specialty crop over the last five years, please indicate the largest fluctuation from your five-year average.

Item	Check (✓) only 1 percentage range for each item.				
	Less than 10%	10-24%	25-49%	50-74%	75-100%
a. Annual yield	079	080	081	082	083
b. Annual average price	084	085	086	087	088
c. Profit (after deducting production and marketing expenses from revenue).....	089	090	091	092	093

11. What was the **main** cause of your lowest profit from your primary specialty crop over the last five years?

- a. Poor yield per acre
- b. Poor quality
- c. High input costs .
- d. Low market price due to high domestic production
- e. Low market price due to increased imports
- f. Inability to market a crop due to quarantine

(Please check (✓) only 1 box.)	
	094
	095
	096
	097
	098
	099

*** REMAINDER OF THE QUESTIONS REFER TO YOUR ENTIRE FARM OPERATION ***

12. Please rank the following sources of risk in terms of their effect on your net farm income.

- a. Adverse temperature (heat, frost, etc.)
- b. Floods
- c. Drought
- d. Disease
- e. Irrigation water supply problems
- f. Input price fluctuation
- g. Output price fluctuation (low price/no market)
- h. Pests (insects, wildlife, etc.)
- i. Quarantine
- j. Hail

<i>(Rank according to: 1=most effect, 2=next in degree of effect, etc.)</i>
101
102
103
104
105
106
107
108
109
110

13. Please rank the risk management tools in the order of your preference. Also, check the risk management tools available and those used.

- a. Crop insurance...
- b. Locating production in different regions
- c. Diversification into multiple commodities
- d. Government programs
- e. Hedging with futures or options
- f. Forward contracting
- g. Diversified marketing
- h. Other (specify): _____

Preference Rank <i>(Rank according to: 1=most preferred, 8=least preferred)</i>	Available	Used
	<i>(Please check (✓) all that apply.)</i>	
111	112	113
114	115	116
117	118	119
120	121	122
123	124	125
126	127	128
129	130	131
132	133	134

14. Have you ever received government disaster payments or loans?

- a. Yes
- b. No, I wasn't qualified
- c. No, I am not aware of such programs

<i>(Please check (✓) only 1 box.)</i>
150
151
152

15. Have you purchased **any** crop insurance within the past five years?
 YES - **continue** NO - **go to Question 18**

- a. How many of the last five years? Years

OFFICE USE
153
154

16. Have you purchased any crop insurance for damage from:

- a. Fire
- b. Frost or freeze....
- c. Rain.....
- d. Hail.....
- e. Other causes (specify): _____
- f. None

<i>(Please check (✓) all that apply.)</i>
155
156
157
158
159
160

		(Rank according to: 1=most important, 2=next most important, etc.)
17. Please rank the reasons why you purchased crop insurance.		
a. Risk of crop loss	161	
b. Unreliable water supplies	162	
c. Insurance was required to qualify for other USDA programs.....	163	
d. Expected to receive lower prices for my crops.....	164	
e. Bank or other lender required insurance.....	165	
f. Other (specify):	166	

		(Rank according to: 1=most important, 2=next most important, etc.)
18. In the most recent year that you did not purchase crop insurance, please rank the reasons for not participating in a crop insurance program?		
a. Not available for my crop	167	
b. Major source of risk is not an insured cause of loss	168	
c. Too much paperwork to apply.....	169	
d. Have never lost enough production or revenue to file a claim	170	
e. Premium cost is too high.....	171	
f. Could not find a knowledgeable insurance agent	172	
g. Do not understand the crop insurance program.....	173	
h. Used production practices to reduce risk (e.g. irrigation, frost protection)	174	
i. Other (specify):	175	

		(Rank according to: 1=most important, 2=next most important, etc.)
19. How could the crop insurance program better serve your needs?		
a. Compensate for a higher level of production loss (<i>more than 75%</i>)	176	
b. Compensate for a loss of gross sales	177	
c. Compensate for a loss of profit	178	
d. Guarantee production costs	179	
e. Guarantee costs of establishing an orchard or vineyard.....	180	
f. Guarantee replacement costs of a crop inventory	181	
g. Guarantee a higher coverage level	182	
g. Other (specify):	183	

20. Has risk management become more important to your business in the last five years?	YES	NO
	184	185
21. Are you more familiar with crop insurance than you were five years ago?	186	187

22. How many crop insurance or risk management education meetings or seminars have you attended over the last five years?	Number	188
---	--------	-----

23. What percentage of your household's total income in 2001 was from non-farm activities?	Percent	189
--	---------	-----

