FINGER LAKES VINEYARD NOTES

July 7th, 2004

Cornell Cooperative Extension
Finger Lakes Grape Program

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SURVEY OF WINTER INJURY IN THE FINGER LAKES – PART I

Timothy E. Martinson
Finger Lakes Grape Program

As many of you know, our program has undertaken two surveys to document winter injury to several varieties in the Finger Lakes. The first (reported here) is our estimates of winter injury collected from 223 vineyard blocks in the Finger Lakes, including 53 on Keuka Lake, 144 on Seneca Lake, and 33 on Cayuga Lake. This survey was done by Bill Wilsey with assistance from Steve Lerch and Dave Chicoiné of Bob Pool’s program. I’m grateful to Bob for allowing them to spend some of their work time on this project.

The other survey is the one I asked you to fill out with your own estimates of vine injury and vine replacement. I’ll report on that survey in a later newsletter.

Methods. We looked at 30 vines per block in each block sampled. Vines were categorized by the number of live shoots into four categories: no live shoots on top, 1-5 live shoots, 5-20 live shoots, and more than 20 live shoots. In addition, we looked at the base of the trunk and recorded the number of suckers present. Finally, we looked at about 100 shoots per block and counted the number with no clusters, one cluster, or 2 or more clusters. Our goal was to estimate 1) the percentage of trunks that would need renewal, 2) The percentage of dead (or nearly dead) vines that would need replacement, 3) average number of clusters per shoot (low numbers suggest that the buds that pushed were spindly or tertiaries), and 4) use this information to estimate the percentage of an ‘average’ yield that could be expected from these vineyards. A few words about how the numbers were calculated:

% Trunk Replacement. We assumed that any vine with less than 20 live shoots was a candidate for trunk renewal.

% Vine Replacement. Vines with less than 5 live shoots and 1 or fewer suckers were categorized as ‘probable dead’ vines that would need to be replaced. This estimate is probably on the conservative side.

% Of Average Crop. The final calculation (% of total yield) assumes that vines have about 4 shoots per four row, or about 25 shoots per vine (6 ft spacing, typical for V. vinifera), and that a vine with a ‘full crop’ would have about 41 clusters per vine or 1.6 clusters per shoot (about 10.5 lb/vine, assuming cluster weight of 0.25 lb, roughly equivalent to 4 T/acre at 600 ft vine spacing). Obviously, this would be low for some varieties and training systems. By doing this, I avoided the pitfall of trying to incorporate different cluster weights, vine spacing, etc., into the estimate to come up with tonnage figures.
**Results.** The results, summarized in Table 1, show a wide range of injury, with 13-14% (Merlot and Gewurztraminer) to 80% (Baco noir) of a full crop estimated. Among the V. vinifera varieties, Riesling and Pinot Gris had the highest estimated crop at 42%, Cabernet Franc, Cabernet Sauvignon, and Chardonnay came in at 25-28% of an average crop, while Pinot Noir, Gewurztraminer and Merlot came in at 13-19% of an average crop.

**Clusters per shoot.** Looking at clusters per shoot, only Riesling and Pinot Gris showed the 1.2-1.5 cluster/shoot average approaching the 1.5-1.8 levels normally seen; while other V. vinifera varieties had less than 1 cluster per shoot. This indicates that many of the buds that pushed were less-fruitful seconddaries or tertiaries. Estimated trunk replacement (based on significantly reduced numbers of live buds) ranged from 50-90%, or average, while 10-30% of V. vinifera vines in blocks surveyed will need to be replanted.

**Ranges of Injury.** Please note that the averages are only part of the story. A very wide range of injury was seen in almost all varieties. For all of the V. vinifera varieties, at least one of the blocks we surveyed will require close to 100% trunk renewal (Table 1), and the high end of vine replacement ranges from 47-100% for V. vinifera varieties. At least 10 varieties have at least one block where the expected crop will be no crop for 2004.

