



# North Dakota's Grape and Wine Industry

**Information in this document was created at the August 25, 2011 Strategic Planning meeting in Bismarck. Meeting participants included:**

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## STRATEGIC VISION AND DIRECTION PLAN

November 2011



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## PURPOSE

The North Dakota Grape and Wine Program Committee conducted a strategic planning session concerning the North Dakota grape and wine industry on Aug. 25, 2011. This document contains information related to the outcomes of the Aug. 25 meeting. The purpose of this document is to outline a strategic plan for the grape and wine industry in North Dakota.

The vision of the North Dakota grape and wine industry is to expand and enhance the North Dakota grape and wine industry, improve the quality of life for North Dakotans, increase tourism, revitalize rural communities and develop the North Dakota image of good-quality wine with nationally recognized North Dakota grape and wine selections.

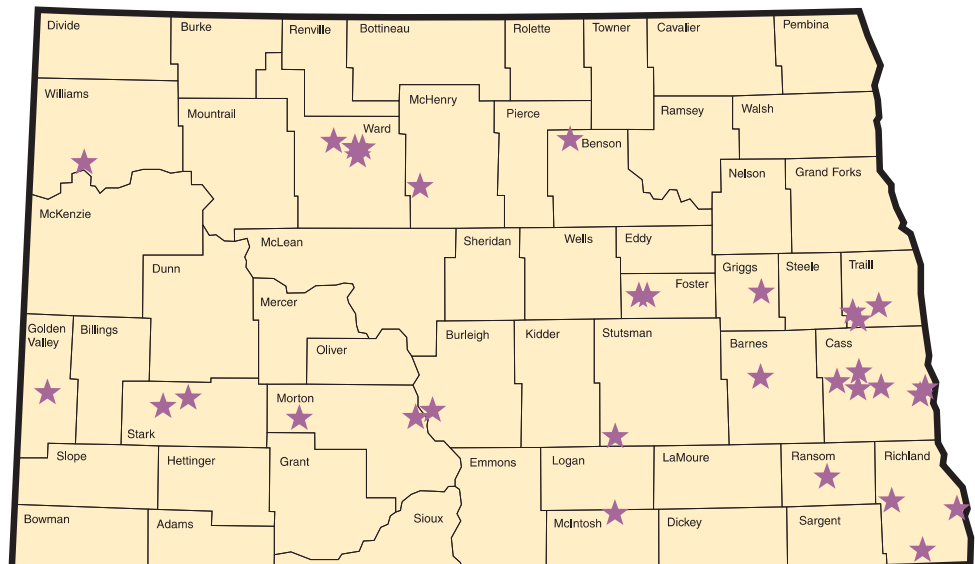
## HISTORICAL PERSPECTIVE

Wild grapes have been growing in the fringe forests along streams in North Dakota for thousands of years. These grapes have been harvested and used for juice and jelly since the settler days. Commercial use of these grapes is not practical because they are not highly productive and the flavor is not conducive to good wine production.

People have grown grapes in North Dakota for years, but only in the last 20 years has grape growing started to become what can be considered a commercial industry. In 2006, the number of growers was increasing, and they saw a need for sharing information. The North Dakota Grape Growers Association (NDGGA) was established with this mission: “to carry out the education, promotion and extension of the art and science of viticulture in North Dakota and surrounding areas, including all agricultural, horticultural and related purposes.” Today, North Dakota has more than 40 vineyards and nine licensed wineries. Since its beginning, the NDGGA has maintained 80 to 100 members annually.

In 2009, the state Legislature established the North Dakota Grape and Wine Program Committee (NDGWPC) to oversee the disposition of \$250,000 for grape and wine research, education and marketing. The NDGWPC employed the NDGGA to handle the accounting for this funding. Funds have been or are being dispersed to North Dakota State University for cultivar research and to NDGGA for educational programs.

**Location of vineyards and wineries in North Dakota.**



## CURRENT SITUATION

### Grape Producers: Commercial vs. Hobby

The main cultivars being grown in North Dakota are the University of Minnesota varieties Frontenac, Frontenac Gris, LaCrescent and Marquette. Another popular variety is Valiant, developed at South Dakota State University. Commercial vineyards, hobby growers and NDSU have dozens of other varieties that are being grown and evaluated in smaller numbers.

North Dakota has two U.S. Department of Agriculture hardiness zones. Much of the area between the South Dakota border and Interstate 94, as well as most of the Red River Valley, falls into Zone 4. The majority of the rest of the state is Zone 3. The difference is the colder minimum winter temperatures that can be expected in Zone 3. Zone 4 areas of North Dakota also happen to get greater accumulations of heat units during the growing season.

