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STARTING A COMMERCIAL GRAPE VINEYARD IN SOUTH DAKOTA

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Are you thinking of starting your own vineyard? The wine industry in South Dakota has experienced steady growth over the past 10 years, and demand for locally grown, high-quality wine grapes is strong. In addition to the potential market opportunities, some people are attracted to grape growing because they like working outdoors, enjoy working with plants, and enjoy wine. Grapes may be a good alternative crop to traditional agronomic crops, especially on land that is marginal for cultivation. This publication provides a brief overview of the issues you need to consider in determining whether grape growing might be a good fit for you.

WHAT YOU'LL NEED

Whatever your reasons for thinking about starting a grape vineyard, success in grape growing requires expertise in all phases of plant production, pest management, post-harvest handling of fruit, business planning, and marketing. Contrary to the expectations of some prospective growers, growing grapes requires hard work and long hours in the vineyard.

To be successful at grape growing, you'll need to be able to handle financial management, employee management, and marketing. Grape growing requires a large capital investment to cover the cost of land, equipment, planting stock, supplies, and labor.

You'll need to obtain financing, and you should consult your banker or lending agent about details. Some low-interest or guaranteed loans may be available if you qualify as a first-time or disadvantaged farmer, or rural small business; check with your local USDA Rural Development and Farm Service Agency offices. If your experience is limited, you can gain valuable experience by working for a reputable grower. Many well-established growers use seasonal help, especially for pruning and harvesting. This experience is invaluable for establishing your own vineyard.

You'll need to develop a business plan or prospectus. An organized business plan is really a road map to business success, a set of guidelines for operating your vineyard business. And your chance of successfully arranging financing from banks or other lending institutions will be greatly enhanced if you have an organized, comprehensive business plan.

SELECTING A SITE

The key to success in a vineyard operation is consistent production of high-quality grapes of a marketable cultivar, and the surest way to accomplish that is to choose the best site available. Site selection is probably the most important decision a grower will make, especially in the Midwest. There are three primary climatic concerns in site selection: winter temperatures, air movement,

and soil drainage. Cold, harsh winters can result in severe cold injury, and freeze and frost injury can occur when fluctuating temperatures in late winter lead to deacclimation and early bud break. Selecting a good site will greatly increase the chances of successful production, and careful cultivar selection will greatly increase the chance of consistently producing high-quality grapes.

Another factor that should be considered in many areas of the state is the presence of nearby crops or roadsides that will be sprayed with phenoxy-type herbicides, as grapes are very sensitive to these chemicals. Spray drift is a very real hazard, especially if fields are sprayed by airplanes, because the drift can be carried by wind for a mile or more.

SOILS

Grapes are adapted to a wide range of soil types, but grapes perform best in soils with good aeration, loose texture, low to moderate fertility, good internal and surface drainage, and adequate depth (30 to 40 inches). An ideal soil for grapes is a well-drained sandy loam. Soil drainage is critical for successful grape growing. Soils that are consistently wet probably have an impervious subsoil, high water table, or other drainage problems and should be avoided. Root growth is restricted on poorly drained soils, so plant growth and fruit yields are generally low and vine survival is limited to a few years. Installation of drainage tile can greatly improve some sites for production of grapes and other fruit crops, but it can be costly and is not necessarily a substitute for well-drained soils. The USDA Natural Resources Conservation Service can provide advice on dealing with drainage problems and has detailed maps of each county that are helpful in determining the suitability of soils for grape production.

Soils with very high organic matter (5% or greater) are generally unsuitable, as they provide too much nitrogen to the plants, resulting in poor fruit quality and vines that may not harden off properly for winter.

CULTIVAR SELECTION

Most vineyards in South Dakota produce grapes for use as wine, although smaller vineyards may also produce grapes for jams or jellies, or even for direct sale to consumers. There are currently no vineyards producing specifically for table grapes, in part because quality seedless grapes are not reliably cold-hardy. Most vineyards market their grapes directly to wineries as fresh fruit.

