



2009 Vermont Cold Climate Grape Survey Results

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The survey was conducted on-line during the spring of 2009. A request for participants was sent out via email to all people on the University of Vermont Cold Climate Grape listserv on April 20, 2009. Responses were received over the next three months. The purpose of the survey is to get a “snapshot” of the cold climate winegrape industry in Vermont and the region. It is important to document the size of the industry now so that changes can be tracked over time. The survey is also important to document the pest management practices currently being used in vineyards and to determine areas on which to focus IPM educational efforts. The survey is being funded, in part, by an EPA Pesticide Environmental Stewardship grant which has as a goal to increase adoption of ecologically-based IPM and reduce pesticide risks in cold climate winegrape production. The following is a summary of the responses received.

A sincere “thank you” goes to all the people who took the time to participate in the survey !

Description of Your Vineyard

1. Location --> Town: State:
 35 answered

CT	1	3%
MA	1	3%
NH	1	3%
NY	5	14%
SD	1	3%
VT	26	74%

2. Year when vineyard was first planted:

35 answered

All responses:

1976	1	3%
1995	1	3%
1997	1	3%
1998	1	3%
2000	3	9%
2001	1	3%
2002	2	6%
2003	2	6%
2004	5	14%
2005	1	3%
2006	2	6%
2007	3	9%
2008	9	26%
2009	3	9%
	35	

Vermont responses only:

1995	1	4%
1997	1	4%
1998	1	4%
2000	2	8%
2001	1	4%
2002	2	8%
2003	1	4%
2004	3	12%
2005	1	4%
2006	1	4%
2007	3	12%
2008	7	27%
2009	2	8%
	26	

3. Total acres planted to winegrapes currently:

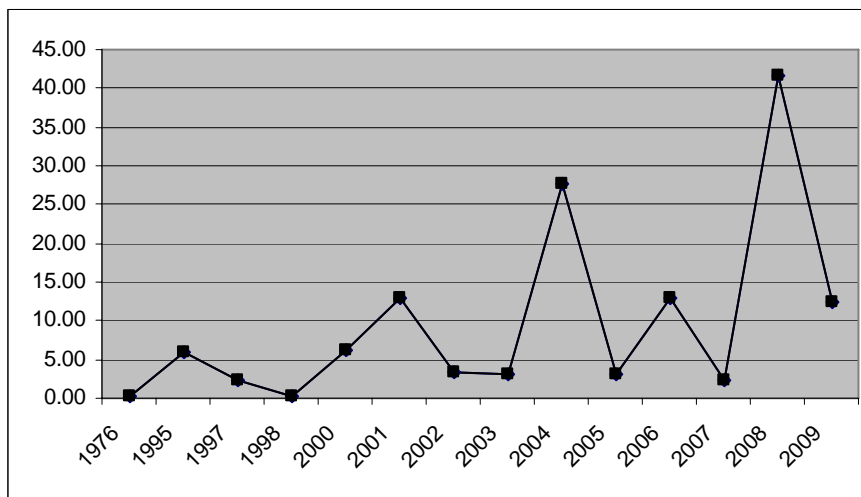
35 answered

Total for all responses: 134.48 acres

Total for Vermont responses only: 109.18 acres

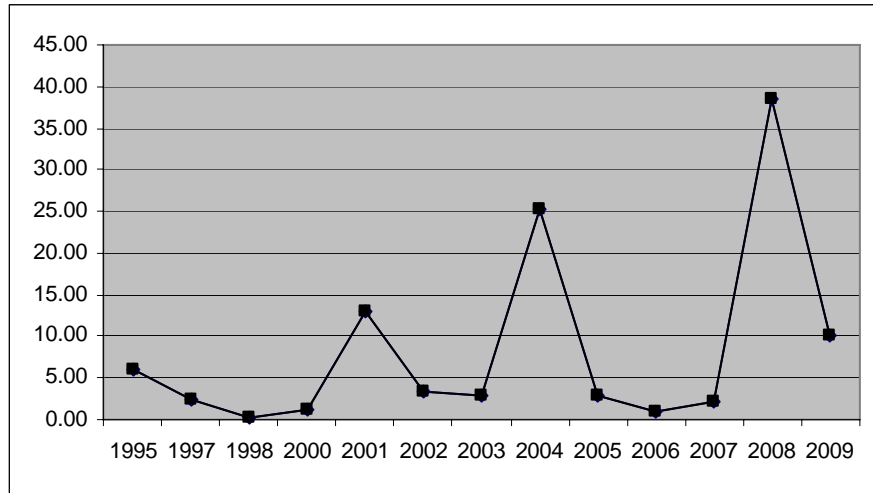
Total Acres Established per Year for all responses

1976	0.20
1995	6.00
1997	2.30
1998	0.25
2000	6.25
2001	13.00
2002	3.25
2003	3.10
2004	27.80
2005	3.00
2006	13.00
2007	2.25
2008	41.58
2009	12.50



Total Acres Established per Year for Vermont responses only

1995	6.00
1997	2.30
1998	0.25
2000	1.25
2001	13.00
2002	3.25
2003	3.00
2004	25.30
2005	3.00
2006	1.00
2007	2.25
2008	38.58
2009	10.00



