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coordinamento prof. Attilio Scienza

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The Oltrepò Pavese: viticultural, oenological, and economic aspects

THE EVOLUTION OF VITICULTURE IN THE OLTREPÒ PAVESE: OLD AND NEW GRAPE VARIETIES

O. Failla

Istituto di Coltivazioni Arboree, Facoltà di Agraria, Università di Milano

Current viticulture in the Oltrepò Pavese, as shown in Table 1, is focused on the cultivation of 9 grape varieties. Two, “Barbera” and “Croatina”, cover approximately two-thirds of the surface area under vines. “Riesling Italico” and “Pinot Noir” cover a smaller area. These are followed by: “white Muscat”, “Uva Rara”, “Pinot Grigio”, “Malvasia” and “Cortese”.

Table 1 – Principal grape varieties cultivated in the Oltrepò Pavese (data from 1981).

	Ha	%
Barbera	7,212	39.98
Croatina	4,942	27.39
Uva Rara	720	3.99
Riesling Italico	1,619	8.98
Pinot Noir	1,534	8.5
Pinot Grigio	452	2.51
Muscat	825	4.57
Malvasia	206	1.14
Cortese	185	1.03
Others	345	1.91
TOTAL	18,041	100

Alongside these 9 principal grape varieties, there are many others that, however, cover such a small area that the data are negligible (Table 2).

Table 2 – Minor grape varieties registered in the Province of Pavia in 1982 (Source: ISTAT – Italian National Institute of Statistics).

10-100 Ha
Bonarda Piemontese, Biancarne, Bosco, Clinton, Dolcetto, Freisa, Isabella, Lambrusco di Alessandria, Merlot, Müller Thurgau, Nebbiolo, Pinot Bianco, Riesling Renano, Trebbiano Toscano, Verdea, Vespolina
1-10 Ha
Albana, Albarola, Aleatico, Alicante, Ancellotta, Arneis, Bacò, Bombino bianco, Bonamico, Cannonau, Carignano, Colombana near, Corvina veronese, Favorita, Fortana, Garganega, Grechetto, Greco Bianco, Greco di Tufo, Grignolino, Lambruschi, Molinara, Montepulciano, Montù, Ortrugo, Prunesta, Prosecco, Raboso, Ribolla gialla, Sangiovese grosso, Sangiovese piccolo, Schiava lombarda, Timorasso, Tocai, Trebbiani, Vermentino
Less than 1 Ha
Abbuoto, Aglianico, Albana near, Ansonica, Avana, Avarengo, Bellone, Bianchetta, Biancoletta, Bovara, Bracciola, Brachetto, Cabernet francese, Cabernet sauvignon, Cagnolari, Catarratto, Casanese, Cilieggiolo, Cocciola, Coda di Volpe, Colorino, Corvinone, Durella, Empibotte, Erbaluce, Falanghina, Fiano, Fogarina, Forostera,

Francaidda, Gamay, Girò, Greco nero, Gropello, Incrocio Terzi, Maiolica, Mammolo, Marzemino, Mazzese, Mocassino, Molinara, Monica, Montonico, Negroamaro, Nerello mascalese, Neretta cuneese, Pavana, Petit rouge, Pignola, Primitivo, Rondinella, Rossara, Sauvignon, Schiava grigia, Seyve Villard, Sylvaner verde, Syrah, Tintora, Turca, Verdea, Verdello, Verdoschia, Vermentino, Vernaccia, Vespaiola, others.

It is not easy to reconstruct, even roughly, the varietal evolution of viticulture in the Oltrepò Pavese. In fact, not only do we not have enough information from the past, but we also do not even have an accurate study of the varietal assortment currently cultivated.

Vines were already being cultivated in northwestern Italy in ancient times. The Paleoligurian populations had already begun primitive cultivation of grapevines before the Roman colonization of "Cisalpine" Liguria (2nd and 3rd centuries B.C.) under the influence of the Greek colony in Marseille (founded in 600 B.C). It was the knowledge of wine that the Paleoligurians had learnt from the Greek colonies that encouraged them to cultivate grapevines.