24. What was your total GROSS sales of all agricultural commodities in 2001?	Dollars	190
--	---------	-----

25. What is the approximate current value of your operation's:		
a. Assets.....	Dollars	191
b. Debts.....	Dollars	192

Reported by: _____	OFFICE USE
Phone: _____ Date: _____	193

Appendix II

Primary Specialty Crops Represented in the Survey

	Crop code	Number of Responses	Percent (%)	Cumulative Percent (%)	
1	Nurseries	939	1,860	9.9	9.9
2	Grapes, Wine	443	1,730	9.2	19.1
3	Oranges, All	484	1,455	7.8	26.9
4	Almonds	413	1,425	7.6	34.5
5	Walnuts	418	1,154	6.2	40.6
6	Christmas trees	942	948	5.1	45.7
7	Grapes, Raisins	441	941	5.0	50.7
8	Grapes, All	440	706	3.8	54.5
9	Avocados	423	702	3.7	58.2
10	Apples	420	616	3.3	61.5
11	Cut flowers and greens	910	536	2.9	64.4
12	Sweet corn	560	459	2.4	66.8
13	Navel oranges	485	382	2.0	68.9
14	Greenhouses	139	318	1.7	70.5
15	Maple syrup	903	317	1.7	72.2
16	Peaches	450	292	1.6	73.8
17	Olives	453	265	1.4	75.2
18	Vegetables, All	500	203	1.1	76.3
19	Valencia oranges	486	199	1.1	77.4
20	Prunes	448	196	1.0	78.4
21	Strawberries	465	189	1.0	79.4
22	Pistachios	417	178	.9	80.4
23	Pumpkins	553	177	.9	81.3
24	Potatoes	360	174	.9	82.2
25	Blueberries	427	171	.9	83.1
26	Lemons	489	171	.9	84.0
27	Bee and honey total colonies	663	169	.9	84.9
28	Foliage	964	167	.9	85.8
29	Aquaculture	150	165	.9	86.7
30	Plums	447	128	.7	87.4
31	Grapefruits	480	121	.6	88.0
32	Ferns	968	118	.6	88.7
33	Tomatoes	563	117	.6	89.3
34	Grapes, Table	442	114	.6	89.9
35	Cherries, Sweet	430	103	.5	90.5
36	Pears	455	85	.5	90.9
37	Pecans	416	75	.4	91.3
38	Tomatoes, Processing	565	73	.4	91.7
39	Tangerines	494	72	.4	92.1
40	Nectarines	439	65	.3	92.4
41	Snap beans, All	518	60	.3	92.7
42	Apricots	421	57	.3	93.1
43	Mushrooms	545	57	.3	93.4
44	Dry onions	548	57	.3	93.7
45	Raspberries, All	464	53	.3	93.9
46	Watermelons	566	53	.3	94.2
47	Persimmons	454	47	.3	94.5
48	Other specialty crops	998	47	.3	94.7
49	Squash	558	43	.2	95.0

Primary Specialty Crops Represented in the Survey (Cont'd)

	Crop code	Number of Responses	Percent (%)	Cumulative Percent (%)	
50	Cabbages	521	42	.2	95.2
51	Vegetables, Other	599	38	.2	95.4
52	Tropical and other non-citrus	405	37	.2	95.6
53	Lettuce, All	542	37	.2	95.8
54	Total horticulture	943	36	.2	96.0
55	Herbs	957	36	.2	96.2
56	Kiwifruits	434	34	.2	96.3
57	Tomatoes, Fresh	564	33	.2	96.5
58	Sod farms	938	33	.2	96.7
59	Nuts, Other	162	32	.2	96.9
60	Green peas	551	31	.2	97.0
61	Cantaloupes	524	28	.1	97.2
62	Dates	437	27	.1	97.3
63	Mango	479	27	.1	97.5
64	Asparagus	515	27	.1	97.6
65	Green peppers	554	26	.1	97.8
66	Cherries, All	429	25	.1	97.9
67	Cucumber	539	25	.1	98.0
68	Figs	438	23	.1	98.1
69	Broccoli	520	20	.1	98.2
70	Tangelos	497	18	.1	98.3
71	Grape tomatoes	293	16	.1	98.4
72	Pomegranates	459	14	.1	98.5
73	Honey	660	14	.1	98.6
74	Carrots	527	12	.1	98.6
75	Blackberries	426	11	.1	98.7
76	Lettuce, Iceberg	543	11	.1	98.8
77	Sweet potatoes	380	10	.1	98.8
78	Plums and prunes	449	10	.1	98.9
79	Peppers, Other	581	10	.1	98.9
80	Greenhouse (Vegetables)	940	10	.1	99.0
81	Limes	493	9	.0	99.0
82	Tango-mandarin	496	9	.0	99.1
83	Garlic	531	9	.0	99.1
84	Sugar snap beans	574	9	.0	99.2
85	Collards	528	8	.0	99.2
86	Greens, All	532	7	.0	99.2
87	Eggplants	534	7	.0	99.3
88	Lettuce, Leaf and stems	544	7	.0	99.3
89	Southern field peas	559	7	.0	99.4
90	Flowers, Cut	965	7	.0	99.4
91	Brussels sprouts	514	6	.0	99.4
92	Radishes	568	6	.0	99.5
93	Sweet peppers, Other	294	5	.0	99.5
94	Honeydew melons	525	5	.0	99.5
95	Tall fescue seed	933	5	.0	99.5
96	Cauliflower	530	4	.0	99.6
97	Spinach, All	557	4	.0	99.6
98	Jojoba	947	4	.0	99.6
99	Papayas	955	4	.0	99.6