Most of the University of Minnesota varieties were developed for Zone 4. So, not only do they have marginal winter hardiness in Zone 3, but they also struggle to get enough heat units to ripen. Growers in North Dakota are looking for a variety that will do well throughout the state.

A substantial volume of grapes can be grown on a relatively small acreage. Depending on spacing, an acre of land can handle 400 to 500 plants. After five years, a mature plant can produce from 10 to 15 pounds of grapes, resulting in 2 to 3.75 tons of grapes per acre. A single plant can produce three to five bottles of wine; an entire acre of grape plants can produce 1,200 to 2,500 bottles of wine. This allows an agribusiness to be developed on a relatively small area.

North Dakota has about 15 commercial vineyards. These are vineyards where the producer intends to sell the grapes to a winery or owns and/or operates a commercial winery that will utilize the grapes produced for his or her own vintage and ultimate sale.

Hobby producers may have as few as a couple of plants to up to an acre or more, but they raise the grapes for their own consumption or sharing with friends and neighbors. Like many gardeners, the hobbyist gains satisfaction from producing good fruit in useable quantities.

### Focus on Business and Farming

North Dakota has a unique strength of combining the best in business with the best in farming. This strategic planning initiative will capitalize on this strength.

On the business side, further development of the North Dakota grape and wine industry will diversify the state's economy. It will provide new employment opportunities for workers and give rural entrepreneurs more options to focus on for business development.

On the farming side, a more mature grape and wine industry will continue to add high-value crops to existing farms and offer more farming diversity. The industry also will make small-acreage farms more viable and offer rural revitalization to areas of the state that need to grow. High-value fruit crop growing, combined with local wine making, also adds a new dimension to farming and business — “coopetition.”

Coopetition simply means the more producers, the better. More local high-value crop and wine production leads to greater public awareness and more local products and less out-of-state fruit and wine consumed. North Dakota's goals in this area include:

- Developing a true cold-hardy grape and wine initiative
- Streamlining laws that allow the grape and wine industry to thrive
- Increasing the number of vineyards and wineries
- Establishing more viable vineyards and wineries
- Having 20 to 25 wineries statewide in by 2026

## Commercial Viability

A vineyard and/or winery can be a secondary income source as well as being a stand-alone business for the proprietor(s). Here is a breakdown of potential costs, rewards and drawbacks of growing grapes as a commercial operation:

### Costs

- Installing a vineyard: \$5,500 to \$7,000 per acre. Vineyard life is 50+ years, but this cost will be amortized over 10 years, or \$550 to \$700 per year.
- Vine maintenance: The labor required to maintain the vines is about five hours per week per acre from May 1 to Oct. 1. Using a cost of \$12 per hour, or \$60 per week, for the 22-week period, labor expenses would total \$1,320 per acre per year. The total yearly cost to operate a one-acre vineyard would be about \$1,800 to \$2,000.

### Production

- With 400 plants per acre producing 10 to 15 pounds per plant, total production can be 4,000 to 6,000 pounds per acre per year.

### Sales Value of Grapes

- Grape prices, like any commodity, can vary, but they have been ranging from 50 to 75 cents per pound when selling to a winery. Therefore, the value of the crop could be from \$2,000 to \$4,500 per acre.

## Drawbacks

Two key differences between growing grapes and grain crops are the grapes' perishability and the timespan from planting to producing a harvestable crop. A grape plant takes three years to start producing fruit and a couple more years to be mature enough to produce a commercially viable amount of fruit for harvest. During that time, a grower continues to invest in trellising, pruning and pest control. The initial investment can be more than \$5,000 per acre. These are upfront costs, so growers need to make good decisions when planning and installing a vineyard.

For a grape producer, the return on investment is relatively low without adding value to the crop. Producing wine and selling to a retail outlet will generate \$13,500 to \$20,250 per acre. Selling wine direct to customers can generate from \$20,250 to \$30,375.

Other commercial opportunities for adding value to the grapes include making jelly or selling the grapes at a farmers market, where the price may be \$2 to \$3 per pound. Thus, the value of selling through a farmers market is \$8,000 to \$18,000 per acre. This estimate is contingent upon the farmers' market being in operation during the grape harvest.

In 2009, more than 1 million gallons of wine were shipped into North Dakota by outside distributors. Less than half of 1 percent of the wine sold in North Dakota was made in the state. Wine consumption nationwide is growing. The opportunity for the growth of North Dakota wineries is tremendous if the wineries were able to distribute their product within the state and throughout the U.S.



## **MARKETING GRAPES, VINEYARDS AND WINERIES.**

The market for grapes is not confined to the commodity itself. The agritourism arena is another marketing opportunity.