**Table 2.** A better indicator of overall damage is to look at the 25%, 50% (median), and 75% levels for expected crop, shown in Table 2. For Merlot, the lowest 50% of the vineyards surveyed will have no crop; the third quarter will have 5-52% of a crop, and the top 25% are expected to have between 22 and 56% of a full crop. Riesling faced better, with the bottom 25% of vineyards having 0-21% of a normal crop; the second quarter with 21-38%, the third quarter having between 36-58% and the top quarter of vineyards surveyed having from 58% to

<table>
<thead>
<tr>
<th>Variety</th>
<th>N</th>
<th>Clusters per shoot</th>
<th>% Trunk Replacement</th>
<th>% Vine Replacement</th>
<th>% Of Average Crop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ave</td>
<td>Min</td>
<td>Max</td>
<td>Ave</td>
<td>Min</td>
</tr>
<tr>
<td>Merlot</td>
<td>13</td>
<td>0.6</td>
<td>88</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Gewurztraminer</td>
<td>17</td>
<td>0.6</td>
<td>76</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Chambourcin</td>
<td>1</td>
<td>0.9</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Pinot Noir</td>
<td>24</td>
<td>0.6</td>
<td>67</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>Lemberger</td>
<td>4</td>
<td>0.5</td>
<td>59</td>
<td>20</td>
<td>97</td>
</tr>
<tr>
<td>Chardonnay</td>
<td>36</td>
<td>0.7</td>
<td>64</td>
<td>0</td>
<td>100</td>
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<tr>
<td>Cabernet Sauvignon</td>
<td>15</td>
<td>0.8</td>
<td>62</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Cabernet Franc</td>
<td>31</td>
<td>0.8</td>
<td>64</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Traminette</td>
<td>5</td>
<td>0.9</td>
<td>56</td>
<td>0</td>
<td>84</td>
</tr>
<tr>
<td>Riesling</td>
<td>40</td>
<td>1.2</td>
<td>55</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Pinot Gris</td>
<td>6</td>
<td>1.5</td>
<td>68</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Niagara</td>
<td>7</td>
<td>1.1</td>
<td>30</td>
<td>0</td>
<td>97</td>
</tr>
<tr>
<td>Cayuga White</td>
<td>16</td>
<td>1.4</td>
<td>57</td>
<td>0</td>
<td>99</td>
</tr>
<tr>
<td>DeChaunac</td>
<td>2</td>
<td>1.1</td>
<td>21</td>
<td>0</td>
<td>41</td>
</tr>
<tr>
<td>Aurore</td>
<td>6</td>
<td>1.5</td>
<td>47</td>
<td>0</td>
<td>83</td>
</tr>
<tr>
<td>Catawba</td>
<td>1</td>
<td>1.1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Baco Noir</td>
<td>4</td>
<td>1.4</td>
<td>2</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>

Survey of 228 vineyard blocks in the Finger Lakes. In each block, 30 vines were classified by the number of shoots pushing (0, 1-5, >20) and presence or absence of vines emerging from the graft union or base of the trunk. Average clusters per shoot were calculated from samples of 100 shoots per block. % of Average Crop multiples in average crop of 4 Tonn at 60° vine spacing, and an average of 1-4 clusters per shoot.
Table 1. Range of % of average yield expected of lowest 25, 50, 75, and top quarter of the Finger Lakes vineyards surveyed.

<table>
<thead>
<tr>
<th>Vineyards surveyed</th>
<th>Merlot</th>
<th>Gewurztraminer</th>
<th>Pinot Noir</th>
<th>Cabernet Sauvignon</th>
<th>Chardonnay</th>
<th>Cabernet Franc</th>
<th>Riesling</th>
<th>Cayuga White</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>13</td>
<td>17</td>
<td>24</td>
<td>15</td>
<td>36</td>
<td>31</td>
<td>40</td>
<td>36</td>
</tr>
<tr>
<td>lowest 25%</td>
<td>0</td>
<td>0.2</td>
<td>0.5</td>
<td>0.5</td>
<td>0.2</td>
<td>0.2</td>
<td>0</td>
<td>0.33</td>
</tr>
<tr>
<td>next 25%</td>
<td>0.5</td>
<td>2.3</td>
<td>5.1</td>
<td>5.1</td>
<td>2.15</td>
<td>2.18</td>
<td>21.38</td>
<td>33.51</td>
</tr>
<tr>
<td>third 25%</td>
<td>5.22</td>
<td>16.2</td>
<td>13.3</td>
<td>18.3</td>
<td>18.48</td>
<td>38.56</td>
<td>51.69</td>
<td>69.107</td>
</tr>
<tr>
<td>top 25%</td>
<td>22.56</td>
<td>30.56</td>
<td>55.29</td>
<td>55.29</td>
<td>80.17</td>
<td>117.80</td>
<td>117.80</td>
<td>117.80</td>
</tr>
</tbody>
</table>

Note: 'Average' yield assumes 41 clusters per vine, 10.5 l/cluster or 4

104% of normal yield. Again, Gewurztraminer and Pinot Noir fell in the lower group, while Cabernet Sauvignon, Chardonnay, and Cabernet Franc were intermediate.