Primary Specialty Crops Represented in the Survey (Cont'd)

	Crop code	Number of Responses	Percent (%)	Cumulative Percent (%)	
100	Vegetables, Cuban	296	3	.0	99.6
101	Mint	350	3	.0	99.7
102	Macadamia	415	3	.0	99.7
103	Bushberries	428	3	.0	99.7
104	Chestnuts	436	3	.0	99.7
105	Celery	533	3	.0	99.7
106	Green lima beans	536	3	.0	99.7
107	Green onions	552	3	.0	99.7
108	Bananas	945	3	.0	99.8
109	Kumquats	953	3	.0	99.8
110	Watercress	958	3	.0	99.8
111	Specialty mushrooms	291	2	.0	99.8
112	Peppermint	349	2	.0	99.8
113	Wild rice	366	2	.0	99.8
114	Cherries, Tart	432	2	.0	99.8
115	Cranberries	467	2	.0	99.9
116	Boysenberries	487	2	.0	99.9
117	Artichokes	513	2	.0	99.9
118	Beets	519	2	.0	99.9
119	Okra	547	2	.0	99.9
120	Guava	951	2	.0	99.9
121	Passion fruits	952	2	.0	99.9
122	Safflower	371	1	.0	99.9
123	Canola	373	1	.0	99.9
124	Hazelnuts	414	1	.0	99.9
125	Currants	446	1	.0	99.9
126	Raspberries, Red	462	1	.0	99.9
127	Snap beans, Fresh	516	1	.0	99.9
128	Escarole/Endive	535	1	.0	100.0
129	Spinach, Processing	556	1	.0	100.0
130	Rapini (Chinese cabbages)	569	1	.0	100.0
131	Mustard greens	570	1	.0	100.0
132	Turnip greens	571	1	.0	100.0
133	Carrots, Fresh	572	1	.0	100.0
134	Carrots, Processing	573	1	.0	100.0
135	Livestock, Other	690	1	.0	100.0
136	Quail	698	1	.0	100.0
137	Taro	961	1	.0	100.0
All		18,756	100%	100%	

Appendix III

Top 5 Specialty Crops in Each Crop Group

Crop group	Specialty crops	Number of Responses	Percent*
Vegetables	Sweet corn	459	24.5%
	Vegetables, All other	203	10.8%
	Pumpkins	177	9.5%
	Potatoes	173	9.2%
	Tomatoes	117	6.3%
Ornamentals	Nurseries	1,860	46.2%
	Christmas trees	948	23.5%
	Cut flowers and greens	536	13.3%
	Greenhouse	318	7.9%
	Foliage	167	4.1%
Citrus	All oranges	1,455	59.7%
	Navel oranges	382	15.7%
	Valencia oranges	199	8.2%
	Lemons	171	7.0%
	Grapefruits	121	5.0%
Berries and melons	Strawberries	189	36.6%
	Blueberries	171	33.1%
	Raspberries	53	10.3%
	Watermelons	53	10.3%
	Cantaloupes	28	5.4%
Nuts	Almonds	1,425	49.6%
	Walnuts	1,154	40.2%
	Pistachios	178	6.2%
	Pecans	75	2.6%
	Nuts, All other	32	1.1%
Non-citrus fruits	Grapes for wine	1,730	27.6%
	Raisin grapes	941	15.0%
	Grapes, All other	706	11.3%
	Avocados	702	11.2%
	Apples	616	9.8%
Misc.	Maple syrup	317	41.5%
	Bee & honey colonies	169	22.1%
	Aquaculture	165	21.6%
	Other specialty crops	47	6.2%
	Herbs	36	4.7%

* The percent was calculated based on total number of responses in each crop group.

