

# **Developing Information Transfer Methods to Increase Efficiency, Diversity and Profitability in Bulk Grape Juice Operations**

## **Project Leaders**

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## **Abstract:**

The goal of this project is to develop and deliver educational materials on research-based Vineyard IPM and Production practices that can be accessed at a convenient time determined by the individual grower. Accessing and delivering information electronically has become a standard practice for grape growers in the Lake Erie region of New York State so the use of YouTube ( <http://www.youtube.com/LERGPvids>) for the delivery of short videos on vineyard production practices was a natural fit. Twelve videos have been developed and placed on YouTube with more ‘in the can’ and ready for the finishing touches. Worksheets which allow growers to examine the economic costs and benefits of implementing each practice are also being developed and will be used during the implementation phase of the project.

## **Background and Justification**

The project will address the educational needs of bulk grape (juice and wine) growers of New York and Pennsylvania in maximizing profitability through production efficiency and/or diversification into wine grapes for the small winery market.

There are two audiences that will be reached with this project.

- 1) Bulk juice and wine grape growers who want to remain bulk juice or wine grape growers.
- 2) Bulk juice and wine grape growers who want to diversify their vineyard operation with the addition of wine grapes for the small winery market.

Grapes are ranked second in value of production among fruit crops in both New York and Pennsylvania. Approximately 40,000 acres of grapes are grown by 900 growers in the grape growing regions of New York and northwestern Pennsylvania. Ninety percent of this acreage consists of bulk juice and bulk wine varieties.

Producers of bulk juice and wine grapes have found the market to be volatile over the past 5 years. Using ‘Concord’, the predominate variety as an example, prices have ranged from a high of \$205 to a low of \$145 per ton. According to the Lake Erie Grape Farm Cost Survey 2001 – 2005 (Shaffer and White) the average cost of production per acre is \$1663 with an average yield of 6.4 tons per acre. Using these figures, an average farm would need to receive approximately \$260/ton just to break even. Bulk grape growers in New York and Pennsylvania have typically responded to lower prices by

trying to maximize yields through increased bud number. This can lead to over cropping which can result in high and low crops in successive years as well as denser canopies that affect vine nutrition and water relations as well as insect disease and weed management.

A number of production practices have been developed by Cornell and Penn State researchers and implemented by the more progressive commercial 'Concord' growers. Yield Management, Mechanized Pruning, Mechanized Thinning, Insect and Disease Management and Record Keeping by Block are examples of the topics that will be used for the initial set of three minute videos and worksheets for those who want to remain with bulk varieties but need the information to determine the risk of implementing new practices. Existing growers who consistently make a profit producing 'Concord' and other bulk juice/wine grapes have been identified and the experiences of these growers will be highlighted in the production of educational materials for maximizing production efficiency.

Videos and worksheets will also be developed for existing growers looking to plant more profitable, yet riskier, wine grape varieties for sale to the small wineries in the area. While it may seem obvious that existing growers would have the knowledge necessary to grow any variety of grape, subtle to major differences in wine grape production can be found in Site Selection, Pruning and Training systems, Integrated Pest Management Strategies, Floor Management and Nutrition. This would suggest that some intermediate educational materials would greatly assist growers in determining if a move to a more intensive, higher skill level type of grape production is worth the risk.

Electronic communication has been shown to provide educational opportunities to a diverse audience, and has no time restrictions of when the information can be accessed. Added to the expansive geographical distance extension team members must cover, this makes reaching many of the growers difficult with traditional information transfer methods.

**Objective:**

1. Develop multimedia educational materials that will assist bulk juice grape growers in maximizing profitability through optimizing production efficiency and/or diversification into wine grapes for the small winery market. This information will be used to produce a multimedia manual of Vineyard Production in New York and Pennsylvania.

**Procedures:**

Grape growers and processors will be surveyed to determine the most important production practices they feel help them to achieve profitability in their bulk juice operation as well as what questions they would like to have the answers to prior to planting a wine grape vineyard. The results of these surveys will be used to develop a shooting list for videos and the development of companion economic worksheets. A minimum of 6, 3-minute videos and economic worksheets will be accomplished during each year of the project as well as supporting materials which will be developed as pdf documents.

### **Results and Discussion:**

While this project was partially funded (~25% of requested funding) by the Lake Erie Regional Grape Program, Inc. and New York Wine & Grape Foundation it did not receive additional funding by the Viticulture Consortium Eastern Section and the objectives needed to be scaled back.

This was the first year of a multiple year project so much of the progress to this point has been collecting the video and information needed to put together the products specified in the grant.

Surveys were conducted during the 2008 growing season at weekly Coffee Pot meetings across the Lake Erie Grape Belt as well as twilight meetings and through the weekly electronic newsletter, *The Crop Update* to get grower input on two questions; 1) What are the most important ten production practices you use to assure profitability? and 2) What are the 10 most important things to know before getting into wine grape production? Using the results of these surveys short videos have been produced on the following topics:

- Banded Grape Bug
- Grape Berry Moth
- Scouting
- Pheromone Trap Assembly
- Vineyard Mapping
- Soil Testing
- Petiole Testing
- Crop Thinning and Estimation
- Laser Planting

Downloading problems due to available bandwidth were rectified by posting the videos. These videos can be found on the Lake Erie Regional Grape Program YouTube page at <http://www.youtube.com/LERGPvids>. After numerous problems with downloading speeds due to bandwidth restrictions the project assistant, Amber Rinehardt suggested YouTube as this site was developed specifically for sharing videos on the web.

Video footage has been, or is in the process of being, collected for other topics identified during the survey process: site selection, using weather instruments in a vineyard IPM program, weed management, developing an Vineyard Insect and Disease Management strategy, vineyard vertebrate management and vineyard nutrition.

The vacant business management position with the Lake Erie Regional Grape Extension team was filled in October and has provided another critical aspect to this project. Economic worksheets are being developed to assist growers in determining the potential costs of implementing new production practices as well as track actual costs of implementation so they can be compared to the growers' conventional practices.

In addition to the 3-minute videos, full-length videos of the Lake Erie Industry Field Representative Group seminar series were collected and are in various stages of completion. Seminar topics included: 1) Bud Hardiness and Development by Dr. Martin Goffinet, 2) Low Cost Spray Programs for Low Cost Grapes – Dr. Wayne Wilcox, 3) Weed Management – Rick Dunst, 4) Crop Management – Dr. Terry Bates and 5) Summary of Root Studies in Concord Grapes – Dr. Alan Lakso and Dr. David Eissenstat. Implementation efforts will continue with this project as growers use the videos and worksheets. Potential impacts will be determined during the 2009 growing season.

**Project Location:**

Lake Erie Region of Western New York and Northwestern Pennsylvania.