4. Total additional acres you estimate you will plant to winegrapes over the next 5 years:

35 answered

Total for all responses: 181.75 – 250.75 acres

Total for Vermont responses only: 111.75 – 174.75 acres

5. Please check all winegrape varieties currently planted and the approximate number of vines of each: (given list)

	#answered planted this variety	#that also gave #vines planted	#vines given	% of TOTAL given #vines
Arctic Reisling	1	1	300	0.61%
Baco Noir	2	2	1220	2.50%
Bianca	1	0	0	0.00%
Cayuga White	6	6	1009	2.07%
Corot Noir	1	1	38	0.08%
Frontenac	23	22	4561	9.34%
Frontenac Gris	17	15	4048	8.29%
LaCrescent	16	15	4980	10.19%
LaCrosse	7	6	146	0.30%
Leon Millot	5	4	1365	2.79%
Louise Swenson	7	6	1691	3.46%
Marechal Foch	4	3	306	0.63%
Marquette	26	24	10010	20.49%
Prairie Star	14	12	1904	3.90%
Reisling	3	2	1100	2.25%
Sabrevois	8	7	542	1.11%
St Croix	23	21	4888	10.01%
St Pepin	5	4	502	1.03%
Swenson Red	5	4	128	0.26%
Swenson White	11	9	422	0.86%
Syval	2	2	2023	4.14%
Traminette	7	7	745	1.53%
Vidal Blanc	4	3	4800	9.83%
Vignoles	5	5	1522	3.12%
Zweigelt	1	1	600	1.23%
TOTAL	204	182	48850	100.00%

Other winegrape varieties currently planted and the approximate number of vines of each: (fill-in answers) 43 answered

	#answered planted this variety	#that also gave #vines planted	#vines given	% of TOTAL given #vines
8-2-43 (Minnesota white variety)	1	1	250	4.86%
Aurore	1	1	5	0.10%
Bluebell	1	1	45	0.88%
Brianna	3	3	122	2.37%
Cab Franc	1	1	32	0.62%
Cab Sauv	1	1	4	0.08%
Canadice	1	1	13	0.25%
Catawba	1	1	25	0.49%
Chardonel	1	1	25	0.49%
Chardonnay	1	1	16	0.31%
Concord	1	1	1500	29.19%
Delaware	1	1	3	0.06%
Edelweis	2	2	151	2.94%
ES 6-16-30 ; E-S-8-43	2	2	310	6.03%
ES 8-2-43	2	2	154	3.00%
Espirit	1	1	6	0.12%
Fredonia	1	1	20	0.39%
Frontenac Blanc	1	1	500	9.73%
Geneva Red 7	1	1	120	2.34%
GM 318	1	1	25	0.49%
Hibernal GM 322-58	1	1	8	0.16%
Kay Gray	1	1	1	0.02%
Kiwi (north hardy)	1	1	2	0.04%
Landot 451 ; Landot	2	2	50	0.97%
Landot Noir	2	2	75	1.46%
Mars	1	1	62	1.21%
Melody	1	1	4	0.08%
Muscat (himrod)	1	1	1	0.02%
Noiret	1	1	25	0.49%
NY76.0844.24	1	1	16	0.31%
Oberlin Noir	1	1	72	1.40%
Pinot Gris	1	0	0	0.00%
Pinot Noir	1	1	350	6.81%
Ravat	1	1	5	0.10%
Reliance	2	1	19	0.37%
Rougeon	1	1	1	0.02%
Somerset Seedless	1	1	14	0.27%
St. Vincent	1	1	9	0.18%
Steuben	1	1	25	0.49%
Triomphe d'Alsace	1	1	72	1.40%
Valiant	1	1	1000	19.46%
Valvin Muscat	1	1	2	0.04%
Villard Noir	1	1	0	0.00%
TOTAL	51	49	5139	100.00%

6. Please enter additional winegrape varieties you estimate planting over the next 5 years and the approximate number of vines of each: (fill-in answers)

29 answered

	#answered planting this variety	#that also gave #vines planting	#vines given	% of TOTAL given #vines
Brianna	1	1	300	1.06%
Canadice	1	0	0	0.00%
Edelweiss	2	2	212	0.75%
ES 6-16-30 ; es-8-2-43	2	2	340	1.21%
Frontenac	4	3	1800	6.39%
Frontenac Blanc	2	2	2100	7.45%
Frontenac Gris	4	3	1550	5.50%
Hibernal GM 318	1	0	0	0.00%
Kay Gray	1	1	50	0.18%
LaCrescent	12	9	5250	18.63%
LaCrosse	1	0	0	0.00%
latest and greatest	1	1	400	1.42%
Leon Millot	1	0	0	0.00%
Louise Swenson	2	2	1025	3.64%
Malbec	1	1	10	0.04%
Marquette	13	12	6915	24.54%
Nebbiolo	1	1	30	0.11%
petit pearl	1	0	0	0.00%
Petit Verdot	1	1	10	0.04%
Petite Amie	1	1	500	1.77%
Prairie Star	4	4	2900	10.29%
Sabrevois	1	1	40	0.14%
Seneryni	1	1	300	1.06%
Seyval	2	1	1000	3.55%
St. Pepin	4	2	1850	6.56%
St.Croix	2	2	1200	4.26%
Swenson Red (Icewine)	1	0	0	0.00%
Swenson White	1	1	100	0.35%
Vidal Blanc	1	1	300	1.06%
TOTAL	70	55	28182	100.00%

