



The Development of Winegrowing and Oenology in Southern Piedmont and Oltrepò Pavese

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Introduction

This article aims to highlight the changes in winegrowing and wine production in the nineteenth–twentieth centuries, in southern Piedmont and Oltrepò Pavese (Fig. 1). The article analyses the factors underlying the changes and how operators addressed the various problems caused both by socio-economic development and by the environment.

This development embraced both permanence and discontinuity that, over the long term, led to improvement of production techniques based on knowledge of the *terroir*, the quality and character of the wines, as well as on communication targeting market needs (Loubere 1978; Berta and Mainardi 1997, 2015; Mainardi 2004; Gaddo 2013; Maffi 2010, 2012).

This article makes comparison possible, by looking at the evolution of the wine sector, between the various geographical areas of

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Fig. 1 Southern Piedmont and Oltrepò Pavese winegrowing area (Source Author)

production, and also reveals, in the nineteenth century, notable social, economic and legislative differences in the various governments of the peninsula before the Unification of Italy. In Piedmont, which at the time included Oltrepò (1743–1859), for example, already by 1785 the Agricultural Society of Turin had been founded and, in 1798,

training began on winegrowing and the best method of producing and conserving wines. Piedmont's ancient tradition of winegrowing coexisted, from the mid-nineteenth century, alongside an entrepreneurial activity set up by enthusiastic, capable men who embarked on practical projects, based on research and comparison with neighbouring France. These were the men who began large-scale production of special wines, that is, wines obtained with particular oenological techniques, such as Moscato Spumante and Vermouth, already being exported in the last decades of the nineteenth century. With their ability to adapt to technological innovations, to market requirements and to communication, some of these companies are still today of international importance.

The producers of the Langhe region promoted their territory, with its history, art, landscape, traditions and, naturally, its wine. They were among the first internationally to have unity of purpose and to attract tourists from all over the world. In the development of winegrowing, scientific research and publications were important. In nineteenth-century Piedmont there were already publishers of agricultural texts, such as Ottavi of Casale Monferrato. In the twentieth century, the Faculty of Agriculture of Turin University and the Institute of Oenology in Asti were responsible for many publications of significance in the field.

The data gathered enable the analysis of the evolution, through socio-economic changes, including the various crises in the sector, the structure of property, and rural exodus. This period also saw the influx of vine parasites in rapid succession, which led to the enforced evolution of the sector. First came the cryptogams: *Oidium* and *Peronosperas*, then *Phylloxera*, an insect that brought colossal change to the sector, leading to the introduction of *barbatella* (European grafts on American rootstock) and the abandonment of some native varieties.

There were numerous responses to problematic situations, one of the most important, between the nineteenth and twentieth centuries, being the introduction of winegrowers' cooperatives. Their arrival made it easier to control the production of the grapes and the relative volumes of wines. After the First World War, under the Fascist regime, agricultural produce in general underwent stricter inspections, while the national press supplied reliable data on production, as did the ISTAT statistics, published annually.

The Wine Production System—Permanence and Discontinuity

The eighteenth and nineteenth centuries were fundamental for the development of winegrowing in Piedmont, favoured by the region's annexation to Napoleonic France, enabling useful comparison with the various winegrowing regions of France, which led to significant progress for the sector. During the first half of the nineteenth century, alongside the vineyards already established in the hills, winegrowing also took place in the plains where the vines were usually “*married*” with trees such as ash, elm and maple (Gaddo 2013, p. 61; Novello 2004, pp. 83–86).

From the second half of the century, the link between winegrowing and the hillside was consolidated and vines definitively became the principal traditional element for agricultural progress in the hills (Rapetti 1984, pp. 14–15; Baltieri 2004, p. 143).

At the same time, there was an increase in expanse of land given over to vines. In the period under consideration, this phenomenon was caused by several factors: the selection of more resistant plants by the growers, the evolution of consumer tastes, exchanges with neighbouring vineyard areas and addressing the problem of vine diseases (Maffi 2010, pp. 116–121).

From the mid-nineteenth century until the first decade of the twentieth century, in the hills the woods and pastures gave way to increasingly specialized winegrowing. In the Alba area, the vineyards were significantly extended, partly owing to abundant manpower and to the need for increased productivity. The combination of the factors mentioned above represented an important turning point for winegrowing in the province of Cuneo and, for vineyards in the Langhe in particular, a new phase began that led this area to become extremely famous for its clarity and coherence. In general, however, when discussing agriculture in Piedmont, historians normally place the beginning of a significant new phase around the end of the 1870s. This phase is known as the “end of century decline” and appears to have a variety of characteristic elements: changes in economic policy, the birth of the “social question”, variation

in price levels, problems in world agricultural trade and growth of industrialization (Rapetti 1984, pp. 86, 115–130).

In the first decade of the twentieth century, the amount of land given over to vineyards in southern Piedmont and Oltrepò Pavese reached its maximum. Underlying this were various factors, such as the definitive consolidation of small landholdings and the reaction to damage caused by phylloxera, first recorded in the province of Alessandria at Valmadonna in 1898.