Wineries can bring tourists into an area that may be off the beaten path. Wineries provide an opportunity for urban dwellers and out-of-staters to see North Dakota's rural areas. Tourism dollars multiply rapidly.

Vineyards also can be a part of the tourist draw. Tourists want to see where the grapes come from and how they grow.

Another important aspect of marketing the grape and wine industry is developing a signature product or grape for our area. A unique North Dakota grape to market to consumers and/or tourists would be an opportunity for grape growers and wineries alike.

Vineyards and wineries enjoy a direct tie. The vineyards need wineries to use their grapes, and the wineries need grapes to make their wine. A function of the NDGGA should be to help wineries develop and grow. It also should assist the growers in marketing their grapes and establishing high-quality standards for their grape products. Research and training will be necessary to accomplish this goal.

Also, the wineries should be working on an enology project to support quality and product development for their products. (Enology is the study of all aspects of wine and winemaking except vine growing and grape harvesting.)

## **EXPERTISE**

North Dakota has an increasing number of grape growers. The participation at NDGGA functions has shown this to be true. The growers are looking for information to better help them grow, harvest and market or process the grapes they are growing. They are looking for the NDGGA to support their efforts.

The NDGGA offers educational information through hands-on clinics, an annual meeting with training sessions, and tours of vineyards and wineries. Training information is available on the organization's website ([www.ndgga.org](http://www.ndgga.org)). An email program, or listserv, offers question/answer communication. Members maintain and develop many of these educational programs; the organization does not have a directed effort to handle them.

Members are seeking information on a variety of topics, including the type of land that is best for grapes, what variety to plant, how to plant, when to plant, when to prune, how to prune, insecticides, weed control, disease management, trellising, harvesting and processing. This is the same types of information grape growers would want from an NDSU Extension agent anywhere in the state.

The enthusiasm and knowledge of the NDGGA members is great. They are very generous in sharing information. But the information is not readily available to someone outside NDGGA. A more accessible, consistent and reliable source needs to be developed for the grower to get this information.



## LOCALLY GROWN

We like to do things our way in North Dakota. We have pride in these major North Dakota successes of grain and bean farming, sugar beet production and refining, and, of course, our success in the oil industry. In fact, North Dakota already has made a policy decision requiring a majority of the fruit used in winemaking to be state-grown.

Nationally, the wine market is looking for new and local variants of high-quality wine. North Dakota now can capitalize on these desires.

Our goal is to create a high-quality industry. With a focus on quality and local variation, North Dakota can develop a strong brand, eventually producing a nationally recognized wine. Along the way, the state will increase consumption of locally grown and produced wine.

One encouraging factor is that a nationally recognized wine from this region can capitalize on public perception about the state. One example is that a superior grape cultivar could be developed to produce a late-season-harvested ice wine. That type of wine is from grapes that are harvested after the minimum of one seasonal freeze and can be harvested in the snow.

A high-quality wine combining a positive image of North Dakota and unique locally produced wines could be sold at a national or international level. To accomplish that, North Dakota's goals include:

- Creating a high percentage of public awareness of the industry
- Locate wineries throughout the state with a goal of having a winery within a one hour drive from any city in the state. Focus on wineries visible from the highways connecting the larger population centers.
- Adapting the best current grape growing and winemaking methods to our local conditions
- Ensuring that 20 percent of the state's wine sales are from local product

## IMPROVE NORTH DAKOTA'S QUALITY OF LIFE

One thing that sets us apart is we like to get things done, so we propose that North Dakota capture the modern movement to have "hands-on" entertainment. The core of this strategic plan is to get residents more involved in agricultural events. The state's strong backbone of farming makes this a perfect opportunity for rural entrepreneurs such as grape growers and wine makers.

Cultural events, celebrations and weddings are popular special events that bring tourism to a particular farm or winery. Bus tours are and will continue to be popular in the future.

Locally grown fruit also can be sold at farmers markets. Some farmers markets in the U.S. have become tourism events in themselves. North Dakota can develop its own local variations of these opportunities. Examples include:

- Wine trails
- Rural community social events
- Destination tourism — wineries, bed and breakfasts, etc.
- Hands-on experiences — vintage cellars
- Wine sales tied to tourism — sell wine at rest stops and retail establishments
- Improving current production methods by adopting green practices

## RESEARCH AND EDUCATION

Although NDSU has been conducting some grape research, the state's grape growers' tie to the scientific community needs to be enhanced to meet the grape growing industry's goals.