It is likely that the first grapevines cultivated in northwestern Italy were the result of domestication of plants of wild grapevines. The Paleoligurians chose the most productive plants of spontaneous grapevines that were more suitable for vinification and used them for their first cultivations.

These first cultivated grapevines were simple to grow, bearing only female flowers, preferred a damp location, and did not require pruning. They had tiny grape clusters with a few small round grape berries. The grapes never reached high sugar content and were always acidic. They had a strong color and were extremely tannic, even though some grapevines possibly gave white grape berries. The wine produced from these grapes had low alcohol levels and was very rough.

The trade agreements established between the Greeks in Marseille and the Paleoligurians meant that Greek viticulture also spread to the ancient Ligurian lands.

Already at that time, in the Greek world, viticulture had reached technical levels that were in many aspects comparable to those today. The ancient Greek grape varieties had more notable characteristics than the wild grapevines of northern Italy. This was due to both their different origins and the fact that they had been domesticated much earlier. For the most part, they were grape varieties with hermaphrodite flowers, i.e. with both female and male organs. This meant without a doubt that they gave higher yields than wild grapevines. They had bigger grape clusters that set better, with bigger grape berries that had higher sugar content and lower acid content. The Greek grape varieties were more resistant to drought and also responded well to pruning. The good wines produced were easy to store and often had intense aromas and perfumes. However, alongside these excellent characteristics, the exotic grape varieties did not easily adapt. The Paleoligurians, still new to grape growing, were certainly not capable of getting the best out of these sophisticated eastern grape varieties. But it was precisely the union of the Greek grape varieties with the newly domesticated local ones that resulted in the first "grape varieties" of northwestern Italy.

The reproduction from seed must have been widespread practice in the Paleoligurian viticulture. Without a doubt the grape growers preferred those plants born from the crossbreeding between local grapevines and Greek grape varieties that had the positive characteristics of each. In fact, these were hermaphrodite plants with large grape clusters and grape berries, well suited to pedoclimatic conditions, capable of responding to the agronomic techniques used and producing good wine.

This fusion between the genetic inheritance of the wild grapevines and the eastern grape varieties resulting from the combination of Greek civilization with that of the Paleoligurians involved all northwestern Italy and remained undisturbed by the numerous Gallic invasions up until the Roman conquest.

In fact, also the Celts contributed to the birth of the grape varieties of northwestern Italy.

The result of this selection of spontaneous crossbreeds was the differentiation of a population of cultivated grapevines. In this context, there was huge variability, which ranged from plants more similar to the wild grapevine to those more similar to Greek grape varieties.

The Roman conquest and all its consequences helped formulate the ampelographic inheritance of the Oltrepò Pavese.

Many grape varieties appeared, some of which acquired great importance.

Until the second half of the 19th century, the basic ampelographic inheritance of the Oltrepò Pavese was the result of a constant selection process carried out by grape growers on that heterogeneous population of grapevines born from the spontaneous crossbreeding of the ancient Greek grape varieties with the local wild grapevines, and from some important grape varieties introduced from other regions.

A description of the result of this painstaking selection process and the introduction of grape varieties can be found in the dossier n. 18 of the Ampelographic Bulletin published in 1884 by the Ministry of Agriculture, Industry and Commerce. This lengthy dossier (379 pages) is part of an even bigger first modern Italian ampelography that was the result of an important project carried out by special provincial committees coordinated by a central committee chaired by Count Giuseppe di Rovasenda.

The Ampelographic Committee of the Oltrepò Pavese, chaired by Carlo Giulietti, a lawyer from Voghera, registered and described the grape varieties cultivated in the entire Province.

Tables 3 and 4 list the grape varieties registered by the Provincial Ampelographic Committee in the administrative districts of Voghera and Bobbio into which most of the Oltrepò Pavese was at that time subdivided.