This indiscriminate expansion of winegrowing led to an enormous increase in grape production, with a consequent fall in prices, which reached minimum levels from 1906 onwards. In the province of Alessandria, which also includes the Asti area, land given over to vines reached a historic high in 1907 of 181,000 hectares. This led to a notable increase in productivity, which reached its maximum level between 1907 and 1914. Meanwhile, both in southern Piedmont and in Oltrepò, large numbers of wine cooperatives were being opened, to achieve freedom from the control of middlemen, to encourage better quality wine and to organize marketing (Rapetti 2009b, pp. 157–160).

Overproduction brought crisis to the sector, encouraging emigration and, together with the onset of the First World War, provoked great changes in the territory. After the war, in the hills of Piedmont and Oltrepò Pavese, it was necessary to make a fresh start with big investments in repairs and new planting and, with the coming of *barbatella* (European grafts on American rootstock), the foundations were laid for the reconstruction of the vineyards (Berta and Mainardi 1997, pp. 363–370; Maffi 2015, pp. 73–101).

All through the 1920s, however, experimentation and innovation were hindered by lack of dissemination among the winegrowers, while from the 1920s to the 1960s an evolution began that from 1966 continues to the present day (Rapetti 1984, pp. 228–236; Martinelli et al. 2009, p. 71).

One response to the ongoing crisis was a law of 1930, which enabled voluntary consortiums of producers to be set up to promote local wines, identifiable under a common brand. And it was in Piedmont that, in 1932, the first winegrowing consortium in Italy was founded—the Consortium for the Protection of local Moscato d’Asti and Asti Spumante Wines. Meanwhile, however, plummeting prices and phylloxera resulted

in vines being pulled up and the area given over to vines being greatly reduced. This phenomenon was particularly found in the areas of Monferrato and Alessandria (Berta and Mainardi 1997, pp. 363–367).

Nonetheless, a fair number of winegrowers were able to keep the sector intact. And, bearing witness to a certain amount of turmoil, in 1909 the enterprising producers of the municipality of Barolo charged the Agricultural Society of Alba with defining the geographical area in which “Barolo” wine, based on Nebbiolo grapes and named after the village promoting the project, could be produced. Owing to the war, the Society completed its task only in the early 1920s, so in 1934, in the municipality of Barolo, the Consortium was founded to produce that wine (Vacchetto 2004, pp. 25–28).

All the territory analysed was still characterized by small family landholdings, which overcame difficulties through the strength of union and involvement of all available physical resources.

Devaluation at the end of the 1940s was followed by rapid growth from the mid-1950s onwards. This, together with an excess of Barbera vines whose wine was popular only in the northwest, brought sudden and profound changes to the sector: grape prices plummeted, while production costs continued to grow. In addition to the above factors, the majority of small landholdings were unable to sustain the costs of replanting and adapting buildings to the new requirements of work processes and of the market. It is worth noting that in 1950 Piedmont, with 852,168 tonnes (20.40% of the national total), was the Italian region producing the most grapes from single-crop vineyards Berta and Mainardi 1997, pp. 371–374).

Table 1 shows trends in the amount of land under vines (in hectares), whether single crop or intercropping, in three areas (plain, hill and mountain) of Oltrepò Pavese, for 1928, 1935 and 1953.

The table shows that the area of land under vines in Oltrepò Pavese from the period of phylloxera until the early 1950s remained fairly constant, with the majority of vineyards in the hilly zones, steadily increasing from 67.95% in 1928 to 71.93% in 1953. It is worth noting that, in the hills, on average over the three years shown, single-crop vineyards represent 86.14%.

Table 1 Trends in the amount of land under vines in Oltrepò (in hectares)

	Winegrowing	Giuseppe Medici 1928	Davide Zanardi 1935	Davide Zanardi 1953
Plain	Single crop	1195.00	1278.00	433.00
	Intercropping	3361.00	3561.00	3900.00
Hill	Single crop	13,935.00	10,770.00	13,677.00
	Intercropping	1929.00	1986.00	2264.00
Mountain	Single crop	1471.00	2896.00	723.00
	Intercropping	1456.00	317.00	1164.00
Total		23,347.00	20,808.00	22,161.00

Source Luciano Maffi, *Storia di un territorio rurale*, op. cit., p. 147

Table 2 Area of land under vines and grape production in the province of Alessandria

Year	Land given over to single-crop vines (ha)	Grapes produced (tonnes)	Average yield (tonnes/ha)
1935–1940	57,900	1643.00	28.40
1946–1950	55,800	2193.00	39.30
1951–1955	54,700	3238.00	53.30

Source Luciano Maffi, *Storia di un territorio rurale*, op. cit., p. 147

Table 2 shows comprehensive data for the same time period for the province of Alessandria which in 1935 was separated from Asti, thus modifying the geography of winegrowing.

The table shows that the province of Alessandria saw a constant fall in land under vines, from 57,900 to 54,700 hectares (–5.53%); by contrast, there was a significant increase in yield, rising from 28.40 up to 59.30 tonnes/hectare (Rapetti 2009c, pp. 202–205).