Intermediate is not great, because it means that % of all vineyards of those varieties will have less than half a crop. For those in the most injured category (Merlot, Gewurztraminer, Pinot Noir), three quarters of vineyards will have less than half a ton of grapes.

Table 3. Range of estimated % replants required in each quarter of Finger Lakes vineyards sampled.

<table>
<thead>
<tr>
<th>Vineyards surveyed</th>
<th>Merlot</th>
<th>Gewurztraminer</th>
<th>Pinot Noir</th>
<th>Cabernet Sauvignon</th>
<th>Chardonnay</th>
<th>Cabernet Franc</th>
<th>Riesling</th>
<th>Cayuga White</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>13</td>
<td>17</td>
<td>24</td>
<td>15</td>
<td>36</td>
<td>31</td>
<td>40</td>
<td>16</td>
</tr>
<tr>
<td>lowest 25%</td>
<td>0</td>
<td>0</td>
<td>0.3</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>next 25%</td>
<td>0.17</td>
<td>0.10</td>
<td>3.12</td>
<td>0.17</td>
<td>0.11</td>
<td>0.3</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>third 25%</td>
<td>17.50</td>
<td>10.25</td>
<td>12.30</td>
<td>17.47</td>
<td>13.27</td>
<td>17.5</td>
<td>14.5</td>
<td>17.6</td>
</tr>
<tr>
<td>top 25%</td>
<td>50.93</td>
<td>25</td>
<td>30.97</td>
<td>47.73</td>
<td>27.87</td>
<td>17.83</td>
<td>14.47</td>
<td>7.17</td>
</tr>
</tbody>
</table>

Replants. The range in the number of replants (Table 3) is also broad across all V. vinifera varieties. The lowest quarter (including vines with trunk injury and no top growth, but numerous suckers) will require no extra replants, while the 2nd quarter will need 3-17% replants. The top half of vineyards surveyed (some varieties) will require more than 10-15% replants — which is the threshold used in several other federally-financed ‘replant’ programs. In one quarter of vineyards we are looking at 20-100% replants (across varieties).

Trunk Renewal. Finally, I’ve put together a table of the estimated percentage of vines needing trunk renewal (Table 4). These numbers show that in 25% of vineyards (some varieties) we might need ‘only’ about 10% to 40% of trunks replaced (except for Merlot at 0-80%). In the remaining three-quarters, estimated need for trunk renewal is above 50% for most varieties. To me this looks like a good argument for simply replacing most or all of your trunks. Some older blocks on (normally) favored sites have many trunks that are 5-10 years old. Given the amount of injury we see out there, it’s a good bet that another 20% of trunks have injury that won’t show up this season, but will probably show up next year.

Hilling up. In the survey, we also kept track of which blocks had been hilled up and which had not. Results (Figure 1) across all grafted varieties are very clear. The range of vines with no foliage on top and 0-1 suckers, (i.e. probable ‘dead’ vines) was much narrower for hilled-up vines than for non-hilled-up vines. This is not many people’s ‘favorite’ job, and many growers moved away from hilling up mature vineyards in the 90s. I suspect the main reason was that it is a time-consuming, messy job, and that many growers figured they lost more vines to the grape hoo during the ‘take-away’ process than they lost to winter injury. Bottom line: Hilling up works. It appeared to work equally as well for growers who applied pomace or wood chips to cover up the graft union as for growers who used the grape hoo. My opinion is that cheaper, less intrusive alternatives to the grape hoo need to be developed. Data from this season demonstrates that hilling up can prevent a 1-2 year dip in yield turn into a 5 year yield loss due to vine replacement.
Table 4. Estimated percentage of trunks that will need to be renewed (< 50% bud survival)

<table>
<thead>
<tr>
<th>Vineyards surveyed</th>
<th>Estimated Minimum % Trunk Renewal (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Merlot</td>
</tr>
<tr>
<td>N</td>
<td>11</td>
</tr>
<tr>
<td>lowest 25%</td>
<td>0-82</td>
</tr>
<tr>
<td>next 25%</td>
<td>82-100</td>
</tr>
<tr>
<td>third 25%</td>
<td>100</td>
</tr>
<tr>
<td>top 25%</td>
<td>100</td>
</tr>
</tbody>
</table>

growers and wineries for responding (over 50 have been received). Stay tuned.