7. Before growing grapes, did you grow any other agricultural crop commercially?

35 answered

	# answered	% of answers
Yes	13	37%
No	22	63%

-- If yes, please state the crop(s) grown: (fill-in answers)

13 answered

blueberries, black & red raspberries
Christmas trees
Christmas trees
corn, soybeans, wheat, oats, spelt
corn, string beans, tomatoes & cucumbers
cows and hay
hay
hay corn
strawberries
vegetables
vegetables and apples
vegetables, blueberries, pears, apples
wheat, alfalfa, olive oil

-- If no, please state your previous occupation: (fill-in answers)

11 answered

Advertising and Marketing
Educator
Electrical Engineer
Equities trader
Firefighter
Horse Farm
Land surveyor, developer, builder, civil engineer
Police Detective
Sail maker
Veterinarian
Vineyard/winery worker

8. Are you producing grape wine for sale?

35 answered

	# answered	% of answers
Yes	14	40%
No	21	60%

9. Do you have a winery where you produce your wine?

35 answered

	# answered	% of answers
Yes	15	43%
No	20	57%

-- If yes, is it open to the public for wine sales?

14 answered

	# answered	% of answers
Yes	6	43%
No	8	57%

-- If no, do you plan to have a winery over the next 5 years?

14 answered

	# answered	% of answers
Yes	12	86%
No	2	14%

10. Total volume (gallons) of grape wine produced in 2008: (fill-in answers)

28 answered

32,226 gallons total

Total gallons	# answered
5000+	2
2500-4999	4
1000-2499	2
500-999	0
250-499	4
1-249	6
0	10

12. Total volume (gallons) of grape wine you expect to produce in 2009: (fill-in answers)

28 answered

35,400 gallons total

Total gallons	# answered
5000+	4
2500-4999	1
1000-2499	3
500-999	2
250-499	2
1-249	10
0	6

14. Total volume (gallons) of grape wine you expect to produce in 2014 (five years from now): (fill-in answers)

29 answered

68,122 gallons total

Total gallons	# answered
10000+	3
5000+	4
2500-4999	1
1000-2499	7
500-999	6
250-499	1
1-249	4
0	3

11. Percentage of wine volume produced in 2008 from grapes grown at your vineyard:

28 answered

54.21% average

84.33% average for those who use any of own grapes

% own grapes used	# answered	Average %
100	12	100
50-99	4	77.75
25-49	0	na
1-24	2	3.5
0	10	0

-- If not 100%, please enter state(s) from which the other grapes came and the percentage of your total volume of wine produced from each state:

15 answered

27% use California grapes (4 answered)

73.25% average total volume of wine produced (volumes given: 50,50,93,100%)

40% use New York grapes (6 answered)

46.33% average total volume of wine produced (volumes given: 5,20,25,30,98,100%)

13% use Vermont grapes (2 answered)

19.50% average total volume of wine produced (volumes given: 14,25%)

7% use Massachusetts grapes (1 answered)

10.00% average total volume of wine produced

7% use unknown source grapes (1 answered)

2.00% average total volume of wine produced

13. Percentage of wine volume you expect to produce in 2009 from grapes grown at your vineyard:

29 answered

59.90% average

86.86% for those who use any of own grapes

% own grapes used	# answered	Average %
100	14	100
50-99	4	75
25-49	0	na
1-24	2	18.5
0	9	0

Pest Management Practices and Materials

Integrated Pest Management (IPM) can be defined as a sustainable approach to managing pests (e.g., insects, pathogens causing disease, weeds, etc.) which combines biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks.

15. Do you practice IPM in your vineyard (including organic IPM which would use organically-acceptable tools and practices)?

34 answered

	# answered	% of answers
Yes	27	79%
No	4	12%
Unsure	3	9%

-- If yes, where would you put your vineyard on the IPM continuum in terms of intensity and/or level of IPM implementation

29 answered (Includes 2 who answered 'Unsure' above)

	# answered	% of answers
Beginning	9	31%
2	2	7%
3	8	28%
4	7	24%
Advanced	3	10%

16. Do you regularly monitor your vineyard for insect pests and disease levels during the growing season?

35 answered

	# answered	% of answers
Yes	34	97%
No	0	0%
Unsure	1	3%

-- If yes, how often during the growing season do you monitor your vineyard?

35 answered (Includes 1 who answered 'Unsure' above)

	# answered	% of answers
More than once a week	26	74%
Once a week	7	20%
Once every two weeks	1	3%
Once every three weeks	0	0%
Once a month	0	0%
Less than once a month	1	3%

17. Do you use established, published methods for monitoring and for determining threshold levels of pests?

34 answered

	# answered	% of answers
Always	9	26%
Sometimes	8	24%
Never	6	18%
Unsure	11	32%

-- If Always, for what pests? (fill-in answers)

8 answered

	# answered
Grape berry moth	1
Grape Flea Beetle	3
Japanese Beetles	8
Rose chafer	2
Mildews	1
Downy Mildew	2
Powdery Mildew	2
Birds	1
Turkeys	1
Moles	1
Deer	1
Weeds	1
etc.	3

-- If Sometimes, for what pests? (fill-in answers)

6 answered

	# answered
Aphids	1
Asian Lady Beetles	1
Grape Flea Beetle	3
Grape vine berry moth	1
Japanese Beetles	4
Moths	1
Phylloxera	2
Rose chafer	1
BR	1
Downy Mildew	1
Powdery Mildew	2
etc.	1

18. Do you keep records of all monitoring information, sampling dates, insect pest or disease levels, trap captures, and thresholds for your vineyard?