The mid-1950s saw the beginning of a phase of uprooting, renewal, consolidation and replanting that substantially changed the area under vines in southern Piedmont. In about thirty years, there was a fall of 57.86% from 142,247 hectares (census data 1961) to 59,936 hectares (census data 1991). The 1991 figures divided by province show: Asti 20,683 hectares, Alessandria 19,154, Cuneo 16,784 and Turin 3314 (Berta and Mainardi 1997, p. 466).

In neighbouring Oltrepò, too, over a longer period, there was a reduction in vineyard area of 34.57%, falling from 22,161 hectares in

Table 3 Change in average landholding size from 1970 to 2000 in Oltrepò

Year	Number of landholdings	Total area Oltrepò	Average size of landholding in hectares
1970	10,075	13,326	1.32
1982	8250	13,818	1.67
1990	6709	14,327	2.13
2000	4147	13,418	3.23

Luciano Maffi, *Storia di un territorio rurale*, op. cit., pp. 302–303

1953 to about 14,500 in 1995, 83.50% of this latter amount representing DOC-registered vineyards. The percentage of vines uprooted was 5% higher than the national average.

From the 50s onwards, the uncertainty of a reasonable income provoked an exodus—especially of young people—from the countryside. This phenomenon involved considerable numbers: in Piedmont in 1951 those employed in agriculture in the region numbered 572,000, which had fallen by 1986 to 154,000. In Oltrepò, too, young people preferred other occupations; however, the reduction of land under vines tended to slow down from the late 70s. Meanwhile, technical and mechanical developments and experimentation in winegrowing encouraged the merging of land (Maffi 2010, pp. 208–212; Berta and Mainardi 1997, p. 466).

Table 3, for Oltrepò Pavese, highlights changes in the territory for area under vines, as against the number of landholdings, from 1970 to 2000.

During the years under consideration, with a total area that was relatively stable, there was a great drop (58.84%) in those employed in the sector, from 10,075 to 4147; by contrast, there was a significant increase in the average landholding size which, in the same period, went from 1.32 to 3.23 hectares, an increase of 244.70%.

Evolution of Vines Cultivated, Their Terroirs and Their Markets

In the first national study of ampelography by Giuseppe Acerbi in 1825, for southern Piedmont there is an important description of vineyards found on the land of Count Lorenzo De Cardenas near Valenza.

Among the most common white grapes: Passeretta bianca, Passeretta grossa, Tokai, Barbsin bianco, Courteis bianco, Terbiau, Malvasia di Spagna, Vernassa, Malvasia bianca rara, Malvasia bianca agglomerata, Mouscatela, Muscatell bianco, Uva greca and Mouscatell di Spagna; black grapes: Lambrusca nera, Fresia, Doulsin raro, Nebbiol nero, Bounarda, Doulsin, Pignou, Belmestia, Barbera nera a Peduncolo rosso, Barbera nera a peduncolo verde, Uva Mora, Mouscatell nero agglomerato, Malvasia nera agglomerata, Malvasia nera piccola, Montepulciano and Malvasia nera oblunga. Of these vines, still in existence are: Cortese, Moscato Bianco and Freisa, Dolcetto, Nebbiolo, Bonarda, Barbera and Malvasia nera (Acerbi 1999, pp. 53–62, 291; Forni 2001, pp. 269–298).

We are indebted to the same author for the first information regarding the vines found in Oltrepò on the farms of Don Giacomo Pecorara and Count Carlo Vistarino in the municipality of Pietra de' Giorgi. Among the most common were, for white grapes: Sgorbera, Malvasia, Mostarino, Trebbiano and Durella; for black grapes: Moradella piccola, Moradella grossa, Nibiolo, Pignolo, Ughetta di Canneto, Uva d'Oro, Sgorbera or Croà, Bersegano, Bonarda, Coda di vacca, Bersmestica, Rossera. Of these vines, still in existence are: Moradella, Nebbiolo, Ughetta di Canneto and Bonarda (Acerbi 1999, pp. 53–62, 291).

At the beginning of the nineteenth century, some businessmen from Piedmont began to take an interest in a vine whose grapes were used as a basis for champagne: Pinot noir. On the arrival of this vine in southern Piedmont and Oltrepò, Giusi Mainardi aptly writes (author's translation): "In the climate of serious rethinking that pervaded nineteenth-century wine growing, the possibility of introducing foreign vines into the local vineyards was also considered. These experiments were mainly carried out by wealthier, more educated people, who were able to read specialist publications and make contact with other enthusiasts, agronomists expert in vines, international growers" (Mainardi 2009, pp. 99–100).

The first attempts to introduce Pinot into Piedmont date from 1820–1840, coinciding with the onset of a dynamism in agriculture that was favoured by constant dealings with winegrowers in nearby France. King Carlo Alberto himself tried to initiate production of Pinot Noir in emulation of French champagne, but the results were unsatisfactory.

But there was one place where the experiment of growing Pinot Noir was successful: “at the end of the investigation it was clear that the only lands in Italy that seemed to have some resemblance to those in France were to be found in Oltrepò Pavese” (author’s translation). So the French vine found, in this territory, a suitable *terroir*, along with the most innovative growing structures (Maffi 2012, pp. 41–44).

