

Dennis Aigner and finds via likelihood ratio tests that the translog production function beats the Cobb-Douglas production function. A generalization of the model permits the use of panel data and accommodates time-varying technical efficiency. For the Australian data employed here, it turns out that there are significant technical inefficiencies and evidence of technical change. Most interestingly, the shadow price of water indicates that farmers underutilize water. A quibble: there is an error in Figure 11-3, in that the vertical scale has separate two notches that are marked with the frequency 15. Chapter 12 deals with product assortment and efficiency and relies on the relatively rarely employed data envelopment analysis of Abraham Charnes. Chapter 13 analyzes wine bottling decisions with the aid of a sequential probit model, whereas Chapter 14 is devoted to the export intentions of wineries.

All the chapters deal with important as well as interesting issues, and all are characterized by high levels of technical competence. With the possible exception of Chapter 8, they will all be of interest to econometricians and scholars researching the wine industry, while Chapter 8 should be of prime interest to all who are engaged in rating or grading wines. The editors, Eric Giraud-Héraud and Marie-Claude Pichery, are to be congratulated for having rendered a great service to oenophiles.

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IAN D'AGATA: *Native Wine Grapes of Italy*. University of California Press, Berkeley, 2014, 640 pp., ISBN 978-0-520-27226-2 (hardcover), \$50.

Today a group of roughly two dozen wine grape varieties with widespread appeal and consumer recognition are planted diffusely throughout the wine-growing regions of the world (Anderson, 2014). In fact, fewer than 15 wine grape varieties account for 90% of the varieties grown in major wine-producing regions, such as the United States and France. Only a few of these “international varieties” —such as Sangiovese or Nebbiolo—are native to Italy. The wine from such varieties often can represent the pinnacle of what the fruit of the vine can produce, but the popularity of international varieties often comes at the expense of a region’s indigenous varieties, and it is with this in mind that *Native Wine Grapes of Italy* was written.

Italy has over 377 native and genetically distinct grape varieties—more than France, Spain, and Greece combined. Nearly 30% of the world’s commercially productive wine grape varieties are in Italy. *Native Wine Grapes of Italy* provides grape and wine researchers, growers, producers, merchants, and consumers with a fascinating insight into the existing and potential value of native Italian wine grape varieties

and gives a deeper understanding of the “sometimes crazy but always wonderful country that Italy is,” as described by its author, Ian D’Agata.

Thoroughly researched and accurately reported in depth on native Italian varieties, D’Agata’s *capolavoro* text totals 620 pages and consists of two parts. Part I is relatively short at 25 pages and well worth reading as it introduces two important topics: grape vine identification and the viticultural history of Italy. Part II presents over 400 of Italy’s native and traditional grape varieties. Native varieties are defined as those originating in a specific place and remaining almost exclusively at that location. Traditional varieties are those that are not indigenous but, rather, have been grown in a specific place for several hundred years (typically 300–500) and have been part of that land’s tradition. Cabernet Franc is an example of a traditional but not native Italian variety, since it has been grown in northeastern Italy, particularly the Veneto and Friuli-Venezia-Giulia, for hundreds of years. These two grape variety divisions are useful and far less subjective than divisions such as “classic” or “noble,” which are sometimes used in other works on grape varieties.

In order to understand Italian grape varieties, a subject full of complexities and interwoven relationships, we are first introduced in Part II to about a dozen grape groups and grape families. This gives the reader a better understanding of how the varieties are more or less related. The group and family section is then followed by sections on the major varieties, little-known varieties, and finally variety crosses. For those readers who are most interested in having fun with wine and tasting the many varieties that Italy produces, I suggest going directly to the major variety section. It covers nearly 200 of the varieties that you might find in stores in the United States, or while vacationing in Italy.