**CORRECTION TO CAYUGA WINTER INJURY FIGURES**

**Timothy E. Martinson**

Those of you who attended the 'Mook Inspection' field day at Anthony Road Winery on June 22 received a preliminary summary of the winter injury data I presented in the previous article. The information reported for Cayuga White (e.g. 39% replants, 72% of vines with significant winter injury) is incorrect. I recall reporting how surprising the data was, and that 'Cayuga looked almost as bad as Merlot'. This is incorrect. Actual figures in my current report show Cayuga white to be comparable in injury levels to the 'Aurore', 'Baco Noir' and 'Catawba' blocks reported. In other words, there is >50% of a crop, low levels of dead vines (2% on average). My apologies for

**UPDATE ON DISASTER DECLARATIONS FOR FINGER LAKES COUNTIES**

**Timothy E. Martinson**

I asked Phil Morehouse, Comsys Executive Director for the Yates/Steuben Farm Services Agency (FSA) to update me on the status of disaster declarations for the Finger Lakes as a result of cold injury during January. Here is the current situation:

- A disaster declaration for Steuben and Yates Counties (those covered by the Yates FSA office) has made its way past the state office and governor, and should be approved by the federal office any day now. When this happens, Yates FSA will send out a press release. This declaration will also apply to counties bordering Yates and Steuben – i.e. Ontario, Seneca, and Schuyler counties. Cayuga County was previously reported to have issued a disaster declaration. This is correct, but it is NOT for grapes, nor low temperatures, but rather because of extensive snow

![Figure 1. % Vine Replacement as affected by hilling up. The boxes show the range of expected replants for unhilled (n) versus hilled (v) vines. Vines that were hilled up have much lower estimated % vine replacement than those that were left unhilled.](image)
over that disrupted some other farm operation. There is no disaster declaration that applies to grapes in Cayuga County.

- Disaster declarations make growers eligible for low interest loans, but there are some 'strings' attached. Nuisable is the requirement that a producer must be 'tuned down' by 3 commercial banks before applying to FSA for low-interest loans.

- Information about low interest loans can be found at: http://www.fsa.usda.gov/pas/publications/facts/html/peney2.htm

This course doesn’t apply to the 'Tree Assistance Program' (TAP) – which in the past has provided 75% cost sharing for zec and vine replacement costs to growers. It requires an appropriation by the US Congress. The NYS Wine Grape Growers and Farm Bureau are working on contacting legislators about this.

75 ATTEND DEC ‘MOCK INSPECTION’ FIELD DAY AT ANTHONY ROAD WINE COMPANY

Timothy E. Martinson

Mike Sarriss of the NY DEC office explains what growers need to do to document Workload Protection Standard training for their employees.

Seven employees of the NY Department of Environmental Conservation (DEC) Pesticides Division came to Anthony Road Wine Company on June 22 to educate grape growers on steps they need to take to be in compliance with worker protection standard (WPS) regulations. The 75 growers in attendance learned the details about WPS posting requirements, what sorts of training and record-keeping are required for vineyard workers, and what facilities (personal protective equipment and wash stations) need to be available for workers. They provided a checklist for growers to assess the compliance of their own business to WPS requirements.

The meeting closed with a brief discussion of winter injury and a barbecue hosted by Anthony Road at the Winery. Cool thanks to Ed Hansbacher of the Bath DEC office (607-776-2165) for organizing this meeting. Thanks also to John, Ann, and Peter Martin for hosting the event, and to both the DEC and Helena Chemical for funds to help defray the cost of the food.

It is anticipated that the DEC will be visiting area grape farms sometime in the future to carry out real inspections.

MISSING VINES - ARE THEY THE DIFFERENCE BETWEEN PROFITS AND LOSSES?

Barry Shaffer
Lake Erie Regional Grape Program

Most juice grape growers know to keep their vine count up. I've recently been in a couple of vineyards that looked to have 10% skips. Having no missing vines is a tough goal to achieve but one to strive towards.