A new phase began for the wine sector after the Unification of Italy, with a generation of agriculturalists, businessmen and scholars that, together with the means of dissemination, brought improved competences, enabling the winegrowing and oenology of Piedmont to lead the field, in Italy and abroad (Gaddo 2013, pp. 23–26).

There was an increase, in that period, of mentions of the principal vines in Piedmont and Oltrepò. At that time the Barbera vine was common, both black and white; the latter, local and native to the territory of Alessandria was later abandoned for its excessive susceptibility to oidium. Moscato, already found in the province of Cuneo, was greatly increasing in the zones of Strevi and Canelli (Rapetti 2009a, pp. 55–58).

Meanwhile, in the Langhe, Nebbiolo and Dolcetto were becoming increasingly common. There was also the Barbera vine, introduced from areas nearby. Considering the province of Cuneo as a whole, the most significant vines at the end of the nineteenth century were—for white grapes: Moscato bianco, Favorita, Arneis and Cortese; for black grapes: Barbera, Dolcetto, Freisa and Nebbiolo (Dalmaso et al. 1974, pp. 21–29).

In Oltrepò in March 1872, in an article published in the *Bollettino del Comizio Agrario Vogherese*, Angelo Guffanti mentions that the most common vines in Oltrepò Pavese were, in descending order: Croatina, Ughetta, Barbera, Moradella, Uva rara, Malvasia, Moscato, Artrugo, Cortese and Trebbiano (Maffi 2010, p. 117).

The choice of vines developed, influenced by two cryptogams, in particular oidium, and phylloxera, which favoured the growth of *barbatella*, promoted at the Wine Congress in Casale in 1890 and the variables created by rootstock of American origin (Novello 2004, p. 92).

In the zone of Gavi, province of Alessandria, in 1869 Demaria and Leardi described Cortese as “a native vine, hardy and vigorous in nature, long known and cultivated in the zone” (Gily 2009, pp. 137–139).

Table 4 List of Piedmont vines with black grapes, in 1995

Vines	Area in hectares	%
Barbera	19,313	65.30
Brachetto	424	1.43
Dolcetto	5595	18.92
Freisa	711	2.40
Grignolino	1092	3.69
Malvasia rossa	142	0.48
Nebbiolo	2228	7.53
Other vines—black grapes	69	0.25
Total area—black grapes	29,574	100.00

Source Pierstefano Berta—Giusi Mainardi, *Storia regionale della vite e del vino. Piemonte*, op. cit., p. XXIV

Table 5 List of Piedmont vines with white grapes, found in the territory in 1995

Vines	Area in hectares	%
Arneis	400	3.23
Chardonnay	598	4.83
Cortese	2115	17.08
Favorita	93	0.75
Moscato	9176	74.11
Total area—white grapes	12,382	100.00

Source Pierstefano Berta—Giusi Mainardi, *Storia regionale della vite e del vino. Piemonte*, Milan, Unione italiana vini, 1997, p. XXIV

In southern Piedmont, the ampelographic base of the late nineteenth century and most of the twentieth century remained practically unchanged, for the most important vines, at least. This analysis is based on the provincial registers of DOC and DOCG vineyards for 1995 (see Tables 4 and 5).

The data given show the importance, for southern Piedmont, of black grape vines, which cover 70.49% of the entire area under vines and listed in the DOC and DOCG Registers, while vines of white grapes or for white wine account for the remaining 29.51%. Of significance for the black grape vines was the huge presence (65.30%) of Barbera and the presence of Barbaresco and Barolo among wines based on Nebbiolo. Most important for the white grape vines was Moscato, with 74.11%, and Cortese, with 17.08% of the area analysed; worthy of mention, too,

the undisputed growth of the native Arneis (3.23%), and Chardonnay, the first foreign vine popular with Piedmont winegrowers.

In Oltrepò Pavese, too, the wine situation was also static from the 1920s to the 1960s. In the mid-1950s the average production of grapes was about 1,720,000 tonnes, of which 1,600,000 tonnes were black grapes and only 120,000 tonnes white. Barbera, with 860,000 tonnes, accounted for 50% of total production and 53.75% of black grape production. Next came Croatina with 420,000 tonnes, Uva Rara with 110,000 tonnes and other less important grapes. Among the white grapes or grapes for white wine were recorded 50,000 tonnes of Moscato, 25,000 of Pinot noir, 16,000 of Riesling, 10,000 of Cortese and other less important varieties (Zanardi 1958, pp. 68–150).

In a few years, Oltrepò Pavese began reconverting the ampelography of its territory. If we compare Zanardi's information for the 1950s with the 1981 table, it is clear that within 25 years, in Oltrepò Pavese, a phase of evolution had begun that favoured more new vineyards with white grapes or grapes for white wine. For 1955 production in hectolitres can be quantified as 93% of black grapes and only 7% of white. By 1981 the situation has changed and can be quantified in hectares, with 84.34% of the area under black grapes and 19.66% under white grapes. The greatest fall in investments was seen by Barbera, which, from 50% of total production previously, fell to 39.98% of land area; by contrast, Pinot Noir saw considerable growth, from 25,000 hectolitres in 1955 to 1,534 hectares in 1981, for an estimated 100,000 hectolitres of wine (Failla 1988, p. 177).