34 answered

	# answered	% of answers
Always	6	18%
Sometimes	19	56%
Never	7	21%
Unsure	2	6%

19. Do you keep records of location and identity of difficult to manage weeds as well as weed species that have 'escaped' annual weed management programs?

34 answered

	# answered	% of answers
Always	2	6%
Sometimes	13	38%
Never	19	56%
Unsure	0	0%

20. How would you rate your overall knowledge of the disease cycles of the major grape DISEASES, the optimal time(s) to manage each disease, and the pro's and con's of various management options?

34 answered

	# answered	% of answers
Excellent	3	9%
Good	10	29%
Average	12	35%
Minimal	9	26%
Very Poor	0	0%

21. How important is it to you to learn more about the major grape diseases, the optimal time(s) to manage them, and the various management options?

34 answered

	# answered	% of answers
Highly Important	28	82%
Moderately Important	5	15%
Slightly Important	1	3%
Not at all Important	0	0%
Unsure	0	0%

22. How would you rate your overall knowledge of the insect life cycles of the major grape INSECT pests, the optimal time(s) to manage each pest, and the pro's and con's of various management options?

34 answered

	# answered	% of answers
Excellent	4	12%
Good	6	18%
Average	14	41%
Minimal	10	29%
Very Poor	0	0%

23. How important is it to you to learn more about the major grape insect pests, the optimal time(s) to manage them, and the various management options?

34 answered

	# answered	% of answers
Highly Important	28	82%
Moderately Important	4	12%
Slightly Important	2	6%
Not at all Important	0	0%
Unsure	0	0%

24. How would you rate your overall knowledge of the WEEDS that impact grape production, the optimal time to manage the various weeds, and the pro's and con's of various management options?

34 answered

	# answered	% of answers
Excellent	3	9%
Good	9	26%
Average	10	29%
Minimal	11	32%
Very Poor	1	3%

25. How important is it to you to learn more about weeds , the optimal time(s) to manage them, and the various management options?

34 answered

	# answered	% of answers
Highly Important	18	53%
Moderately Important	10	29%
Slightly Important	3	9%
Not at all Important	2	6%
Unsure	1	3%

26. How would you rate your overall knowledge of BENEFICIAL ORGANISMS and the potential for BIOLOGICAL CONTROL in your vineyard?

34 answered

	# answered	% of answers
Excellent	2	6%
Good	8	24%
Average	11	32%
Minimal	10	29%
Very Poor	3	9%

27. How important is it to you to learn more about beneficial organisms and the potential for biological control?

34 answered

	# answered	% of answers
Highly Important	23	68%
Moderately Important	8	24%
Slightly Important	3	9%
Not at all Important	0	0%
Unsure	0	0%

28. How would you rate your overall knowledge of RESISTANCE management strategies/options for insecticides, miticides, fungicides and herbicides?

33 answered

	# answered	% of answers
Excellent	2	6%
Good	11	33%
Average	12	36%
Minimal	6	18%
Very Poor	2	6%

29. How important is it to you to learn more about ways to mitigate the development of resistance to different insecticides, miticides, fungicides and herbicides?

33 answered

	# answered	% of answers
Highly Important	22	67%
Moderately Important	7	21%
Slightly Important	2	6%
Not at all Important	1	3%
Unsure	1	3%

30. Do you know which grape pesticides are considered REDUCED-RISK PESTICIDES?

32 answered

	# answered	% of answers
Yes	9	28%
No	15	47%
Unsure	8	25%

-- If yes, please list those you have used ... (fill-in answers)

9 answered

Perceived as Reduced-Risk	# answered	Actual Designation
Armicarb	1	Biopesticide
Captan	1	Conventional
Dipel	1	Organic
Mancozeb	2	Conventional
Nova	1	Conventional
Phosphorous Acid	3	Biopesticide
Stylet Oil, oils	2	Organic
Sulfur	2	Organic
various potassium salts	1	na
called lorrane berkett	1	na

... OR have considered using (fill-in answers)

1 answered

Perceived as Reduced-Risk	# answered	Actual Designation
Surround	1	Organic

31. How important is it to you to learn more about reduced-risk pesticides?

34 answered

	# answered	% of answers
Highly Important	19	56%
Moderately Important	12	35%
Slightly Important	1	3%
Not at all Important	1	3%
Unsure	1	3%

32. Do you know which grape pesticides are considered BIOPESTICIDES?

34 answered

	# answered	% of answers
Yes	2	6%
No	23	68%
Unsure	9	26%

-- If yes, please list those you have used ... (fill-in answers)

1 answered

Perceived as Biopesticide	# answered	Actual Designation
Pest Out	1	Organic

... OR have considered using (fill-in answers)

0 answered

33. How important is it to you to learn more about biopesticides?

34 answered

	# answered	% of answers
Highly Important	17	50%
Moderately Important	10	29%
Slightly Important	3	9%
Not at all Important	0	0%
Unsure	4	12%