Appendix IV

Marketing Channels for Processing: Number of Responses and Average Percentage

	Marketing Cooperative			Sold with Predetermined price			Sold without Predetermined price			Spot market or Sold without contract			Participation plan or On-farm processing			Other		
	N*	100% **	Average Percent ***	N	100%	Average Percent	N	100%	Average Percent	N	100%	Average Percent	N	100%	Average Percent	N	100%	Average Percent
Vegetables	61	52	93.3%	196	165	93.8%	47	38	88.0%	46	29	75.8%	17	11	83.4%	27	18	81.0%
Ornamentals	3	2	83.3%	12	11	93.3%	4	1	33.8%	9	6	78.3%	16	11	92.5%	12	10	92.5%
Citrus	405	374	96.2%	525	480	95.9%	285	249	93.1%	313	283	94.2%	56	40	86.2%	57	44	84.4%
Berries and melons	6	5	98.3%	16	14	96.3%	14	13	93.6%	10	8	90.5%	11	8	78.9%	5	4	97.4%
Nuts	1,234	1,185	98.0%	286	250	93.3%	818	754	96.3%	69	57	89.8%	18	16	94.7%	80	71	91.8%
Non-citrus fruits	1,050	873	91.2%	2,005	1,674	92.7%	958	798	90.3%	316	158	67.0%	202	139	78.6%	406	314	86.8%
Misc.	41	13	70.3%	22	12	77.5%	15	8	81.3%	86	45	77.0%	334	261	87.5%	27	10	59.1%
All	2,800	2,504	94.7%	3,062	2,606	93.3%	2,141	1,861	92.8%	849	586	80.8%	654	486	84.7%	614	471	85.9%

* N = Number of responses

** 100% = Number of responses for 100% use of the corresponding marketing channel

*** Average percent = Average percentage of using the corresponding marketing channel

Appendix V

Marketing Channel Use by Crop Group*

	Marketing Cooperative	Sell at Predetermined Price	Sell without Predetermined price	Spot market/ Sell without Contract	Participation plan/ On-farm processing	Other	Total Number of Responses
Vegetables	15.5%	49.7%	11.9%	11.7%	4.3%	6.9%	394
Ornamentals	5.4%	21.4%	7.1%	16.1%	28.6%	21.4%	56
Citrus	24.7%	32.0%	17.4%	19.1%	3.4%	3.5%	1,641
Berries and melons	9.7%	25.8%	22.6%	16.1%	17.7%	8.1%	62
Nuts	49.3%	11.4%	32.7%	2.8%	0.7%	3.2%	2,505
Non-citrus fruits	21.3%	40.6%	19.4%	6.4%	4.1%	8.2%	4,937
Misc.	7.8%	4.2%	2.9%	16.4%	63.6%	5.1%	525

Appendix VI

Sources of Risk: Average Ranking by Crop Group

	Adverse Temperature	Floods	Drought	Disease	Irrigation Water Problem	Input price Fluctuation	Output price Fluctuation	Pests	Quarantine	Hail
Vegetables	2.49	4.84	2.33	3.62	4.98	4.32	3.23	3.29	8.58	6.27
Ornamentals	2.27	5.76	2.82	3.02	4.44	3.79	3.26	3.04	7.33	6.54
Citrus	2.11	7.11	3.48	3.65	4.48	3.60	1.96	4.02	7.16	6.69
Berries and melons	2.16	5.16	2.80	3.38	4.53	4.31	3.33	3.00	8.62	6.01
Nuts	2.11	6.75	5.16	3.68	4.83	3.41	2.10	3.43	8.57	6.16
Non-citrus fruits	2.01	7.23	4.68	3.73	5.07	3.83	2.56	3.53	8.03	4.67
Misc.	1.92	4.95	2.81	3.17	5.88	4.29	3.34	3.02	7.54	7.38

* The ranking scale is; 1 for the most important to 10 for the least important.

Sources of Risk: Average Ranking by State

	Adverse Temperature	Floods	Drought	Disease	Irrigation Water Problem	Input price Fluctuation	Output Price Fluctuation	Pests	Quarantine	Hail
California	2.05	7.18	5.35	3.79	4.67	3.51	2.27	3.49	7.85	5.61
Florida	2.12	4.56	2.61	2.89	4.27	3.54	2.46	3.81	7.21	6.28
New York	2.28	5.68	2.65	3.52	5.68	4.71	3.66	3.17	8.33	5.41
Pennsylvania	2.44	6.53	2.08	3.13	5.31	4.76	3.76	2.91	8.41	5.78

* The ranking scale is; 1 for the most important to 10 for the least important.

Appendix VII

Risk Management Tools: Average Preference Ranking by Crop Group

	Crop Insurance	Different Regions	Multiple Commodities	Government Programs	Hedging with Futures or Options	Forward Contracting	Diversified Marketing	Other
Vegetables	3.02	3.91	2.17	3.84	5.65	4.21	2.79	2.86
Ornamentals	2.92	4.12	2.20	4.35	5.73	3.98	2.35	2.02
Citrus	2.08	4.65	3.28	3.91	5.51	3.68	2.95	2.51
Berries and melons	2.63	4.32	2.60	4.01	5.63	4.74	2.43	2.20
Nuts	2.02	5.07	3.04	3.80	5.31	3.64	2.92	2.45
Non-citrus fruits	2.03	4.89	3.27	3.79	5.82	3.53	2.89	2.76
Misc.	2.97	3.95	2.96	3.78	6.13	4.99	2.73	2.25

* The ranking scale was; 1 for most preferred to 8 for least preferred.