The description of each variety is hugely informative and comprehensive. First a summary statement of the variety is given, including the region(s) in which the grape is grown, its National Registry Code, and the color of the grape. Following this summary is a description of alternative names of the grape, the grape’s relationship to other varieties (including descendants from older or ancient varieties), and how the vine and its grape grow (including productivity, vigor, soil and climate preferences, and disease resistance). Each description concludes with a section indicating which wines of the variety to choose and why to choose them. Wine ratings are based on a three-star system according to the producer’s ability to grow and showcase the best qualities of the grape, in the opinion of the author. Often the description of each variety reflects its great potential and also gives a glimpse of how the variety holds genetic, financial, ecological, and social significance for each region in which it is grown.

D’Agata’s unique, erudite, and comprehensive approach reflects his extensive background in not only writing about wine but also in science and medicine. He is one of the world’s best known wine writers and a regular contributor to *Decanter* magazine and the *International Wine Cellar* newsletter. In 2012 he was named Italy’s best wine journalist by the Comitato Grandi Cru. He has lived and studied in Rome and writes with great enthusiasm and insider detail gained from traveling

throughout Italy for 13 years to research the topic for this book. He is trained as a pediatric gastroenterologist, has conducted research in cellular and molecular biology, and has lectured extensively on wine and its relation to culture and health.

In his research, he recognized that many of Italy's native grapes were on the verge of extinction, and this book is an expression of his love for Italy's native grapes and the need to defend Italy's grapevine biodiversity. His identification and description of these varieties and their wonderful qualities allow us to share his appreciation for their place in the world and encourage the propagation of these varieties for future generations.

The Roman saying "Nomen est omen," meaning "The truth lies within the name," must have been heeded by grape growers on the Italian peninsula and islands over the centuries, as can be seen in the names of the varieties that bore them fruit, drink, and sustenance, if not fame and fortune. These names are many and are often confusing but can also be amusing. While fortunately the National Registry of Grape Varieties is the official record listing the names of varieties authorized for cultivation in Italy (currently 461), many if not all of the varieties have more than one name, depending on the region where they are grown, the local dialect, and other factors. Such names are based on factors such as sensory attributes, physical attributes, viticultural behavior, cultivation methods, productivity levels, wine characteristics, perceived region of origin, and the names of people, saints, or other religious references. For example, the most frequently planted variety, Sangiovese, is a reference to the blood of Jupiter. Variety names related to productivity include amusing ones such as Caricalasino (load up the donkey), Stracciacambiale (rip up the promissory note), and Scacciadebito (pay the debt). Sensory-related names include the likes of Tazzelenghe (cuts the tongue) and the zingy and peppery Pulcinculo (fleas up your rear end). Single-letter changes in a name such as Corvino or Corvina can mean entirely different varieties. We owe thanks to D'Agata for having the ability to sort all this "truth in the naming" out for us and present the topic as it is inherently tied to the culture of Italy. As he states, "the fun never ends when identifying Italian grape varieties."

D'Agata has a keen understanding of grapevine genetic research, a field that has greatly improved variety identification over the past two decades. The study of grapevine identity had been based largely on the morphologic characteristics, such as size, shape, and color of the leaf, shoot, cluster, and berries and was often an inaccurate way to identify a variety. Advances in biomolecular markers that reveal DNA sequences specific to single varieties have made possible a much better understanding of grapevine identification and inheritance. These include advances introduced in the 1990s in cellular and molecular biology, such as the polymerase chain reaction (PCR), and identification of microsatellite markers, such as nuclear and chloroplast simple sequence repeats (nSSR and cSSR, respectively). Given the huge number of varieties planted in Italy, with each variety often having a different name by region or dialect, the use of specific genetic markers has shed new light on the true identity of many varieties. His genetic descriptions of each variety, when

available, represent a clear recognition by the author that it is the genetics of the variety that is most important, as it determines the basis for the color, aroma, and taste profiles of a grape variety and its wine far more than any other aspect of terroir.