Table 3 – Red grape varieties registered in the Oltrepò Pavese in 1884.

N.	Grape variety	Cultivated in town councils	Highly cultivated in town councils
1	Moradella	72	61
2	Ughetta	52	37
3	Croatina	48	28
4	Vermiglio	38	25
5	Croà	29	23
6	Barbera	61	23
7	Nebbiolo (1)	60	20
8	Moretto (2)	32	18
9	Toppia	23	19
10	Barbisino (3)	53	11
11	Dora o D'Oro	31	13
12	Pignolo	31	10
13	Dolcetto	16	12
14	Bonarda (4)	34	7
15	Uva Rara	24	5
16	Crova	27	6
17	Grignolino	9	6
18	Crovarino	7	4
19	Rossarone	11	6
20	Rossera	19	6
21	Schiavo	13	2
22	Aleatico	26	3
23	Malvasia nera	15	2
24	Colombana	10	6
25	Gattinera	11	3
26	Nebbiolone	10	2
27	Corbera	8	3
28	Parma	7	4
29	Vermione	6	3
30	Slarina	6	2
31	Mostarino	4	3
32	Bossolera	3	3
33	Balsamina	5	2
34	Calora	11	1
35	Maccaferro	9	1
36	Brianzotto	8	1
37	Lambrusca	5	1
38	Fresia	5	1
39	Pinot Noir	4	1
40	Piacentina	2	1
41	Sciocchera	2	2
42	Sellero	1	1
43	Cassina	1	1
44	Cioclare	1	1
45	Battistina	1	1
46	Basgano	35	
47	Moscato r.	26	
48	Pissadella	14	
49	Tintorino	14	
50	Americana	12	
51	Monferrina	10	
52	Passerina	7	
53	Rossà	7	

54	Tokai	6
55	Bermestica	6
56	Porchera	5

Little cultivated in 4 town councils

57	Cornagera
58	Montepulciano
59	Rat
60	Bordeaux

Little cultivated in 3 town councils

61	S. Anna
62	Borgogna
63	Frossera
64	Barolo
65	Rossarino
66	Scora
67	Ugone

Little cultivated in 2 town councils

68	Durone
69	Gamay
70	Lacrima
71	Mammola
72	Martellana
73	Carolone
74	Mora
75	Moradellone
76	Neretto
77	Rosato
78	Petazzola
79	Senza seme
80	Spanna

Little cultivated in 1 town council

81	Anrè
82	Aramone
83	Barbarossa
84	Vbeina
85	Blak Hambourg
86	Blona n.
87	Brachetto
88	Bruschetta
89	Cardellina
90	Casalingo
91	Chasselas
92	Cioccolona
93	Cornacchia
94	Dordolina
95	Duraguscia
96	Fuella
97	Gamborosso
98	Grigia
99	Grimaldi
100	Missiroli
101	Monterobbio
102	Montuplica

- 103 Napoletana
- 104 Ovada
- 105 Paolina
- 106 Parona
- 107 Pissapolo
- 108 Sermione
- 109 Tomasa
- 110 Travagliana
- 111 Vacca
- 112 Valpolicella
- 113 Verdesa r.
- 114 Verdot
- 115 Vermietta
- 116 Vit. Bacher
- 117 Uccellina
- 118 Zanè

(1)=Dolcetto; (2)=Lambrusca di Alessandria; (3)=Grignolino; (4)=Croatina.

Table 4 – White grape varieties registered in the Oltrepò Pavese in 1884.