34. Do you know which pesticides are ORGANICALLY-APPROVED according to National Organic Standards?

34 answered

	# answered	% of answers
Yes	15	44%
No	15	44%
Unsure	4	12%

35. Are you producing grapes using organically-approved practices and materials?

34 answered

	# answered	% of answers
Yes	7	21%
No	21	62%
Unsure	6	18%

-- If yes, are you

6 answered

	# answered	% of answers
Certified organic	2	33%
Transitioning to certified organic grape production	0	0%
Neither	4	67%

36. How important is it to you to learn more about organically-approved practices and pesticides?

33 answered

	# answered	% of answers
Highly Important	20	61%
Moderately Important	6	18%
Slightly Important	4	12%
Not at all Important	3	9%
Unsure	0	0%

37. Do you consider the following when selecting a pesticide (e.g., insecticide, fungicide, herbicide)?

Spectrum of activity

30 answered

	# answered	% of answers
Always	21	70%
Sometimes	5	17%
Never	0	0%
Unsure	4	13%

Non-target impact on beneficial organisms

31 answered

	# answered	% of answers
Always	17	55%
Sometimes	8	26%
Never	1	3%
Unsure	5	16%

Mode of action of pesticide

29 answered

	# answered	% of answers
Always	17	59%
Sometimes	8	28%
Never	0	0%
Unsure	4	14%

Chemical family of pesticide

29 answered

	# answered	% of answers
Always	16	55%
Sometimes	6	21%
Never	2	7%
Unsure	5	17%

Toxicity to pesticide applicator

31 answered

	# answered	% of answers
Always	24	77%
Sometimes	2	6%
Never	1	3%
Unsure	4	13%

Signal word on label

28 answered

	# answered	% of answers
Always	20	71%
Sometimes	1	4%
Never	1	4%
Unsure	6	21%

Cost of pesticide

31 answered

	# answered	% of answers
Always	13	42%
Sometimes	15	48%
Never	1	3%
Unsure	2	6%

Resistance risk rating

29 answered

	# answered	% of answers
Always	15	52%
Sometimes	8	28%
Never	1	3%
Unsure	5	17%

Whether it is a reduced-risk pesticide

30 answered

	# answered	% of answers
Always	13	43%
Sometimes	7	23%
Never	3	10%
Unsure	7	23%

Whether it is a biopesticide

28 answered

	# answered	% of answers
Always	3	11%
Sometimes	7	25%
Never	8	29%
Unsure	10	36%

Whether it is an organically-approved pesticide

30 answered

	# answered	% of answers
Always	12	40%
Sometimes	6	20%
Never	9	30%
Unsure	3	10%

Potential movement in soil/water

30 answered

	# answered	% of answers
Always	19	63%
Sometimes	4	13%
Never	2	7%
Unsure	5	17%

Re-entry interval

29 answered

	# answered	% of answers
Always	20	69%
Sometimes	2	7%
Never	2	7%
Unsure	5	17%

Days to harvest interval (Preharvest interval)

30 answered

	# answered	% of answers
Always	24	80%
Sometimes	2	7%
Never	1	3%
Unsure	3	10%

Other: (fill-in answers)

4 answered

toxicity to vines (Always)	1
all natural, can be made on farm	1
efficacy at limited application	1
pesticides are not used	1

38. When you apply an INSECTICIDE to your vineyard do you usually treat the whole vineyard or do you only spot treat sections that may have a problem?

30 answered

	# answered	% of answers
Always spray whole vineyard	13	43%
Frequently will only spray part of vineyard that has a problem	6	20%
Sometimes will only spray part of vineyard that has a problem	11	37%

39. When you apply a FUNGICIDE to your vineyard do you usually treat the whole vineyard or do you only spot treat sections that have varieties susceptible to particular disease or that may have a problem?

30 answered

	# answered	% of answers
Always spray whole vineyard	19	63%
Frequently will only spray part of vineyard that has a problem	3	10%
Sometimes will only spray part of vineyard that has a problem	8	27%

40. When you apply a HERBICIDE to your vineyard do you usually treat the whole vineyard (i.e., all vine rows) or do you only spot treat sections that may have a problem?

26 answered

	# answered	% of answers
Always spray whole vineyard (all vine rows)	15	58%
Frequently will only spray part of vineyard that has a problem	5	19%
Sometimes will only spray part of vineyard that has a problem	6	23%

41. Do you calibrate your sprayer to determine gallons being applied per acre and coverage?

30 answered

	# answered	% of answers
Yes	25	83%
No	5	17%

-- If yes, how often during the growing season do you calibrate your sprayer?

24 answered

	# answered	% of answers
Once	9	38%
Twice	5	21%
More than two times	10	42%

42. Do you use water-sensitive paper to determine spray deposit and canopy spray coverage?

30 answered

	# answered	% of answers
Yes	3	10%
No	24	80%
Unsure	3	10%

43. How would you rate your overall knowledge of pesticide drift-reducing practices and equipment?

34 answered

	# answered	% of answers
Excellent	6	18%
Good	13	38%
Average	6	18%
Minimal	8	24%
Very Poor	1	3%

44. How important is it to you to learn more about practices and equipment that reduce pesticide spray drift?

34 answered

	# answered	% of answers
Highly Important	19	56%
Moderately Important	8	24%
Slightly Important	6	18%
Not at all Important	1	3%
Unsure	0	0%

45. Please check the pesticide drift management methods that you use:
29 answered

	# answered	% of answers
Vineyard is oriented to avoid sensitive areas	17	59%
Use nozzles that optimize droplet size and do not create too many fine droplets	20	69%
Reduce pump pressure	13	45%
Adjust air fan speed and direction	9	31%
Use shielded sprayer	0	0%
Use re-circulating spray booms	1	3%
Focus nozzles on target canopy	22	76%
Calibrate spray volume output	14	48%
Calibrate spray location output	12	41%
Spray into exterior rows	9	31%
Spray only when wind speed and direction are suitable	25	86%