The first goal of the NDGGA is more research on the evaluation of germplasm that is cold-hardy in all areas of North Dakota and make good wine. A second goal is getting training on how to grow grapes to make sure growers receive accurate and consistent information on growing cultivars in North Dakota conditions. A consistent funding source is necessary to achieve these goals.



## PUBLIC POLICY

The NDGGA members would like to have a North Dakota viticulture industry that is recognized for high-quality grapes being grown by experienced, knowledgeable growers.

Programs that NDGGA and North Dakota wineries conducted demonstrate an interest in having a viticulture program in the state. The summer tour for NDGGA in 2011 combined a historical tour of Fort Abercrombie and Fort Ransom with stops at three wineries and three vineyards. Participants were pleased with the tour.

The development of these types of tours should increase awareness of the grape industry in North Dakota as well as increase awareness of historical sites or points of interest in the state.

For the grape-growing industry to grow, the wineries must grow. For the wineries to grow, sales from the winery should not be restricted by distribution laws such as those in North Dakota. Being able to sell directly to retail on/off sale outlets, as well as to restaurants, would be very advantageous for the growth of North Dakota wineries. These types of sales have proven to be very successful in surrounding states, such as Minnesota, South Dakota, Montana and Iowa, as well as 35 additional states. North Dakota legislators must receive and understand this information.

Standards should be developed to make sure the grapes being sold in North Dakota and used in North Dakota wine are of consistently high quality and will produce a high-quality wine or other grape product.

## ACCOMPLISHING GOALS

### Funding

- Initial funding for producer education, marketing and promotion of the grape and wine industry was acquired from the state of North Dakota. A relationship with the State Board of Agricultural Research and Education (SBARE) should be developed in hopes SBARE will place a request on its priority list for state funding to allow the North Dakota Agricultural Experiment Station to continue and expand its grape research.
- Longer term, as the industry develops, a funding mechanism based on grape production or processed products may be implemented to augment the state funding.
- The legislatively designated North Dakota Grape and Wine Program Committee should provide advisory support to research, education and marketing activities.
- A sustainable source of funding needs to be established by the end of the 2013 legislative session.

### Research

- Have NDSU continue to evaluate grape germplasm as it is doing under the direction of Harlene Hatterman-Valenti, high-value crops researcher.
- Encourage NDSU Research Extension Centers to continue testing grape germplasm and production methods.
- Encourage the North Dakota Agricultural Experiment Station to identify cold-hardy high-quality grapes capable of growing in all areas of North Dakota by enhancing efforts to find and evaluate new cultivars.
- The goal is to identify, by 2017, two distinct cultivars that have excellent cold-hardy traits and make excellent wines as produced in North Dakota that excel over the same cultivars grown in other states or regions.
- Implement a long-term program once sustainable funding is available.

### Education

- Develop an educational program through the NDSU Extension Service to assist growers throughout the state in starting vineyards and growing grapes.
- By the end of 2012, have a grape growing education program established and available through the NDSU Extension Service.

### Marketing

- Put in place an executive director for the NDGGA and North Dakota wine industry.
- Explore having a paid position within the NDSU Extension Service serve in this capacity.
- Promote local wineries providing a revitalizing impact for small communities.
- Develop three wine trails that will promote awareness of the industry and create value through agritourism in collaboration with the North Dakota Department of Commerce and the North Dakota Department of Agriculture.
- Promote the awareness of NDSU's and private growers' success in grape and wine production.
  - Have program in place by end of 2012
  - Establish a standards program for North Dakota grapes and wines focused on quality
  - Support the long-term funding requirement for grape cultivar development
- Increase membership in NDGGA.
  - 200 members by the end of 2017
- Increase the number of commercial vineyards.
  - Have 50 vineyards of one acre or more by the end of 2017

## APPENDIX

### Vision data

Responses to the following questions: What do you see in the future for the North Dakota grape and wine industry? What is the purpose of the North Dakota grape and wine industry?

#### Agritourism

Agritourism/the North Dakota wine experience/  
farmers market alternatives  
Promote North Dakota — tourism, quality of life  
Connecting producers and consumers  
Wineries destination

#### Economic Development

Rural revitalization — economically and activities  
Agricultural diversity  
Business and employment opportunities/hobby  
Accessibility/wide availability of North Dakota products  
Diversification  
Rural entrepreneurship  
20 to 25 wineries in 15 years  
20 percent of state wine sales from local product  
Economic opportunity for small farms  
“Coopetition”  
Increase numbers of vineyards and wineries  
Establish viable wineries and vineyards  
Entry point for hobbyist  
Effect on economy  
Profitable small-scale farming  
Revitalize rural communities  
Income for landowners and good wine  
Create economic, social and recreational opportunities for North Dakota citizens  
Expand and evolve through time  
Meet demand for locally produced grape and wine products  
Revitalize small communities  
More producers  
Have profitable wineries and grape growers