Table 6 shows that the most important vines accounted for no less than 92.11% of all vines registered. The process of evolution begun in the 70s continues at a good pace and shows Barbera continuing to fall, while Pinot Noir takes over. Croatina also declined considerably, but this should be considered as temporary, for a Bonarda DOC was becoming popular on the market, a sparkling wine made from Croatina grapes, prompting in a few years new plantings of this vine, which is currently in first place in the territory.

Another factor of the development of winegrowing was that of the information transfer that facilitated the evolution of systems of training and pruning. In fact, an important turning point in ways of training

Table 6 List of the most important vines found in Oltrepò Pavese in 1981

Vines	Area in hectares	%
Barbera	2677,71	26.65
Pinot Nero	2127,30	21.17
Croatina	2006,71	19.97
Riesling	1776,84	17.58
Moscato	676,98	6.74
Other Vines	782,22	7.89
Total area	10,047,76	100.00

Source Maffi, *Storia di un territorio rurale*, op. cit

and pruning occurred in 1861 when Giovanni Boschiero, an oenologist from Asti, introduced the French “*Guyot*” system, named after its founder. This method was first adopted in La Galleria, near Asti, in a model vineyard, and then spread more widely, both in its original French form and with variations and improvements aimed at adapting it to the habits and attitudes of the winegrowers (Ghisleni 1961, p. 147).

At first, experimentation of the new system found few supporters and, in the reports of the jury at the International Exposition of Vienna in 1873, it is clear how little the importance of the *terroir* was understood by the majority of Piedmont’s winegrowers. The jurists also refer to the irrationality of vineyard cultivation, but devote space to signs of improvement seen in recent years with the new technologies. In Giovanni Boschiero’s report we also read considerations about the potential of winegrowing that reveal numerous problems and tend to incentivize winegrowing in the hills (Balbo Bertone di Sambuy 1873, pp. 22–23; Boschiero 1873, pp. 123–126).

Boschiero himself insists on the *terroir*, favouring the vines better suited to the terrain and the climate, and concludes his report with a series of facts about the latest systems of vineyard organization, choice of vines for planting and training methods (Boschiero 1879, pp. 61–64; Gay Eynard and Bovio 2004, pp. 345–346).

It was in the last twenty years of the nineteenth century that some positive results began to be seen of technical progress in winegrowing, especially from a theoretical and experimental perspective, less so, regarding widespread diffusion of the innovations. The Guyot training method,

also-called “*alla francese*”, which trained the vines along steel wires, began to spread and at the end of the nineteenth century this system was adopted almost unanimously in the Langhe (Maffi 2010, pp. 34–37).

In the 1830s winegrowing almost entirely converted to the training and pruning system of Guyot which today remains the most widespread. In the 1960s and 1970s, in some areas, other ways of training were used, such as: “*Casarsa*” a curtain of freely trailing shoots, with considerable savings in management of the growing plant and “*Cordone Speronato Basso*” a permanent low branch, taken to a height of 80–100 cm, on which four or five spurs are left. This form of training and pruning was well suited to vines such as Barbera, Merlot, Pinot Noir and Riesling (Donna and Villa 1988, pp. 219–227).

Technology Transfer in Winemaking: The French Model—“Champagne” and “Spumante”

In the first half of the nineteenth century in Piedmont it became evident that sparkling wines, also more difficult to make, were easily sold at high prices. The origins of spumante in Piedmont may be traced to 1839, when Professor Milano declared that “*the grapes with which are made sparkling wines are Gris Doré, Pinnau and they can be made also with other grapes. It is essential that they be well ripened. The above species greatly resemble Piedmont Nebbiolo: the Italians could imitate the wines of Champagne, and with a little practice equal them. With a friend of mine we have made and drunk them in one of the main hotels of Turin, and they were found to be rather good. They had all the exterior of the wines of Champagne, but I believe they might have been a little more delicate. But the first tastings are never perfect*” (author’s translation). In the period immediately following the Unification of Italy, the new, national market pushed wine companies, too, towards commercial development. Although the wine industry of Piedmont had good potential, it still had difficulty in finding a secure path towards export markets.

The early international Expositions were an important point of encounter and encouragement for the world of sparkling wines, too, which had not yet reached the desired quality levels.

During the great fair in Vienna in 1873, oenologist Giovanni Boschiero expressly declared that “*the few Italian sparkling wines were found to be inferior to those of France, Germany and Austria, although it is recognised that the raw materials is not inferior in Italy*” (Berta 2004, pp. 364–367) (author’s translation).

Following the Paris International Exposition of 1878, Marquis Sambuy noted in his report that at the event a clear improvement had been found in the quality of Piedmont wine production saying, however, that for the sparkling wines, the technique of second fermentation was still lacking (Ubigli and Borsa 2004, pp. 290–291).