Other: (fill-in answers)

2 answered

Watch weather forecast	1
Pesticides are not used	1

46. Please check the worker protection standards that apply to you and your vineyard:

24 answered

	# answered	% of answers
Maintain current state applicator license	15	63%
Train employees annually with EPA-approved materials	3	13%
Record all pesticide applications	22	92%
Post application information in central location	7	29%
Post restricted entry intervals in the vineyard or other central location	6	25%

Other: (fill-in answers)

4 answered

Verbal to all employees	1
Do not use any restricted chemicals/ only spray non restricted use spray	2
Note: Just starting to train employees, but they don't handle the pesticides, but are being made aware of return intervals, what chemicals work on what diseases/pests, etc.	1

47. How would you rate your overall knowledge on the safe use and storage of pesticides?

34 answered

	# answered	% of answers
Excellent	3	9%
Good	17	50%
Average	8	24%
Minimal	6	18%
Very Poor	0	0%

48. How important is it to you to learn more about the safe use and storage of pesticides?

34 answered

	# answered	% of answers
Highly Important	19	56%
Moderately Important	9	26%
Slightly Important	4	12%
Not at all Important	2	6%
Unsure	0	0%

49. Do you maintain records of pesticide applications, including date, field and/or vineyard section, target pest, crop stage, pesticide name and EPA number, formulation, rate and number of acres treated?

32 answered

	# answered	% of answers
Always	21	66%
Sometimes	5	16%
Never	3	9%
Unsure	3	9%

50. Do you or a member of your vineyard operation have a pesticide applicator's license?

33 answered

	# answered	% of answers
Yes	17	52%
No	15	45%
Unsure	1	3%

51. Which of the following **INSECTS/MITES have been a problem in your vineyard requiring the use of a pesticide to manage them?**

Banded grape bug

15 answered

	# answered	% of answers
Yes	0	0%
No	13	87%
Unsure	2	13%

Climbing cutworms

17 answered

	# answered	% of answers
Yes	2	12%
No	13	76%
Unsure	2	12%

European corn borer

14 answered

	# answered	% of answers
Yes	0	0%
No	12	86%
Unsure	2	14%

European red mites

16 answered

	# answered	% of answers
Yes	1	6%
No	11	69%
Unsure	4	25%

Flea beetle

18 answered

	# answered	% of answers
Yes	11	61%
No	5	28%
Unsure	2	11%

Grape berry moth

19 answered

	# answered	% of answers
Yes	10	53%
No	9	47%
Unsure	0	0%

Grape cane borer

16 answered

	# answered	% of answers
Yes	2	13%
No	9	56%
Unsure	5	31%

Grape cane gallmakers

16 answered

	# answered	% of answers
Yes	1	6%
No	11	69%
Unsure	4	25%

Grape cane girdlers

16 answered

	# answered	% of answers
Yes	5	31%
No	8	50%
Unsure	3	19%

Grape leafhopper

19 answered

	# answered	% of answers
Yes	7	37%
No	12	63%
Unsure	0	0%

Grape phylloxera

22 answered

	# answered	% of answers
Yes	12	55%
No	7	32%
Unsure	3	14%

Grape plume moth

15 answered

	# answered	% of answers
Yes	0	0%
No	15	100%
Unsure	0	0%

Grape root borers

16 answered

	# answered	% of answers
Yes	1	6%
No	9	56%
Unsure	6	38%

Grape rootworm

15 answered

	# answered	% of answers
Yes	0	0%
No	15	100%
Unsure	0	0%

Japanese beetles

27 answered

	# answered	% of answers
Yes	24	89%
No	2	7%
Unsure	1	4%

Lygocoris inconspicuus

14 answered

	# answered	% of answers
Yes	0	0%
No	14	100%
Unsure	0	0%

Multicolored Asian lady beetle

18 answered

	# answered	% of answers
Yes	5	28%
No	10	56%
Unsure	3	17%

Potato leafhoppers

16 answered

	# answered	% of answers
Yes	1	6%
No	15	94%
Unsure	0	0%

Red-banded leaf roller

16 answered

	# answered	% of answers
Yes	1	6%
No	13	81%
Unsure	2	13%

Rose chafer

18 answered

	# answered	% of answers
Yes	9	50%
No	9	50%
Unsure	0	0%

Thrips

15 answered

	# answered	% of answers
Yes	1	7%
No	11	73%
Unsure	3	20%

Two-spotted spider mites

17 answered

	# answered	% of answers
Yes	1	6%
No	16	94%
Unsure	0	0%

Other: (fill-in answers)

1 answered

No problems of significance yet	1
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52. Which INSECTICIDES/MITICIDES have you used in your vineyard and, on average, how many times did you apply each during a growing season?