Native Wine Grapes of Italy informs us of the great biodiversity of grapevines, which have accumulated over the centuries, and how that diversity has diminished and may diminish further. Of the current top 10 varieties in total planting area in Italy, two (Merlot and Chardonnay) are not Italian. From 1970 to 2010, the acreage of widely planted native varieties, such as Barbera and Primitivo, have halved while those of some non-native varieties, such as Chardonnay, Cabernet Sauvignon, and Syrah, have skyrocketed. Even in Italy, where many barriers to replacing vines exist, cultural and otherwise, there is some truth to Oz Clarke's pronouncement that Chardonnay is "the ruthless colonizer and destroyer of the world's vineyards and the world's palates." Despite the many producers who decide to pull out and replant native varieties based on the opinion of some famous, often foreign, wine consultants, there are also many farmers who decide to stick with their varieties despite such opinions. Examples of native varieties once spurned or ignored that are currently expanding in acreage and popularity include Furmint, a red grape variety of Val d'Aosta, and Pecorino, a white grape variety now grown in Abruzzo.

While survival of Italian native varieties is of critical importance to viticulture worldwide, native Italian varieties often do not readily transplant or make successful wines outside Italy. Witness the boom and bust of Sangiovese in California in the 1990s and the difficulty in growing and making great wine from the Nebbiolo grape outside Piedmont. The viticulture of Italy has a particular interest to me as a grape grower of Italian heritage with a vineyard in the United States (the Outer Coastal Plain American Viticultural Area). No doubt my ancestors and those of many other Italian Americans had difficulty in transplanting the native varieties of their region to the United States and often eventually chose to grow native "American" varieties, particularly *Vitis labrusca* varieties, such as Concord or Niagara. Until recently, the only recourse a grower had in choosing a successful variety was to find a variety that was well matched to the soil, climate, diseases and pests, and other circumstances in the region. Improvements in viticulture in areas such as canopy management, plant biology and nutrition, and integrated pest management have greatly helped growers expand the number of varieties that can be successfully grown in regions where it was not possible before. Although several regions in the Eastern United States can successfully grow *Vitis vinifera* varieties, few of the varieties are native to Italy. As our knowledge and abilities in genetics increase, we will likely not have to match a variety to a specific region or regions; rather, we will have the ability to develop characteristics in a variety that may help us to grow it wherever we want to.

Despite the exhaustive work done in writing this book, it was no doubt a labor of love, and, because of his clear, colorful writing style, the reader will share his enthusiasm for native Italian grape varieties. I suggest not trying to read this book cover to

cover in a short period of time, as you may drown in detail. Instead, try dipping in from time to time and read to better experience the pleasure Italian grape varieties can give and enjoy the Italian culture as it can be experienced through its wine varieties. While there are no illustrations apart from color drawings of a voluptuous Nebbiolo cluster on the front jacket cover and the sparse bearing Picolit grapevine on the back jacket cover, the use of illustrations would not have added significant value. Varieties cannot always be readily identified by morphologic depictions, illustrations would have made the book prohibitively expensive, and D'Agata's descriptive writing abilities are superb. There are three tables covering topics such as varieties planted, acreage planted, regions planted, and planting trends. There is an expansive glossary, a 20-page bibliography of scientific literature, a 16-page general index, and a 9-page index of grape varieties. I highly recommend this book to all who are interested in learning about Italian varieties, from beginner to expert.

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DAVIDE GAETA and PAOLA CORSINOVI: *Economics, Governance, and Politics in the Wine Market: European Union Developments*. Palgrave Macmillan, New York, 2014, 253 pp., ISBN 978-1-137-39849-9 (hardcover), \$110.

Wine policy in the European Union (EU) can look back on a history of more than half a century. This was not a period of legislative restraint. Rather, more than 50 years of regulatory activism have left behind a formidable volume of regulations, all drafted in quaint legal idiom, that attempted to remedy both alleged failures of wine markets and the evident failures of earlier regulations. Few economists have a taste for wallowing through such material. Those economists who venture into EU wine policy and legislation often come from Mediterranean countries with large wine industries, and they mostly write in their native languages. An up-to-date English-language account of EU wine policy is therefore welcome.

The two authors of the book are wine business economists. Davide Gaeta is an associate professor who teaches economics of wine firms and wine policy at the University of Verona, Italy, and CEO of Chianti Classico Company. Paola Corsinovi is a wine business consultant in Brussels; she holds a Ph.D. in wine