Contract
UNL Extension Grape Cluster - #18-01-187

Grant Amount
$2,301

Contact
Dr. James Hruskoci
UNL – Extension
College Park
3180 West Highway 34
Grand Island, NE 68801

Issue of Interest
Research conducted at a number of research institutions indicated that early season cluster removal improved grape quality factors of the grapes left on the vine. The impetus behind these studies was the premise that improving grape quality would potentially increase the quality of the wine made from those grapes.

The objective of this study was to:
- Conduct research in Nebraska on grape cultivars commonly grown in the state, to determine if grape quality can be improved by early season selective cluster removal; and
- Determine if other factors, such as total yield, cluster size, and grape size might also be affected.

Ultimately, if wine quality could be increased by using grapes improved by cluster removal, winemakers would likely be able to command a higher (premium) price for wine made from these improved quality grapes. Total revenue collected by winemakers could increase substantially, raising profit margins.

Approach to Problem
A cluster removal study began in Nebraska the summer of 2006 and continued through 2007. Dr. James Hruskoci, with advice from Dr. Paul Read and the help of more than a dozen UNL Master Gardener volunteers, conducted research at the following locations on the following cultivars Miletta Vista Winery (DeChaunac and Frontenac), Cedar Hills Vineyard (DeChaunac and LaCrosse), and at Geo. Spencer Vineyards (Seyval). The research in 2006 involved one cluster removal during mid-June. Research in 2007 studied the effects of two cluster removal periods, one in mid-May, and a second in mid-June. In 2006, 25 treatment vines per cultivar were utilized for a total of 100 samples per location. In 2007, 13 treatment vines per cultivar were used for a total 78 samples per location.

Project Activities:

- Mid-May: Traveled to each of the three vineyards. Randomly marked control vines and conducted the first cluster thinning on the first set of vines.
- Mid-June: Traveled to each of the three vineyards and conducted the second cluster thinning on the designated treatment vines.
- Late August: Traveled to each of the three vineyards. For each of the plots (May treatment, June treatment, and control vines) data obtained included total yield (weight)

of grapes on each vine in the study, count total cluster number. collect 30 grape samples from each vine.

- Late August – Early September: Travel to UNL – Department of Horticulture in Lincoln. A lab analysis was conducted of the 30 grape samples collected during the late August harvest visit.   Due to time constraints, it was possible to only analyze one cultivar per one vineyard location during one trip to Lincoln (it takes a full day, as there are a total of 50 samples to process and analyze per cultivar per vineyard); therefore, five trips to Lincoln were needed.
- Early Fall – Winter. Data was entered into the computer mainframe and statistical analysis of the data was conducted. Subsequently, the data was charted and prepared for a research report of the results.

Goals/Achievement of Goals
The Nebraska Grape and Winery Board approved $2,301 from the Winery and Grape Producer's Promotional Fund to pay for this UNL activity researched commonly grown grape cultivars in Nebraska to determine if grape and wine quality can be improved by early season selective cluster removal. This project will also determine if other factors, such as total yield, cluster size, and grape size, are also affected by cluster removal.

The goals of this project were to:

- Determine which cultivars respond to cluster removal and offer the highest potential for improving grape quality;
- Determine what quality factors are improved; and
- Determine if cluster thinning is an economically feasible practice for grape growers.

The $2,301 partially paid for laboratory supplies and analysis, report expense, and travel costs for project oversight and management.

Results, Conclusions, Lessons Learned
Each of the vines in the study (cluster thinned and control vines) were harvested during September. In addition, samples of 30 grapes were collected from each of the vines in the study. The data collected included total harvest weight, temperature, and total cluster count per vine. Lab analysis was performed on the 30 grape samples to obtain total berry weight to determine average berry size. Additionally, pH, temperature, and titratable acidity were performed on the juice.

Progress According to Outcome Measurements
As this study has one more year before completion, final results are still pending.