19 answered that they apply

18 answered # applications per season

	# answered that they apply	% of total who answered they apply	# answered the #applications applied	Average # applications per season given
ABBA	0	0%	0	0.00
Acramite	0	0%	0	0.00
Agrimek	0	0%	0	0.00
Assail	1	5%	1	3.00
Avaunt	0	0%	0	0.00
Biobit	0	0%	0	0.00
Capture	0	0%	0	0.00
Danitol	1	5%	1	1.00
Diazinon	0	0%	0	0.00
Dipel	2	11%	2	2.50
Entrust	0	0%	0	0.00
Evergreen	0	0%	0	0.00
Imidan	2	11%	2	2.00
Intrepid	0	0%	0	0.00
JMS Stylet oil	3	16%	3	2.00
Kelthane	0	0%	0	0.00
Lannate	0	0%	0	0.00
M-Pede	0	0%	0	0.00
Provado	0	0%	0	0.00
Sevin	15	79%	13	2.23
Success	0	0%	0	0.00
Thionex	1	5%	1	1.00
Vendex	0	0%	0	0.00
Venom	0	0%	0	0.00
Zeal Miticide 1	0	0%	0	0.00

Other: (fill-in answers)

6 answered

	# answered that they apply	Average # applications per season given
AZADirect	1	3.00
Merit	1	1.00
Pest Out	1	every 10 days
Rotenone/Pyrethrins	1	1.00
Sulfur	1	1.00
Our own herb tea repellent only	1	8.00
None used	1	na

53. Have you used any non-pesticide methods/techniques to manage any insects/mites? (fill-in answers)

13 answered

Insect/Mite	# answered	% of answers	methods	# answered
All Insect/Mites	2	15%	tree swallow bird houses	1
			lady bugs	1
Asian Lady Beetles	1	8%	hand pick them out of the harvested grapes	1
Japanese Beetle	6	46%	milkey Spore	2
			neem oil	1
			manual removal	4
Rose Chafer	2	15%	custom herbal tea repellent mix	1
			manual removal	1
Other Beetles	1	8%	turkeys	1
Grape berry moth	2	15%	removed by hand	1
			remove wild grapes in area	1
Leaf Phylloxera	1	8%	hand pick the infected leaves off	1

54. Which of the following **DISEASES have been a problem in your vineyard requiring the use of a pesticide to manage them?**

Angular leaf scorch

16 answered

	# answered	% of answers
Yes	3	19%
No	10	63%
Unsure	3	19%

Anthracnose

15 answered

	# answered	% of answers
Yes	4	27%
No	9	60%
Unsure	2	13%

Black rot

21 answered

	# answered	% of answers
Yes	14	67%
No	6	29%
Unsure	1	5%

Botrytis bunch rot

17 answered

	# answered	% of answers
Yes	7	41%
No	9	53%
Unsure	1	6%

Crown gall

17 answered

	# answered	% of answers
Yes	5	29%
No	11	65%
Unsure	1	6%

Downy mildew

22 answered

	# answered	% of answers
Yes	16	73%
No	4	18%
Unsure	2	9%

Eutypa dieback

15 answered

	# answered	% of answers
Yes	0	0%
No	12	80%
Unsure	3	20%

Phomopsis cane and leaf spot

19 answered

	# answered	% of answers
Yes	8	42%
No	9	47%
Unsure	2	11%

Powdery mildew

23 answered

	# answered	% of answers
Yes	16	70%
No	5	22%
Unsure	2	9%

Sour rot

14 answered

	# answered	% of answers
Yes	2	14%
No	10	71%
Unsure	2	14%

Summer rots (bitter rot & ripe rot)

15 answered

	# answered	% of answers
Yes	2	13%
No	12	80%
Unsure	1	7%

Other: (fill-in answers)

3 answered

none/none to date/none of the above	3
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55. Which FUNGICIDES have you used in your vineyard and, on average, how many times did you apply each during a growing season?

21 answered that they apply

17 answered # applications per season

	# answered that they apply	% of total who answered they apply	# answered the #applications applied	Average # applications per season given
Abound	3	14%	2	1.50
Adament	0	0%	0	0.00
Armicarb	0	0%	0	0.00
Armicarb 100	2	10%	2	2.50
Captan	8	38%	7	2.43
Captec	1	5%	1	3.00
Copper	8	38%	6	3.50
Dithane	6	29%	6	2.33
Elevate	2	10%	2	1.50
Elite	3	14%	3	2.00
Endura	0	0%	0	0.00
Ferbam Granuflo	0	0%	0	0.00
Flint	2	10%	1	1.00
JMS Stylet oil	3	14%	3	2.67
Kaligreen	0	0%	0	0.00
Lime sulfur	5	24%	3	1.00
Manzate	6	29%	4	2.75
Nova (Rally)	10	48%	10	1.80
Nutrol	1	5%	1	4.00
Orius	0	0%	0	0.00
Penncozeb	1	5%	1	2.00
Phosphorous acid	5	24%	5	2.80
Pristine	3	14%	3	1.67
Procure	0	0%	0	0.00
Quintec	1	5%	0	0.00
Ridomil	1	5%	1	2.00
Rovral	0	0%	0	0.00
Rubigan	0	0%	0	0.00
Scala	0	0%	0	0.00
Sovran	4	19%	4	2.00
Sulfur	9	43%	7	3.71
Topsin-M	0	0%	0	0.00
Vanguard	0	0%	0	0.00
Vintage	0	0%	0	0.00

Other: (fill-in answers)

4 answered

	# answered that they apply	Average # applications per season given
Mildew Cure	1	every 10 days
Prophyte	1	na
Serenade	1	na
None used	1	na

56. Have you used any non-pesticide methods/techniques to manage any diseases? (fill-in answers)

4 answered

Disease	# answered	% of answers	methods	# answered
All Diseases	3	75%	burn prunings	1
			clean vineyard	1
			leaf pulling	1
			row orientaion, trellis system	1
			weed management	1
			don't touch the leaves/canes when they're wet	1
			remove wild grapes	1
			cut back hedgerows for air movement	1
Root diseases	1	25%	Ivory liquid sprayed on all pruning cuts	1
Mildew	1	25%	neem oil	1

57. Which of the following WEED TYPES have been a problem in your vineyard requiring the use of a pesticide to manage them?