Risk Management Tools: Average Preference Ranking by State

	Crop Insurance	Different Regions	Multiple Commodities	Government Programs	Hedging with Futures or Options	Forward Contracting	Diversified Marketing	Other
California	2.06	4.74	3.00	3.91	5.70	3.55	2.90	2.57
Florida	2.36	4.50	2.82	3.68	5.37	3.41	2.63	2.04
New York	3.34	4.72	2.92	4.23	6.07	4.94	2.78	4.58
Pennsylvania	2.34	3.51	2.00	3.62	5.15	4.11	2.25	1.78

* The ranking scale was; 1 for most preferred to 8 for least preferred.

Appendix VIII

Risk Management Tools: Availability by Crop Group

	Crop Insurance	Different Regions	Multiple Commodities	Government Programs	Hedging with Futures or Options	Forward Contracting	Diversified Marketing	Other
Vegetables	21.5%	10.3%	21.7%	14.3%	5.3%	8.8%	15.6%	2.6%
Ornamentals	24.3%	9.2%	23.9%	7.5%	2.9%	8.2%	20.5%	3.5%
Citrus	42.2%	6.3%	11.8%	12.2%	5.1%	8.3%	11.9%	2.3%
Berries and melons	24.8%	9.9%	21.2%	12.3%	4.2%	6.1%	17.6%	4.0%
Nuts	39.5%	5.3%	14.2%	12.3%	3.1%	10.9%	12.7%	2.0%
Non-citrus fruits	38.0%	6.4%	14.6%	12.2%	2.2%	10.0%	14.4%	2.2%
Misc.	18.7%	13.3%	19.1%	15.9%	3.1%	5.2%	20.5%	4.1%

Risk Management Tools: Utilization by Crop Group

	Crop Insurance	Different Regions	Multiple Commodities	Government Programs	Hedging with Futures or Options	Forward Contracting	Diversified Marketing	Other
Vegetables	61.7%	64.1%	81.7%	67.0%	27.7%	58.5%	74.3%	78.4%
Ornamentals	45.7%	43.7%	72.1%	35.0%	15.5%	55.9%	70.0%	74.8%
Citrus	65.6%	43.2%	61.1%	61.6%	18.2%	58.7%	55.9%	67.7%
Berries and melons	42.4%	40.0%	67.3%	45.2%	28.6%	45.2%	66.3%	60.0%
Nuts	63.1%	26.8%	59.3%	55.9%	31.6%	57.2%	54.8%	75.4%
Non-citrus fruits	67.5%	47.7%	65.8%	63.6%	26.2%	71.9%	64.2%	73.4%
Misc.	49.0%	63.5%	78.3%	75.0%	11.8%	65.5%	75.4%	82.6%

Risk Management Tools: Availability by State

	Crop Insurance	Different Regions	Multiple Commodities	Government Programs	Hedging with Futures or Options	Forward Contracting	Diversified Marketing	Other
California	36.7%	6.5%	15.8%	11.4%	2.5%	10.4%	14.4%	2.3%
Florida	41.9%	5.7%	13.9%	10.3%	4.7%	9.5%	11.5%	2.4%
New York	25.4%	10.6%	19.4%	13.6%	3.6%	6.3%	18.3%	2.9%
Pennsylvania	20.9%	10.1%	21.6%	13.3%	5.0%	6.8%	18.8%	3.5%

Risk Management Tools: Utilization by State

	Crop Insurance	Different Regions	Multiple Commodities	Government Programs	Hedging with Futures or Options	Forward Contracting	Diversified Marketing	Other
California	67.5%	40.5%	67.4%	59.8%	28.9%	67.8%	63.2%	74.1%
Florida	56.8%	48.1%	66.6%	56.0%	19.7%	66.2%	58.3%	74.2%
New York	57.6%	60.7%	73.0%	74.0%	27.4%	60.8%	73.3%	65.8%
Pennsylvania	44.8%	53.8%	72.7%	49.8%	15.7%	35.4%	68.7%	78.4%

Appendix IX

Receipts of Government Disaster Payment or Loans

	Received	Not received		Total number of Responses
		Not qualified	Not aware	
<u>By crop group</u>				
Vegetables	35.8%	32.5%	23.4%	1,717
Ornamentals	15.0%	39.6%	37.2%	3,700
Citrus	38.7%	31.5%	23.0%	2,272
Berries and melons	26.6%	34.1%	27.9%	457
Nuts	26.5%	35.9%	26.4%	2,552
Non-citrus fruits	31.1%	34.6%	24.2%	5,633
Misc.	24.2%	27.5%	33.8%	653
<u>By state</u>				
California	31.2%	39.4%	29.4%	9,176
Florida	32.4%	37.5%	30.1%	3,233
New York	31.5%	31.6%	36.9%	2,524
Pennsylvania	26.3%	45.9%	27.8%	2,053
All	30.9%	38.6%	30.5%	16,984