I believe that keeping vine numbers and trellis fill up are fundamentals of viticulture. Reduced vine numbers and reduced trellis fill hurt growers' wallets. Most operating and all fixed expenses are incurred whether you have a vine in place or not! About the only expenses saved by missing vines are pruning and tying. Weed management becomes harder due to less shading from the missing trellis fill. Fertilizer, fungicide, taxes, and depreciation are examples of expenses that are not reduced due to missing vines.

If you have lots of missing vines, analyze why you have missing vines and fix the problem(s). If you have a water drainage problem, for example, fix the problem before planting vines or dippers. Using dippers (layers) is fine but that is difficult unless you have a mother vine next to the vacancy. Consider using grafted vines in areas that you don't have a mother vine handy. Think about using.
planting tubes for training ease and herbicide protection.

The following chart will give you an idea how much revenue you are missing per missing vine per year. This is based on 9'X 8' spacing. Revenues per vine is as follows:

<table>
<thead>
<tr>
<th>&quot;Fall&quot; vineyard</th>
<th>Prices/ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>yields Tons/acre</td>
<td>$150 $225 $300</td>
</tr>
<tr>
<td>5</td>
<td>$1.34</td>
</tr>
<tr>
<td>6</td>
<td>$1.49</td>
</tr>
<tr>
<td>7</td>
<td>$1.74</td>
</tr>
<tr>
<td>8</td>
<td>$1.98</td>
</tr>
</tbody>
</table>

A vineyard with 1000 missing vines, $225 a ton price, and 7 tons per acre yield is losing 70 vines missing a $2250 = $354 per acre in yearly income. This amount could vary will be the difference between a profitable vineyard and one that loses you money most years. Replant your efforts to fill in these!

**UPCOMING EVENTS**

**July 14-16.** ASEV-Eastern Section Annual Technical Meeting and Symposium, Roanoke, Virginia. The annual American Society of Enology and Viticulture Eastern Section meeting will convene at the Hotel Roanoke and Conference Center (www.hotellroanoke.com) to start with a 1.5 day seminar entitled Grapes, Wine and Environment (July 14-16). The underlying goal of the symposium is to explore how soils, climate (particularly temperature), and cultural practices affect fruit and wine composition and quality, especially in a warm, humid environment. Additionally, current research on vine nitrogen nutrition, including wine issues, and on canopy and crop management practices approach for less-than-ideal wine growing climates will be presented. For more information:

http://www.eyesae.org/asev/.

**July 27-28.** Centennial Fruit Field Days and Equipment Show, New York State Agricultural Experiment Station, Geneva, NY. 8:00am - 4:00pm. Fruit growers, consultants, and industry personnel are invited to tour field plots and learn about the latest research and extension efforts being carried out by researchers on the Geneva and Ithaca campuses. On July 27, focus will be on tree fruit technologies and demonstrations and July 28, focus will be on grape and small fruit production.

Pre-registration encouraged. See related flyer included in this newsletter.

**July 27-29.** 2004 Eastern Pinot Noir Conference at Arnot Forest, Newfield, NY. The event will kick off on Tuesday evening July 27 with arrival and a barbecue at the Arnot Forest, catered by Seneca Savory/ Red Newt Winery. Wednesday will be devoted to critical tasting. Dinner will be served at the beautiful Sheildnak Point Vineyards Café on the west side of Cayuga Lake. Tasting will continue on Thursday morning, with the conference adjourning at noon. The registration fee includes all meals and lodging. Registration is $275 for tasters, $175 for Non-tasters, and $75 for children. To register, contact our office at (315) 536-5123.

**July 29.** Winery Waste Water Workshop, 9:00 am - 4:00 pm. Topics include: Dave Kaizer on government regulations, application procedure, SPDES, quality standards, John Thompson from NYS DEC will discuss "Land Application for Non-Recognizable Food Processing Waste", Paul Russell will talk about the importance of wastewater flow measurement and Greg learned about his experience with wastewater management at the Bully Hill Winery. For more information contact Dmitrievics at 315-787-2277 or dd233@cornell.edu.

**August 21.** Celebrate Yates County Bounty, Tonsions Farm Market, Rt 14a, Benton, 4 pm-7 pm. Come to Tomlin's "Lake Friendly Farm" to participate in family fun activities, appreciate Yates County's agricultural communities and taste the goodness of locally grown foods and wine. Activities include: Beef dinner, Finger Lakes/Yates County wine and gourmet cheese tasting, old time photos, a silent auction and Clydesdale wagon rides.