N.	Grape variety	Cultivated in town councils	Highly cultivated in town councils
1	Trebbiano	67	42
2	Malvasia	64	22
3	Moscato	60	19
4	Trebbiano	26	18
5	Cortese	27	14
6	Verdea	33	13
7	Mostarino	28	13
8	Grè	15	7
9	Altrugo	13	8
10	Vernaccia	9	4
11	Timorasso	9	4
12	Bianca	4	4
13	Lissora	6	2
14	Durone	2	2
15	Lugliatica	31	1
16	Cagnera	14	1
17	Molinera	7	1
18	Melera	6	1
19	Carola	3	1
20	Durone	2	1
21	Lecco	2	1
22	Forminiga	2	1
23	Vernassione	2	1
24	Brandolera	1	1
25	Euregeat	1	1
26	Gattinera	1	1
27	Francina	1	1
28	Godine	1	1
29	Vernassino	1	1
30	S. Maria	17	
31	Nebbiola	11	
32	Durasa	10	
33	Galla	8	
34	Zoppa	11	
35	Zibibbo	9	
36	Bermestica	8	

37	Cornetta		5
38	Vernasso		5
39	Terra Promessa	5	5

Little cultivated in 3 town councils

40	Donna
41	Occhiolina
42	Sarmsà
43	Sardegna

Little cultivated in 2 town councils

44	Albarola
45	S. Anna b.
46	Barbisino
47	Basgano b.
48	Bianchetta
49	Blona n.
50	Ciolina
51	Grassa
52	Lacinata
53	Madonna
54	Piatta
55	Prugna
56	Regina
57	Settembrina

Little cultivated in 1 town council

58	Alicante
59	Arlecchina
60	Balestrera
61	Barabesa
62	Barbassese
63	Battistina
64	Bordeaux
65	Cella
66	Champagne
67	Chasselas
68	Cioclare
69	Cioccolona
70	Citronino
71	Cojona
72	Colombana
73	Erbaluce
74	Erbcalon
75	Foranese
76	Greca
77	Grenaccia
78	Innominata
79	Lindnera
80	Liverdun
81	Longa
82	Maccaferro
83	Malaga
84	Malingre
85	Melona
86	Mienna
87	Mondina
88	Montagnola

89	Manna
90	Noè
91	Passerina
92	Pasqua
93	Pedra
94	Pinot b.
95	Pizzutella
96	Poltrona
97	Pomata
98	Pomm
99	Ponza
100	Via del Reno
101	San Rocco
102	Roccolina
103	Senza Seme
104	Verdesa r.
105	Verdot
106	Vertigera
107	Vezzosina

Tables 3 and 4 show the number of town councils in which, at the time of the study, each grape variety was cultivated and those in which the individual varieties were more widespread. It can be seen that a total of 225 grape varieties were recorded of which only approximately 30 are widespread. A critical review of the work of the Ampelographic Committee of the Province of Pavia and of these tables makes us realize that the conclusions are not clear. This is because some grape varieties have more than one name (synonymy), while in other cases one name is used for more than one grape variety (homonymy), not only in the area of different town councils but even in the same area of jurisdiction. But the biggest problem lies in the fact that the grape varieties that were so widespread were extremely heterogeneous and, therefore, this is more evident for the local grape varieties. These were the result of a selection process carried out over the centuries on the population of grapevines derived from spontaneous crossbreeding between wild grapevines and eastern grapevines. From these, some “grape variety-populations” or “polyclonal grape varieties” developed. However, the differences between them were not defined and their characteristics varied from place to place. This was due to the different pressures of selection that had been applied, by chance or by choice, by the grape growers. Furthermore, the different ampelographic tradition and sensitivity of the grape growers led them to use a nomenclature that was to a greater or lesser extent detailed in its definition of the different forms of “grape variety-population” and the distinct “grape variety-populations”.

The situation is very different for those grape varieties introduced in the Oltrepò, which, precisely because of their different origin, demonstrated less variability, while at the same time leading to the use of homonyms and synonyms.

At the end of the 19th century, among the grape varieties producing colored grapes, “Moradella” and “Ughetta” were most widespread across the area and had the most intense cultivation. Giulietti describes the Province of Pavia as the “province of Moradella and Ughetta”. Other important grape varieties were: “Vermiglio”, “Croatina”, “Croà”, “Barbera”, “Moretto”, “Toppia”, “Barbisino”, “Dora”, “Dolcetto” and “Pignolo”.