Appendix X

Participation in Risk Management Education

	Total number of Responses	Number of Never attending (%)	Average number of Attendance
<u>By crop group</u>			
Vegetables	1,074	57.4%	1.34
Ornamentals	2,294	79.4%	0.66
Citrus	1,567	65.0%	1.41
Berries and melons	314	62.4%	1.26
Nuts	746	27.1%	3.00
Non-citrus fruits	2,449	35.7%	2.38
Misc.	517	83.8%	0.48
<u>By state</u>			
California	2,735	19.1%	3.19
Florida	2,925	80.4%	0.75
New York	2,798	81.5%	0.49
Pennsylvania	503	1.4%	3.15
All	8,961	57.6%	1.55

Appendix XI

Reasons for Purchasing Crop Insurance: Average Ranking by Crop Group

	Risk of Crop loss	Unreliable Water Supplies	To qualify USDA Programs	Expected Low price	Bank or Other lender Required	Other
Vegetables	1.41	2.97	1.76	3.21	3.67	2.86
Ornamentals	1.22	2.88	2.24	3.42	3.03	1.34
Citrus	1.25	3.59	2.14	2.76	3.64	1.49
Berries and Melons	1.37	3.14	1.90	3.56	4.36	2.07
Nuts	1.28	3.47	2.27	2.63	2.65	1.54
Non-citrus Fruits	1.26	3.56	2.31	2.82	2.86	1.78
Misc.	1.24	3.06	1.79	3.39	3.44	1.44

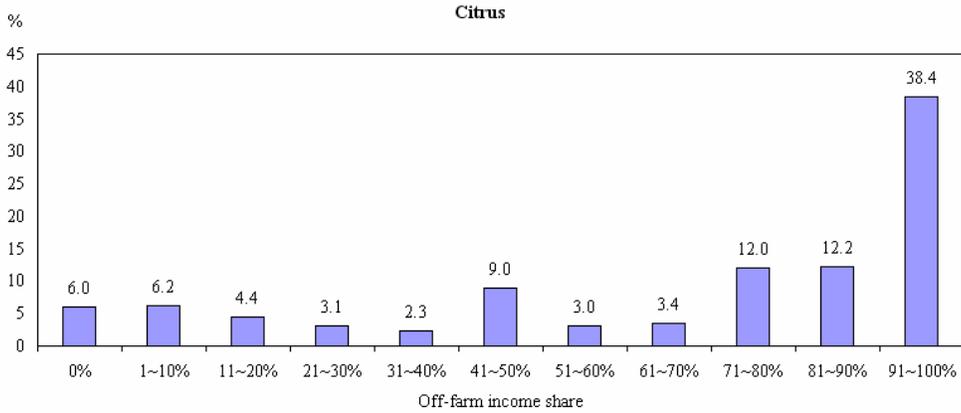
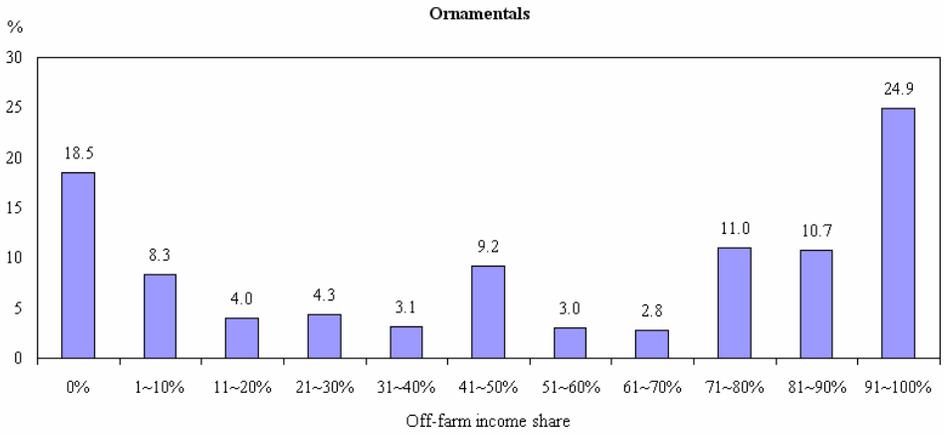
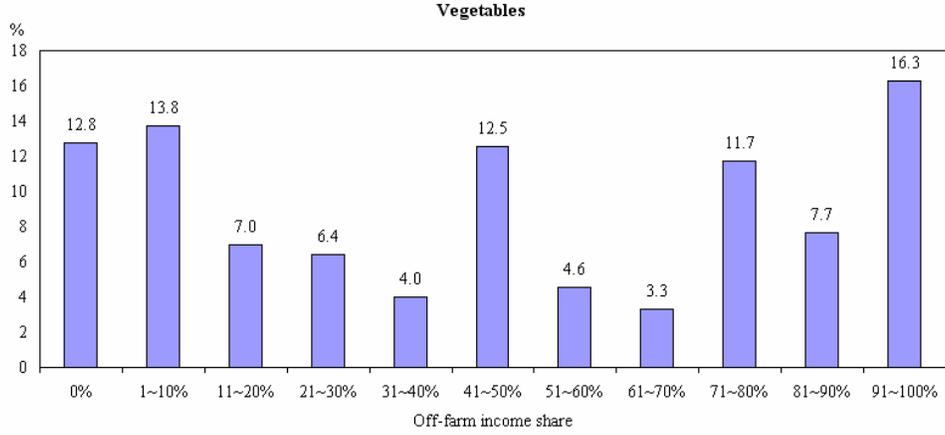
Appendix XII