Cultivar selection should be based on cultivar adaptation and market demand. Growers planning to sell their grapes to a winery should contact the winery or wineries prior to planting to find out what cultivars they are interested in buying in the

future, as desired cultivars change over time. Winter temperatures in South Dakota limit grape production to hardy hybrid cultivars; the European cultivars are not hardy enough for successful commercial production. There are a variety of hardy cultivars available; in addition to consulting with prospective grape buyers, see recommended cultivars for South Dakota at <http://agbiopubs.sdstate.edu/articles/ExEx6037.pdf>. A beginning producer should select early maturing grape cultivars that have known good cold hardiness. The southern half of the state, with its longer growing season and less damaging winter temperatures, is better suited for grape production; growers in the northern areas will need to be very careful in site selection as well as cultivar selection. Site selection is also more critical for the more winter-tender cultivars.

Before large-scale planting, growers should start with a small planting and observe each cultivar's characteristics and its interaction with the particular site. Except for the cultivar "St. Pepin," all the named cold-hardy cultivars are self-fruitful. The native *Vitis riparia* grape has separate male and female plants.

Vines and cuttings should be purchased from licensed nurseries, both to avoid importing insect and disease problems into South Dakota and to assure that, if the cultivars are patented, they have been legally propagated.

FRUIT QUALITY

Fruit quality is extremely important to the winemaker, and bonuses are often paid for fruit with high quality. In order to produce high-quality fruit, producers must be able to identify and control various grape diseases and insect pests, and protect the fruit from birds and other predators. They must also understand the parameters that dictate quality and must be able to properly manage the crop to produce fruit with desirable quality. The grapes must be harvested when fruit quality is at its highest. It's best to develop a close association with the winemaker and include them in crop management decisions, including picking date.

ECONOMICS

Grape growing can be profitable if production is consistent and price and demand remain high. Variable costs (not including land and equipment expense) are about \$8,000 over a three-year period to bring an acre of grapes into production. Once in production, an acre of grapes should cost about \$1,500–\$2,000 per year to manage and can bring gross returns of \$2,500 to \$5,000 annually. Annual returns depend on yield and price. Yield is related to suitability of the site, the cultivar, and the weather. Yield must be balanced against vine growth for both fruit quality and longevity

of the vine. Price is related to availability, demand, quality, and marketing expertise.

LABOR REQUIREMENTS

The number of employees needed to manage a vineyard will depend on the acreage. One person can handle most of the management for 3 to 5 acres, with help seasonally for pruning and harvest. For larger vineyards, help will be needed for most vineyard management tasks. The vineyard business is inherently a seasonal activity that makes it ideal for seasonal and part-time labor (e.g., migrant workers, students, retirees, etc.). Again, assisting an existing vineyard with routine tasks throughout the year can give a prospective grower a much better idea of the labor requirements they should anticipate.

WHERE TO GO FOR HELP

The best approach to starting in grape growing is to acquire as much knowledge as possible about the grape and wine industry, business management, vineyard management, and marketing. Many resources are available to aid you in this process. Printed publications, Web sites, one-on-one consultations, site visits, working on an existing vineyard, workshops, and conferences are all available educational opportunities.

Starting a commercial vineyard is an exciting and challenging process. It can also be personally and financially rewarding if you take the time and make the effort to learn the business and develop a sound business plan. In other words, you'll be much more likely to achieve success in the vineyard business when you look before you leap.

ADDITIONAL RESOURCES

Viticulture in South Dakota,

<http://sdgrapes.sdstate.edu> – South Dakota State University horticulturists maintain this website with links to a broad collection of resources, selected for their usefulness for South Dakota growers. The site also contains sign-up information for a listserv for South Dakota grape growers.

Vineyard Work Calendar,

<http://agbiopubs.sdstate.edu/articles/FS948.pdf>

Soil Sampling for South Dakota Vineyards,

<http://agbiopubs.sdstate.edu/articles/ExEx6038.pdf>

Midwest Grape Production Guide,

<http://ohioline.osu.edu/b919/index.html>

Adapted from "Starting a Commercial Wine Grape Vineyard" by Bruce Bordelon, Purdue Extension, Purdue University, 2009.



South Dakota
Cooperative Extension Service

Available electronically on the Internet at <http://agbiopubs.sdstate.edu/articles/FS955.pdf>

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