Among the founders of the Italian Sparkling Wine Industry may be cited: Giovanni Boschiero, Tommaso Arrigo, Arnaldo Strucchi and Carlo Gancia, Alberto Contratto, Carlo Mensio and the directors of the Royal Wine Research Institute of Asti, Francesco Koenig, Mario Zicchini and Federico Martinotti. One of the undisputed fathers of Piedmont spumante was Giovanni Boschiero (Berta 2004, pp. 369–373).

Meanwhile, encouraged by Carlo Gancia, in the 1850s the estate of counts Giorgi di Vistarino planted the Pinot Noir vine, in Scurapasso valley in the province of Pavia, with the aim of producing Italian champagne. At Rocca de’ Giorgi, the real Italian story of classic, French-style spumante began. A few years later, Domenico Mazza di Codevilla followed the same path; to him, we also owe the introduction of a personalized bottle, especially pressurized for spumante (Maffi 2012, pp. 44–46).

At the beginning of the twentieth century, in Casteggio, S.V.I.C. (Italian winemaking company of Casteggio) was founded by Agostino Guardamagna, Pietro Riccadonna di Broni, Angelo Ballabio, Mario Otero and Raffaello Sernagiotto known as Ello di Casteggio. Unfortunately, their adventure was short-lived owing to the events of the war. In Oltrepò Pavese, between the 70s and 80s, thanks also to some great businessmen from Piedmont, Bosca, Cinzano, Contratto, Fontanafredda, Gancia, Martini e Rossi and Riccadonna (known as the “Seven Sisters of Spumante”), the classic spumante of Oltrepò Pavese was finally affirmed, under the description of Oltrepò Pavese Pinot Noir Spumante, both classic method and Martinotti method (Maffi and Nosvelli 2006, pp. 74–75; Bolfo and Bozzini 1983, pp. 70–71, 125–145).

An analysis of the world of spumante in Piedmont cannot fail to give special mention to Moscato d'Asti for its character and uniqueness. This wine acquired considerable importance, both qualitative and economic, for the area under consideration. Initially the wine was named Moscato di Canelli, later becoming Moscato d'Asti, a denomination that was recognized and consecrated by law. Production of re-fermented spumante in bottles began from Moscato around 1870. Carlo Gancia, after brief experiences in the local winemaking sector, having spent from 1848 to 1850 in Reims, on his return to Piedmont settled in Chivasso where he began his business. In 1865 he rented a winery in Canelli that in 1889 became his company headquarters. In that period, with his business partner, oenologist Arnaldo Strucchi, he began producing sparkling sweet red wines and a spumante "*uso Champagne*". Around 1880 his company began making Moscato di Canelli with the method of secondary fermentation in the bottle. For that reason it was called "*Moscato—Champagne*" and required technical skill and great attention. To make the process easier, to the Moscato must was often added 10–20% of dry white wines such as Cortese or Pinot (Berta 2004, pp. 369–373; Bolfo and Bozzini 1983, pp. 88–93; Ratti 1895, p. 18).

Asti Spumante was mostly dominated by large companies from Turin that had set up business in the Asti area. Its commercial rise, between the end of the nineteenth century and the first fifteen years of the twentieth, encountered few obstacles (Lozato-Giotart 1988, pp. 246–249).

Selling Wine and the Development of the Wine Industry

Evolution and development had to follow market requirements. At the beginning of the nineteenth century, Giovanni Secondo De Canis, a historian from Asti, in his *Corografia astigiana* described the excellent grape varieties of Moscatella, Passeretta and Malvasia Bianca, remarking upon the good wines obtained from them, which were judged to be delicious by all the well-to-do inhabitants of Piedmont. He also adds "the people of Asti who derive great advantage from them are very

careful to supply them to all the towns of Piedmont, not only, but foreign towns too, despatching them through the great centres of Pavia and Milan” (Gaddo 2013, p. 44; Massi 1967, pp. 21–23) (author’s translation).

Later, Lombardy and Venice curtailed trade relations and duties were excessive, particularly after 1818. Most of the wine production in Piedmont and Oltrepò was seriously affected (Maffi 2012, pp. 55–56).

With Carlo Alberto of Savoy (1831), institutional activity directly influenced the area of economics and in the 1830s free trade was much debated, and steps were taken to liberalize imports and exports (Baltieri 2004, pp. 137–138). In 1833, this trade policy favoured much of Piedmont’s production going to Milan, ruled by the Austrians. In fact, the Austrian government had lowered customs duties on Piedmont wines imported in territories under Austrian control, in Lombardy-Venice and in Emilia (Johnson 2012, pp. 630–635).

In Piedmont until the early 1840s there was much economic activism and development; the new Civil Code (1837) and the Code of Trade (1842) were passed.

Subsequently, however, in the mid-1840s, the markets contracted to regional dimensions and customs barriers became more severe. The low volume of sales, especially abroad, led to a fall in agricultural prices and the prices of wine were particularly hard hit. The duty on wines sent from Piedmont to Lombardy-Venice went from 9.10 to 21.45 Milan liras per hectolitre. The wine crisis had serious repercussions on wine production in Piedmont, about two-thirds of which was directed to markets in Lombardy. This led the average price of wine to drop by about one-third on the domestic market.