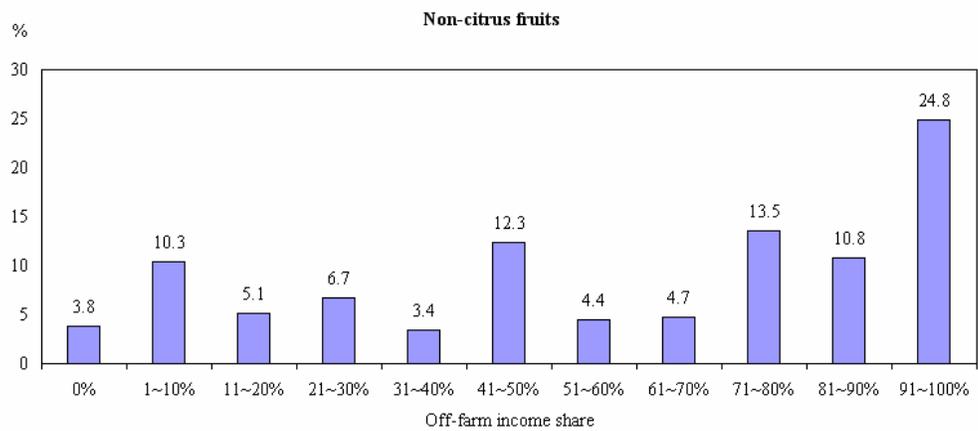
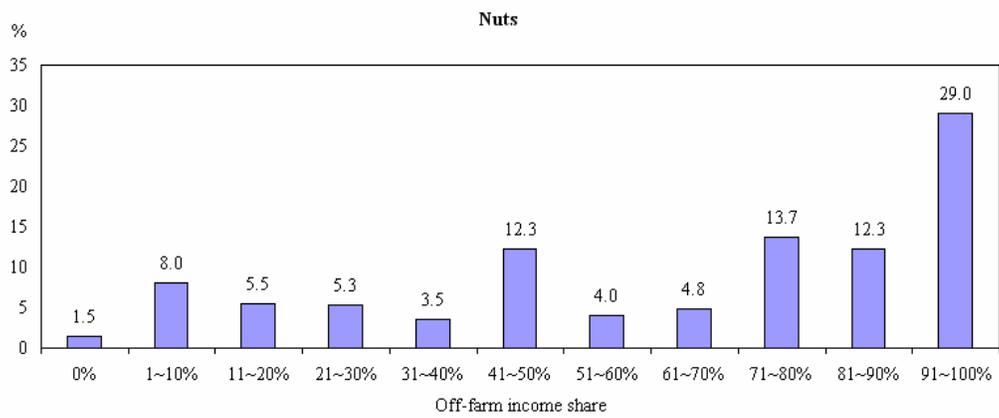
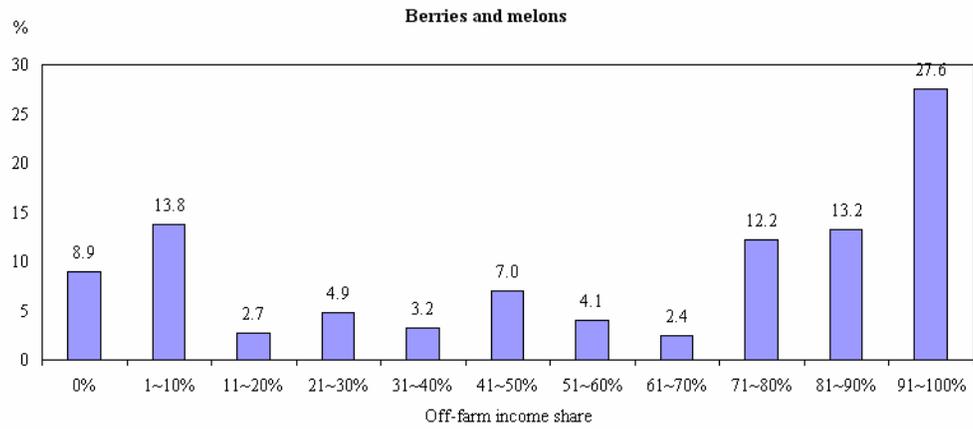
Suggestions to Improve Crop Insurance: Average Ranking by Crop Group