These grape varieties, however, had different characteristics. In fact, “Moradella” together with “Vermiglio” and “Croà” made up a single extremely heterogeneous “grape variety population” within which there was a wide range of types that in turn led to the use of a complex and often contradictory nomenclature. The same Ampelographic Committee described distinct “Moradellas”: hard, soft, double cluster, the “gentile”, the “mezzanella”, the large, the type with a green grape-

stalk, with a red stalk, the type from Voghera, the type from Casteggio, the hard and the soft type from Rovescala, the type from Montesegale, from Torre Albera, from Montalto (one with white grape-berry and one with red grape-berry).

In addition, while in some areas of the Oltrepò Pavese a distinction was made between “Moradella”, “Croà” and “Vermiglio”, in others no such distinction was made. The Ampelographic Committee decided not to “consider as distinguishing features the quality of the vine-shoot or cane, of the grape-stalk and of the grape clusters, the dimensions and the form of the grape berries”. For example: “Moradellas” with red stalks are classified as “Vermiglio”; “Moradellas” with compact clusters are classified as “Croà”; all the other “Moradellas” are classified as “Common Moradellas”. This heterogeneous “grape variety-population” was considered capable of refined, abundant and constant yields. It had medium shooting and late flowering. In Casteggio, it usually flowered between 14th and 19th June. It had good vigor and tri- or penta-lobed leaves, although lobe indentations were not particularly pronounced. The medium-sized clusters were straggly (“Common Moradellas”) or compact (“Croà Moradellas”) with green or red grape-stalks (“Vermiglio Moradellas”). Grape-berries vary between round to oblong with a thick and intensely colored skin. Maturation is late. It was not very often vinified on its own, but was normally blended with “Croatina” and “Ughetta”.

In fact, the basic characteristics, the huge variability of the genetic characters, the extension and the intensity of the cultivation makes the “Moradella-Croà-Vermiglio” the most important local “grape variety-population”) of the Oltrepò Pavese.

The other “grape variety-populations” that are widely cultivated in the Oltrepò Pavese and that can be considered local to the area are “Croatina”, “Ughetta”, “Toppia”, “Dora” and “Pignolo”.

However, in contrast to “Moradella”, “Croatina” and “Ughetta” show less variability and have more highly valued agronomic and enological characteristics.

“Croatina”, often also called “Bonarda”, was praised for its elegance, yield and resistance to powdery mildew, characteristics for which it was considered superior also to “Ughetta”, that was in itself judged to be an excellent grape variety.

“Ughetta” and “Croatina” are the result of a careful and precise selection process, perhaps carried out on the same local Oltrepò Pavese population; this has meant that some valuable genetic characters have been consolidated. Thanks to this, in contrast to “Moradella”, these two grape varieties have survived the post-Phylloxera re-establishment.

The Ampelographic Committee does not provide much information on the “Toppia”, “Dora” and “Pignolo” grape varieties. These were considered to be of little enological value and more suitable for table wine for domestic consumption. Giulietti considers these to be grape varieties that had been cultivated in the Oltrepò Pavese since ancient times.

“Barbera” was considered of equal importance to these grape varieties. This is a grape variety of undoubted Piedmontese origin. At the time of the first ampelographic census, in the Oltrepò Pavese, it enjoyed the unconditional and universal favor of the local grape growers. It is difficult to have a precise idea as to when “Barbera” was first introduced in the Oltrepò Pavese. In any case, we know that by the last decades of the 19th century its cultivation was more and more widespread.

The Oltrepò Pavese varietal platform of colored grape varieties was completed by a group from Piedmont: “Grignolino” (also known in the Oltrepò Pavese as “Barbisino” and “Monferrina”); “Dolcetto” (mistakenly also called “Nebbiolo”); “Moretto” or “Lambrusco di Alessandria”; “Uva Rara” (although possibly originating itself from the Oltrepò Pavese).