Despite the 1846–1847 crisis, savings banks and other credit institutions were being founded, which facilitated notable investments in agriculture. Under the Cavour administration, wine exports acquired a certain importance, with an average annual growth of about 18.60% between 1852 and 1858.

It should be noted that, at that time, railways and roads had been built in the territory, which assisted in trading with Lombardy-Venice and with a wider market. In the 1850s, for example, in Oltrepò Pavese, most wine was produced in the hills (75.53%), with only 21.47% being

grown in the plain. The latter was destined almost entirely for local consumption while the former, more highly prized, was grown for the markets of the plain, but also for export (Massi 1967, pp. 27–31).

The fiscal policy of the first post-Unification governments had further negative effects on the organization of wine businesses. Considered as one of the most serious consequences was “having removed from many the will to unite to improve production and thereby address foreign competition” (author’s translation). This focus on cooperation as an important support for developing the wine industry was the occasion of debate at all the wine congresses, which were convinced that this was the road to follow (Trova 2000, pp. 805–806).

In Canelli, in the province of Alessandria, special *Moscato* were produced which, under the denomination of *Moscato uso Canelli*, were chiefly exported to France. *Moscato appassito*, meanwhile, was mainly produced in the areas of Acqui and Asti, in the province of Alessandria, and was quite a successful export product, especially to the Americas.

Salvatore Mondini writes of a special sparkling wine, local to the region, Moscato, whose average annual production was calculated at about 100,000 hectolitres, divided among the provinces of Alessandria and Cuneo, and exported to the Americas, France, Switzerland and Belgium (Mondini 1899, pp. 31–42).

Before 1895 about 148,00 tonnes (about 109,000 hectolitres) of Moscato were produced. Of this, about 30,000 hectolitres were destined for sparkling wine. By 1895 almost the entire production was chiefly made into spumante and there was talk of the considerable request “*from foreign countries for the sweet, perfumed and sparkling white wine, by now known in the trade under the names of Moscato d’Asti or Moscato di Canelli*” (author’s translation).

In the last decade of the nineteenth century, wine consumption in the towns was greatly reduced. There was significant consumption in Turin, which maintained about 168 litres of wine per year per inhabitant; Genoa consumed 141 litres; while Milan showed a certain fall, dropping to 98 litres (Mondini 1899, pp. 269–270).

A fall in domestic consumption and the difficulty of creating new markets should be seen in connection with the process of division of landholdings in the hills. This was a negative factor for farming, owing to

Table 7 Production of grapes and wine in Piedmont from 1870 to 1905

Year	Piedmont		Alessandria		% Alessandria over Piedmont grapes
	Tonnes of grapes	Tonnes of wine	Tonnes of grapes	Tonnes of wine	
1870–1874	4,191,000	2,766,000	1,440,000	994,000	34.30
1876–1881	0	0	934,000	624,000	0.00
1890–1894	5,741,000	3,789,000	3,826,000	2,551,000	66.60
1901–1905	6,874,000	4,537,000	3,820,000	2,522,000	55.60

Source Vittorio Rapetti, *Uomini, Collina e Vigneto in Piemonte*, op. cit., p. 92

structural problems connected with productivity, to the efficient use of resources, to farm organization, to the economics of management, and to the possibility of investing in land improvements or cultural transformations. It was these conditions that tended to push the small hill farm into a state of auto-consumption, from which the hill farmers were not yet detached, either in material or cultural terms (Rapetti 1984, pp. 79–81).

Table 7 shows the production of grapes and wine in Piedmont and in the province of Alessandria from 1870 to 1905 (five-yearly averages in 100 kg and hectolitres).

The table highlights the constant increase in production of grapes and wines, deriving from the great expansion of areas under vines in the region that can be identified across almost all of the area analysed.

The wine crisis lasted until the 1830s and the average price of red wine fell by 40–45%, worsening with the onset of the First World War and phylloxera (see Tables 8 and 9).

The situation deteriorated further after 1932, owing to a continuing fall in domestic consumption and to protective measures by many of the importing countries. After 1936 the prices of grapes and wines fell to a historic low. In Monferrato, for example, wines were bought at an average price of 75 liras per hectolitre, against the 190 liras of 1928. Even the more valuable grapes like Moscato did not avoid this serious crisis of wine in Piedmont and Oltrepò, as their market price in Canelli fell from 148.42 liras/100 kg in 1928 to 78.58 in 1934 (Berta and Mainardi 1997, pp. 355–367; Martinelli et al. 2009, p. 71).