Costs: $15 per ticket, $3 per child, $13 advance sale ticket before August 1. A fundraiser for Cornell Cooperative Extension of Yates County.
CENTENNIAL FRUIT FIELD DAYS
and EQUIPMENT SHOW 2004
NYS Agricultural Experiment Station, Geneva, NY

JULY 27-28
8:30 AM-5:00 PM

Come see the latest research
and extension advances
in tree fruits, grapes, and small fruits
on Tuesday, July 27 and Wednesday, July 28
when Cornell University sponsors 2 Fruit Field Days
at the New York State Agricultural Experiment Station
in Geneva, NY.
All tours will start at the Research South Farm.

The field day is open to all interested fruit growers, consultants and industry personnel. It will cover important New York State crops including apples, peaches, pears, plums and cherries; wine and table grapes; and small fruits like strawberries and raspberries. All tree fruit, small fruit, and grape growers are invited to attend.

The event will be at the Fruit and Vegetable Research Farm located on County Rd. No. 4, one mile west of Pre-Eemption (County Rd. No. 6). There will be tents for lunch and the sponsors' display tables, with parking provided in the open fields there. Equipment will also be on display in the adjacent fields. Buses will take participants to tour the plots being shown on the other research farms. Each day, an array of equipment demonstrations will help growers determine which technologies are best for their orchard or vineyard. Each day DEC pesticide certification credits will be available.
CENTENNIAL FRUIT FIELD DAYS 2004
at the Geneva Experiment Station
The Tentative Schedule Follows:

Tree Fruit Tour
Tuesday, July 27, 2004
8:00 – 8:50 a.m.
• Registration
8:30-10:00 a.m.
• Fruit thinning; sensor technology, etc.
• New apple varieties for NY
• Zonal blightres of Honeycrisp
• Reducing fruit safety risks
10:30 – 12:00 noon
• Tri-valley and tart cherry germplasm
• Collection at FCRU
• Choosing a sweet cherry planting system
• Protecting sweet cherries from cracking
• Mature management of sweet cherries
• Training and pruning of yingst sweet cherries
• CG Rootstocks
12:00 noon – 2:00 p.m.
• Lunch
2:00 – 3:00 p.m.
• The use of Serenade biofungicides for
• management of apple diseases
• Gala fruit size study
• Managing fungicide resistance in apple
• Stone fruit breeding at Geneva
• Update on internal worm management
• research
• Planting simulation research and cybernetic
• technology in the hands of apple growers
• Sprayer testing: Rising to the challenge of
• EURECAP
• Sprayer technology demonstration

Grape Tour
Wednesday, July 28, 2004
8:00 – 8:30 a.m.
• Registration
8:30 – 10:00 a.m.
• Overview of current research on grape
disease management
• An overview of research on biology and
epidemiology of grape powdery mildew
• Turning off sprays prone to in the grape
• powdery mildew pathogen
• What’s new with downy mildew
• Enhancing populations of beneficial
• miles that help control grape powdery
• mildew
• The development of a lure and trap to
• monitor grape berry moth
• Using Trichogramma steinernae for
• management of grape berry moth
10:15 – 12:00 noon
• Nozzle orientation
• Sprayer technology demonstration
12:00 noon – 2:00 p.m.
• Lunch
2:00 – 3:00 p.m.
• Current viticulture research at the
• Fredonia Vineyard Laboratory
• Placing simulation research and
• cybernetic technology in the hands of
• grape growers
• Winter hardness among New York
• hybrid wine grape varieties and breeding
• program selection
• Measuring root growth and respiration
• in grapes

FOR MORE INFORMATION:
CONTACT NANCY LONG BY CALLING:
315-787-2285 or FAX 1-607-432-2312
ADVANCE REGISTRATION IS
REQUESTED
Please mail this registration form by July 20 to:
Nancy Long, NYS Agricultural Experiment Station
600 W. North Street, Geneva, NY 14456;
or fax your registration to Nancy at:
315-787-2488 by July 20 or register on line at:
http://www.nysaes.cornell.edu/fruit/fieldday2004/index.html

Number of people attending
Name __________________________
Address _______________________
City ______________ State_____ Zip____

All who pre-register will be eligible for door prizes.
Finger Lakes Grape Program
CCE of Yates County
417 Liberty Street
Penn Yan, NY 14527
(315) 536-5134