Annual Broadleaf

26 answered

	# answered	% of answers
Yes	17	65%
No	6	23%
Unsure	3	12%

Annual Grasses

29 answered

	# answered	% of answers
Yes	20	69%
No	7	24%
Unsure	2	7%

Perennial Weeds

28 answered

	# answered	% of answers
Yes	20	71%
No	6	21%
Unsure	2	7%

58. Have any particular WEEDS (e.g., pigweed, crabgrass, thistle, etc.) been a problem in your vineyard requiring the use of a pesticide to manage them? (fill-in answers)

7 answered

	# answered
begger's tick	1
crabgrass	2
crown vetch/vetch	2
hay (not a weed) but hard to control	1
horsetail	1
none	2
ragweed	2
velvet leaf	1

59. Which HERBICIDES have you used in your vineyard and, on average, how many times did you apply each during a growing season?

20 answered that they apply

19 answered # applications per season

	# answered that they apply	% of total who answered they apply	# answered the #applications applied	Average # applications per season given
Aim	0	0%	0	0.00
Bio-Weed	0	0%	0	0.00
Casoron	1	5%	1	1.00
Chateau	2	10%	2	1.00
Devrinol	1	5%	1	1.00
Direx	0	0%	0	0.00
Fusilade	0	0%	0	0.00
Gallery	0	0%	0	0.00
Goal	0	0%	0	0.00
Gramoxone	2	10%	2	1.00
Karmex	0	0%	0	0.00
Kerb	0	0%	0	0.00
Other:	0	0%	0	0.00
Other:	0	0%	0	0.00
Oxiflo	0	0%	0	0.00
Poast	0	0%	0	0.00
Princep	0	0%	0	0.00
Prowl H2O	0	0%	0	0.00
Rely	3	15%	3	1.67
Roundup	19	95%	18	1.72
Scythe	0	0%	0	0.00
Select	0	0%	0	0.00
Snapshot	0	0%	0	0.00
Solicam	0	0%	0	0.00
Surflan	2	10%	1	1.00
Touchdown	1	5%	1	3.00
Treflan	0	0%	0	0.00
Weedzstop	0	0%	0	0.00

Other: (fill-in answers)

2 answered

	# answered that they apply	Average # applications per season given
Simizine	1	1.00
Weed Zap	1	every 14 days

60. Have you used any non-pesticide methods/techniques to manage any of the weeds? (fill-in answers)

17 answered

Weed	# answered	% of answers	methods	# answered
All Weeds	11	65%	weed whacker	2
			red dragon (flame engineering) 2per season	2
			cultivation	3
			mowing	3
			various mulches	3
			Manual removal	4
Beggar's Tick	1	6%	by hand	1
Dog Strangle Vine	1	6%	cutting	1
Grasses	4	24%	wood chip mulch	1
			mowing	1
			manual removal (crabgrass)	1
			cultivate/hoe	1
Lambs quarters	1	6%	cultivate/hoe	1
Milkweed	1	6%	mowing	1
Nightshade	1	6%	cultivate/hoe	1
Ragweed	1	6%	by hand	1
Velvet Leaf	1	6%	by hand	1

61. Which of the following VERTEBRATES have been a problem in your vineyard?
 26 answered

	# answered	% of answers
Turkeys	14	54%
Starlings	11	42%
Other Birds	16	62%
Deer	21	81%
Raccoons	9	35%
Voies/Mice	11	42%

Other: (fill-in answers)

7 answered

	# answered
Bear	2
Groundhogs	2
Horses	1
Rabbit	1
Pretty mild vertebrate issues so far	1
None	1

62. Have you used any non-pesticide methods/techniques to manage any of the vertebrates? (fill-in answers)

23 answered

Vertebrate	# answered	% of answers	methods	# answered
All Vertebrates	7	30%	.223 rifle	1
			dogs	2
			fencing	2
			6 ft, 8 wire electric fence	1
			solar fence	1
			netting	2
Bear	1	4%	bars of Irish Spring soap on the top of the fence posts at the wood-side edge of the vineyard	1
Birds/Crows	11	48%	alarm calls	3
			owl perching, with movements	1
			tin plates, hanging from wire	1
			bird bangers, rockets with report	1
			flare gun	1
			habit disruption	1
			nets	8
Deer	12	52%	electric fence	4
			fence	4
			netting	1
			fishing line around vines	1
			hang human hair on wires(from hair salons)	1
			scents	1
Horses	1	4%	electric fence	1
Raccoons	4	17%	trap	2
			electric fence	1
			netting	1
Turkeys	6	26%	bird bangers, rockets with report	2
			will be using Whirlybird thing	1
			fence	1
			netting	1
			0.223	1
Voles/Mice	4	17%	resident hawk & fox	1
			mow grass short	1
			dogs (with mole mouths)	1
			.22/12ga	1