Table 8 Average prices of grapes per 100 kg on the markets of Asti and Casale between 1880 and 1920 (index numbers of average prices, in liras fixed 1913)

YEAR	CASALE	ASTI	ASTI
	Common grapes	Common grapes	Barbera
1880–1885 average	121	122	125
1886–1890 average	171	121	123
1891–1895 average	84	82	84
1896–1900 average	103	101	98
1901–1905 average	96	91	93
1906–1910 average	79	84	75
1911–1915 average	108	0	0
1916–1920 average	113	0	0

Source Vittorio Rapetti, *Uomini, Collina e Vigneto in Piemonte*, op. cit., p. 128

Table 9 Prices of some grapes on the market of Asti between 1881 and 1910 (five-yearly averages in cash liras, per 100 kg)

Products	1881–1885	1886–1890	1891–1895	1896–1900	1901–1905	1906–1910
Common grapes	29.20	28.90	19.60	24.10	21.80	20.00
Barbera grapes	38.40	37.90	25.80	30.00	28.60	23.40

Source Vittorio Rapetti, *Uomini, Collina e Vigneto in Piemonte*, op. cit., p. 89

After the war, only the wines of Asti continued to grow, particularly Moscato, encouraged by large firms that had set up in the area: Fratelli Cora in Costigliole, Francesco Cinzano in S.Stefano Belbo and S.Vittoria d'Alba, Martini e Rossi in Montechiaro d'Asti and, later, in Pessione, Fratelli Beccaro in Acqui, Contratto and Alessandro Zoppa in Canelli, Baldi in Strevi, Pistone, Soria and Taricco in Asti, Calissano in Alba and Bosca and Riccadonna in Canelli (Lozato-Giotart 1988, pp. 262–264; Ratti 1895, pp. 57–59).

In 1982 the area under white Moscato grew to 5530 hectares; the rise of Asti Spumante was constant, reaching in that decade 50 million bottles (Bolfo and Bozzini 1983, p. 93; Lozato-Giotart 1988, p. 258).

Despite the trend, in the 1980s, of reducing the amount of land under vines in Piedmont, white Moscato continued to grow, by 1988

covering 9000 hectares in single-crop cultivation. This meant a production of about 70 million bottles which, for the period, represented 50% of DOC Piedmont wine sold in bottles (Cirio 1988, pp. 22–23).

A few years later, in 1994, there were 9040 hectares producing Moscato grapes. In the same year, about 2,500,000 bottles of Moscato d'Asti were sold while sales of Asti Spumante were about 85,000,000 bottles, 76% of which were exported. These sales were influenced by the introduction of the DOC denominations, proposed by Senator Paolo Desana of Casale Monferrato, which were made law in 1963. Between 1966 and 1970, the wines of Piedmont and Oltrepò were awarded this denomination (Berta and Mainardi 1997, pp. 388–390; Maffi 2010, pp. 158–160, 177–207).

From the 70s onwards, southern Piedmont brought its wine industries to the attention of the world, which played a major part in disseminating the region's image and became fundamental for export. Turnover of Piedmont wines sold for export, in quantitative terms, was about 4.4% of the national total. The purely commercial focus of the large groups and the above-mentioned figures include both wines made from local grapes, with particular reference to Asti and Asti Spumante, and also products derived from grapes, must and wines purchased outside the territory.

It should be noted that, at the same time, in southern Piedmont, excellent winegrowing was being carried on by farm businesses, which undertook their own marketing both in Italy and abroad through channels specializing in the sale of quality wines. Barolo and Barbaresco, without doubt, were the leaders, together with Asti Spumante, and other regional wines such as: of the red wines, Barbera, Dolcetto, Freisa and Nebbiolo; of the white, Arneis and Cortese.

In Oltrepò Pavese, wine sales remained tied to a market chiefly spread across the regions of northwest Italy, with a sales network that often targeted the end consumer. This territory was hindered by various factors, including excessive subdivision of holdings, resulting in many grapes being sent to the cooperative wineries from where, apart from La Versa, wine was sold in bulk to the big Piedmont industries or to wine dealers in the north-west.

Conclusion

This study reveals how winegrowers, affected by agricultural, cultural and social events, and supported by illuminated local players, were able to adapt to the various requirements of the market. From the mid-nineteenth century, the winegrowers became the protagonists, including in contacts with neighbouring France, and they introduced more vine breeding and pruning systems, aimed at holding down costs and at improving the quantity and quality of their production.

Those involved in the development of winegrowing and winemaking in Piedmont became more aware of the productive possibilities of the hills and of the importance of *terroir* in identifying for each habitat its predisposition for hosting the best-suited vines.

Undoubtedly worthy of note was the formation of human capital, in fact, the foundation in 1881 of the School of Wine Growing and Oenology in Alba was an important moment for the sector. A few years later in Voghera in 1895 the Royal Agricultural Technical School was inaugurated. Culture and experimentation were also at the service of new requirements, such as: the codification of local wines; the fight against cryptogams and phylloxera; the solving of market problems caused by overproduction; the opening of cooperative wineries.

Notwithstanding the difficulties arising in the twentieth century, connected to problems of market and of wars, the sector revealed signs of development, thanks to competent local producers, trade associations and regional and national agricultural policies. The distinct character of products such as Barolo, Barbaresco, Cortese di Gavi, Arneis, Bonarda, Asti Spumante and Spumanti of Oltrepò Pavese was recognized at home and abroad in trade journals, and alongside the wines, wine tourism and wine-and-food products acquired great importance.

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