

## **Title of Project: Leaf removal, Fruit-set, and Harvest Season Cluster Rot**

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### **Objectives:**

- a) Reduce fruit set on small, tight cluster varieties and thus reduce harvest season cluster rot.
- b) Reduce fruit set on large, heavy cluster varieties and thus eliminate the need for post-set crop adjustment.

### **Results:**

1) Year-1 experiments demonstrated that leaf removal in the fruiting zone at trace bloom could reduce % fruit set within a grape cluster in a manner closely related to the leaf area removed on Delaware, Marechal Foch, Seyval Own-root, Seyval-C.3309 and Vignoles.

2) The response was variable with regard to cultivar; Delaware was very sensitive with nearly 100% cluster abortion at maximum leaf area reduction, and Marechal Foch was slightly sensitive with only 20% reduction at the maximum reduction. There was no difference between the 2-Seyval root status conditions. Vignoles was reduced by ~ 30% at the medium area reduction level.

3) The reduction significantly reduced the incidence and extent of harvest season cluster rot in Vignoles and Seyval. Infection levels were low in other varieties. The reduced infection allowed Vignoles to be retained on the vine until the fruit was at 25.7 brix.

4) Year-2 assessment showed a significant increase in the mortality of buds at nodes where leaves had been removed at trace bloom. Live shoots had fewer, smaller clusters suggesting that the loss of leaf function at that node seriously reduced productivity of those canes or spurs if retained at pruning. This raises the question of the efficacy of the practice for varieties of moderate to low value. The ability of the practice to favor the production of high-value dessert wines would seem useful. Similarly, the impact on high-value vinifera cultivars (Chardonnay, Pinot blanc, P. gris and particularly, P. noir) would also seem valuable- if the negative year-2 effects could be accommodated. This effort is proposed for 2003-04.

5) A simple method has been proposed to solve the year-2 effect. It would be to grow fully foliated; non-bearing shoots in a manner appropriate for the training system. For example, Guyot trained (VSP) vines could simply retain 3-5 defruited shoots arising from the head. These would be defruited at the time of thinning. This could only be justified for high value production. However, the ability to retain Pinot noir on vines until desired ripening status is achieved could shift that variety from its current questionable production status to becoming a producer of consistently high color, high quality and high value wines.

### **Communications:**

Was presented at the ASEV/ES meetings in Corning, NY in July 2003. The information is very new. Will share at any meeting to which we are invited. Two research articles are in preparation for the Journal of the American Society for Enology and Viticulture. We consider this work preliminary as we have not evaluated it over a number of years nor on the range on varieties we believe to be of consequence. For that reason we believe caution to be wise.

### **Funding Partnerships:**

This effort has been also supported by the Eastern Viticultural Consortium -\$15,000