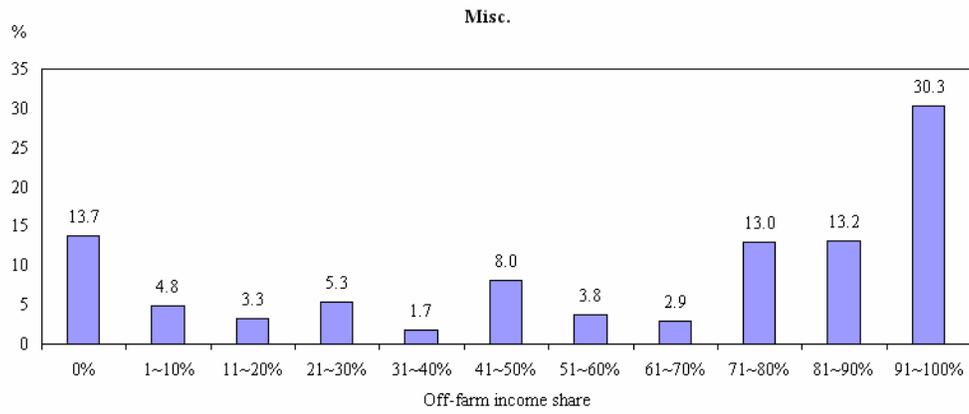
	Vegetables	Ornamentals	Citrus	Berries and Melons	Nuts	Non-citrus Fruits	Misc.
Compensate for a higher production loss	2.06	2.39	2.16	1.96	2.03	2.05	2.05
Compensate for a loss of gross sales	2.35	2.25	2.31	2.15	2.41	2.36	2.30
Compensate for a loss of profit	2.29	2.44	2.22	2.15	2.17	2.24	2.31
Guarantee cash production costs	2.63	3.15	2.58	2.61	2.42	2.68	3.04
Guarantee costs of establishing	5.07	4.17	3.66	4.05	3.53	3.65	4.86
Guarantee costs of crop inventory	3.56	2.20	3.01	3.05	3.50	3.59	2.69
Guarantee higher coverage**	3.19	3.52	3.44	3.27	4.00	3.36	3.64
Other	1.53	1.28	1.39	1.46	1.38	1.64	1.40

Appendix XIII

Distribution of Off-Farm Income Share







Appendix XIV

Financial Profiles by Crop Group

		Mean	Median	Standard Deviation	Maximum
		----- \$1,000 -----			
Vegetables	Sales	717.0	70	2,985.4	48,000
	Assets	1,592.1	300	11,219.0	300,000
	Debts	500.1	50	5,344.2	150,000
	Debt/asset	0.31			
Ornamentals	Sales	487.7	50	2,189.5	54,000
	Assets	1,237.0	200	9,287.7	300,000
	Debts	243.8	20	1,270.0	33,000
	Debt/asset	0.20			
Citrus	Sales	949.1	27	13,393.0	500,000
	Assets	1,484.5	350	10,098.5	265,000
	Debts	367.8	1	4,214.3	120,000
	Debt/asset	0.25			
Berries and melons	Sales	657.6	29	2,895.5	40,000
	Assets	1,315.4	180	8,804.7	100,000
	Debts	634.5	30	5,135.8	70,000
	Debt/asset	0.48			
Nuts	Sales	409.4	40	5,207.3	230,000
	Assets	1,348.2	450	12,566.5	485,000
	Debts	515.0	135	5,159.2	155,000
	Debt/asset	0.38			
Non-citrus fruits	Sales	564.5	60	8,186.3	400,000
	Assets	2,534.0	500	14,376.4	400,000
	Debts	677.7	130	4,425.5	175,000
	Debt/asset	0.27			
Misc.	Sales	148.1	14	634.4	10,000
	Assets	514.1	70	4,660.4	100,000
	Debts	58.7	0	168.8	1,500
	Debt/asset	0.11			

Financial Profiles by State

		Mean	Median	Standard Deviation	Maximum
		----- \$1,000 -----			
California	Sales	755.3	67	9,008.8	500,000
	Assets	2,367.1	500	14,469.9	485,000
	Debts	835.9	160	5,834.3	175,000
	Debt/asset	0.35			
Florida	Sales	538.7	23	5,241.0	100,000
	Assets	815.3	200	3,644.8	100,000
	Debts	137.2	0	661.4	12,000
	Debt/asset	0.17			
New York	Sales	192.6	25	761.6	20,000
	Assets	1,115.4	150	10,532.5	300,000
	Debts	102.2	0	387.6	8,000
	Debt/asset	0.09			
Pennsylvania	Sales	219.5	26	1,639.6	48,000
	Assets	731.7	200	4,228.2	100,000
	Debts	210.6	68	1,009.2	24,500
	Debt/asset	0.29			