Chapter 1

Introduction

New and current grape growers will find practical information on site appraisal, establishment, and operation of commercial winegrape vineyards in the North Carolina Winegrape Grower's Guide. This publication focuses on production of vinifera and hybrid wine grapes.

We are greatly indebted to Dr. Tony K. Wolf, Director and Professor of Viticulture, Virginia Polytechnic Institute, for his original development of the Mid-Atlantic Winegrape Grower's Guide in 1995, a guide that has proven to be an indispensable resource to anyone interested in learning about grape production in North Carolina. The climates, soils, and growing conditions in Virginia and North Carolina have many similarities, and the guidelines on vineyard site selection, pruning and training, canopy management, and vine nutrition have stood the test of time remarkably well. In this new publication, we have kept intact most of the cultural information presented in the Mid-Atlantic Winegrape Grower's Guide.

The new budget in chapter 2, Costs of Growing Grapes, by Carlos Carpio and Charles Safley, Department of Agriculture and Resource Economics, NC State University, reflects current costs and returns for *vinifera* grapes grown in North Carolina. If you are interested in evaluating the potential of raising winegrapes, and specifically *vinifera* grapes, as an alternative farming enterprise, you can use this new production budget to compare the economic profitability of winegrapes with alternative farm and non-farm investments.

Your analysis will not be complete, however, without careful consideration of the market for winegrapes. Contact your local Cooperative Extension agent for more information about wineries in your area, and current prices being paid for different winegrape varieties. Unless you have a contract from a winery for a variety only that winery wants, it is better to grow varieties that are in demand.

In chapter 3, Choice of Varieties, you will find a great deal of new information on *vinifera*, hybrid, and native American winegrape varieties based on the practical observations of Andy Allen, Extension Viticulturist, NC Cooperative Extension Service (2001-2004). This chapter also includes an up-to-date listing of grapevine suppliers compiled by Amy-Lynn Albertson, Extension Horticulture Agent in Davidson County. Albertson and several other Extension agents in counties with vineyards and wineries have provided invaluable assistance to the entire winegrape industry over the last 2 years since Allen's departure for the Institute for Continental Climate Viticulture and Enology, University of Missouri. Dr. Sara Spayd, a viticulture and wine quality expert from Washington State University, assumed duties of state viticulture specialist with the North Carolina Cooperative Extension Service in March 2006.

The original chapter 4, Vineyard Site Selection, in the Mid-Atlantic Winegrape Grower's Guide, has been greatly expanded to address a critical issue in site selection: damaging spring frosts. A new methodology is introduced to assess the frost risk of potential vineyard sites. The importance of good site selection, as well as careful pruning, training, and canopy management, cannot be underestimated if the goal is to produce consistent, premium quality wine. This chapter will help you better appreciate the importance of other climatic factors, such as extreme summer heat, that can adversely affect grape and wine quality. High daytime temperatures, coupled with high nighttime temperatures, can reduce fruit pigmentation, aroma, and acidity

with certain varieties. New information from a research vineyard in North Carolina's central piedmont illustrates how warmer summer temperatures in this region affect juice pH. With the exception of a lesser known red wine variety, Tannat, the majority of winegrape varieties tested, including seven *vinifera* varieties (and clones), had average juice pH levels that exceeded 3.65 for the 3-year period, 2003 to 2005; a more desirable pH range at harvest for white wine varieties is 3.1 to 3.3, and 3.2 to 3.4 for red wines (Gauntner, 1997). Theses studies sponsored by the NC Grape Council, Inc. (now called the NC Wine and Grape Council), are showing the viticultural merit in evaluating unknown *vinifera* varieties (and hybrids), that can, with good vineyard management, produce well-balanced musts from vines that do not have issues with excess vigor, despite the warm, humid summer weather that characterizes the central piedmont region of North Carolina.

The number of wineries has more than doubled in North Carolina in the last five years, from 21 in 2000 to 53 in 2005. And an important concern raised by Dr. Wolf in 1995 appears to be an even greater issue now. This has to do with the *trend towards selecting locations for vineyards (and associated wineries), more on the basis of favorable demographics than the viticultural suitability of the site for growing grapes.* This is becoming a particularly serious issue in North Carolina as more and more inquiries from people interested in growing *vinifera* grapes are coming from the lower piedmont, an area with excellent demographics. Unfortunately this is a region of the state where the major obstacle to growing *V. vinifera* grapes is Pierce's disease (PD) (*Xylella fastidiosa*). PD is a killer of grapevines that is spread by certain kinds of leafhopper known as sharpshooters.

Appropriately, the newly revised chapter 8, Pest Management, has a new section on Disease Management, written by Turner Sutton, professor and plant pathologist, NC State University, that includes complete information on Pierce's disease. PD is not only an obstacle to growing *vinifera*, but it will also infect hybrid and native American bunch grapes in the warmer climatic conditions found in North Carolina's coastal plain, sandhills, and lower piedmont.

An entirely new section on weed management has also been added to chapter 8. It is written by Wayne Mitchem, Regional Weed Specialist, Fruit Crops, and it provides extensive information on vineyard floor management.

The authors of the new North Carolina Winegrape Grower's Guide welcome and encourage your feedback on this publication. It is a publication that is best used with other sources of information. And, one of the very best ways for your to learn about the ins and outs of grape production, as stated on the NC Wine & Grape Council Web site, www.ncwine.org, is to talk with people already operating vineyards and wineries, as well as to attend important educational programs and trade shows, such as the NC Winegrowers Association's annual meeting. If you do not have a great deal of experience in grape growing and/or winemaking, you can obtain additional training through the Viticulture and Enology curriculum at Surry Community College, which is designed to prepare individuals for various careers in the grape growing and wine making industry (http://www.surry.cc.nc.us/). The Department of Horticultural Science at NC State University offers *General Viticulture*, HS-590A, to students and adult learners on and off campus. For more information on this and other classes, visit http://distance.ncsu.edu/registration/ or http://www.cals.ncsu.edu/hort_sci/.

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Reference

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