#### Governance, policy making

Relaxed wine laws  
Wholesaler/retailer relationship (positive)  
Adopt more friendly wine “laws”  
Education of legislators (government) and public

#### Image

Wine industry — growing and enhancing  
Become a top producer of high-quality wine  
Developing North Dakota image — skills, talents, ethics, product  
Develop brand  
Increase consumption of locally produced wine  
Public perception of industry

Nationally recognized wine from local grapes  
High percentage of public awareness of industry  
Promote green products  
Wine trails  
Rural community social events  
Destination — i.e., wineries, bed and breakfast, wine trails, etc.  
Provide hands-on experiences — i.e., vintage cellars  
Wine sales tied to tourism — sell wine at rest stops  
North Dakota recognized as producer of high quality grape and wine  
Develop our own application  
Wineries visible from the highway

#### Research

Agronomics — informed choices (third-party research and education)  
Large enough to have R&D/sustainable  
Grape breeding/wine production  
High-quality wine  
True cold-hardy grapes  
Education (research) of CCs and XV.M.s (viticulture and oenology)  
Ongoing funding for research and promotion  
Development of regionally adapted varieties  
Re-evaluation of land to grow varieties  
Balance of supply and demand of grapes  
High-quality of output  
What are people liking?

### Grape Growing Goals

Responses to the following question: What are the grape growing goals for the North Dakota grape and wine industry?

#### Funding

- Collaborate with public institution
  - Leverage funds
- Limits on general research programs (nation)
- Acquire needed fiscal support to achieve the goals
- Study Iowa funding mechanisms
- Mechanism to continue funding breeding program (How?)
- Wine/grape “check-off”
- Support to get funding

#### Collaboration

- Collaborate with public institution
  - Leverage funds
  - Replicated plots
    - Management
    - Practices/Techniques
    - Variety Selections

- Establish formal research collaboration with an established/public grape research program(s).
- Like partnership in grape breeding (SK University)

**Public Relations**

- 50 vineyards of one acre or more in five years
- 150 grape growers members in five years
- Establish effective dialogue between grape growers and scientific community to achieve goals
- Promotion and awareness of NDSU's and private growers' success in reaching wine production goals
- Executive director for North Dakota grape and wine industry
- Public relations
  - o Justification
  - o Agritourism

**Grower Education**

- Evaluating (assessing)
  - o Quality
  - o Quantity (sacrifice production for quality)
- Part time Extension grape specialist within five years
- Drift control
- Specialized Extension agent for industry
- Variety selection for today and growing techniques and site selection
- Managing vigor (after variety selection)
- Pest control — insects, disease, weeds, birds
- Updated Extension publications
  - o Recent varieties
  - o Variety descriptions
- Staying connected via blogging, etc.
- Knowing when to harvest

**Developing/Identifying Varieties**

- Research — develop and/or ID varieties
  - o Hardy, disease resistant, productive and high quality
  - o Creates foundation for success establishing solid research program
  - o Shows value and benefit for “many” versus “few”
  - o Attracts others into the industry
- Two reds and two white in field trials within five years
- Development of wine-quality grape suited to all of North Dakota
- Field data from Research Extension Centers — yield, brix

**Wine Production Goals**

Responses to the following question: What are the wine production goals for the North Dakota grape and wine industry?

**Marketing/Education**

- More art than science (need to know the basics of wine making)
  - o Compiling data
- Business management skills
  - o Forms, applying various agencies and records
  - o Significant investment
- Marketing plan for North Dakota wines?
- Plan to deal with supply and demand
- At least two wine trails in five years and five wine trails in 10 years
- Establish viticulture/enology educational program within North Dakota
- Informing visitors and residents of our wine industry
- Wine trails
- Partnering with various organizations — Germans from Russia, etc.
- Tie-in with motor coach tourism, etc.
- Yeast strains
- Basic wine education
- QR codes

**Public Relations**

- Implement more friendly wine laws, including direct-to-retail option by the next legislative session
- Elevate collaboration with state agencies (i.e., Commerce, Agriculture departments, etc.) to market and promote the wine industry
- Wine is a thinking person's drink when consumed in moderation

**Quality Standards**

- Establish North Dakota wine competition within five years
- High-quality wine production (methods)
- Standards of quality
- 25 or more wineries in five years and 40 wineries in 10 years
- Establish principles of a North Dakota brand for wine within five years
- Encourage 10 wineries to enter competitions in five years. Have a nationally recognized wine variety in 10 years.
- Funding to achieve goals