Among white grape varieties, the most widely cultivated was “Trebbiano”, followed by “Malvasia”, “Muscat”, “Trebbianino”, “Cortese”, “Verdea” and “Mostarino”. The dominating presence of the “Trebbianos” is not surprising. In fact, these are ancient grape varieties already known in Roman times when they were widely cultivated throughout central and northwestern Italy. It is, therefore,

possible that these grape varieties could have been cultivated in the Oltrepò Pavese since ancient times. Also “Muscat” was already widespread in northern Italy at that time, perhaps through the Greek colony in Marseille. In fact, Plinio the Old (23-79 A.D.) talks about it as a wine that was widely cultivated in Tyrrhenia.

In contrast, the “Malvasias” started to spread in Italy and probably also in the Oltrepò Pavese at the time of the Crusades. The “Malvasias” were introduced via the international trading routes, first as wine and later as a grape variety, after the time when the Venetians held Crete (1204-1669).

“Cortese” is almost certainly of Piedmontese origin. At the time of the census, it was not much cultivated in the Oltrepò Pavese although, in spite of this, it had already gained a certain importance. “Verdea” is another traditional white grape variety of the Oltrepò Pavese. It was consumed as table grapes but was also often made into wine.

Finally, “Mostarino” was a grape variety that was probably part of the “Trebbianos” family.

Giulietti presents a detailed ampelographic picture and describes a highly dynamic situation, dominated by the widespread cultivation of “Barbera”.

The guiding logic that led the grape growers of the Oltrepò Pavese to transform their varietal platform was the attempt to improve, at the same time, both their qualitative and their quantitative production standards.

The wide variability and the mediocre average characteristics of “grape varieties-population” “Moradella-Croà-Vermiglio”, “Pignolo”, “Dora”, “Toppia”, led to them being abandoned. In contrast, among local grape varieties, “Croatina” and “Ughetta” (the latter, however, only in some areas) can hold their ground with “Barbera”, precisely because their agronomic and enological characteristics had been improved. Also “Grignolino” and “Dolcetto” had to take second place to “Barbera” in the new vineyards.

This varietal renewal was accelerated by the arrival of powdery and downy mildew, and completed with the post-Phylloxera re-establishment. Table 5 clearly shows the extent of the improvement in quality from the introduction of “Barbera” and also justifies the reason for which “Croatina” and “Ughetta” were not abandoned.

Table 5 – Comparison between sugar levels and acidity of some grape varieties in some localities of the Oltrepò Pavese registered in 1883.

Locality	Farm	Grape variety	Sugar %	Acidity %
Casteggio	Giovanni Truffi	Moradella	18	8
		Uva Rara	20	7
		Barbera	21	14
Corvino	Paolo Cornaro	Croà	19	10
		Croatina	20	7
		Ughetta	22	10
		Dora	16	11
Casteggio	Carlo Giuliotti	Dora	18	11
		Ughetta	18	8
		Vermiglio	17	10
		Croatina	19	18
Oliva Gessi	Abramo Debenedetti	Moretto	18	10
		Dora	17	14
		Barbera	20	11
		Moradella	18	14
		Ughetta	23	7
		Croatina	22	6
Rovescala	Angelo Guffanti	Dora	18	9
		Pignolo	19	6
		Barbera	22	9
		Croà	19	8
		Croatina	22	6
		Vermiglio	23	6

The post-Phylloxera re-establishment of the Oltrepò Pavese grape varieties confirmed the definitive abandonment of “Moradella” and of other local grape varieties. It also reduced the diffusion of “Ughetta” (better known today as “Vespolina”) and confirmed the definitive success of “Barbera” and “Croatina”.

Since then, the most important ampelographic events have been the introduction of the “Pinots” and “Riesling Italic”. The work on clonal selection and plant health was begun in the mid-1950s. The agronomic and enological characteristics of the “Pinots” and of the “Rieslings” together with the economic and market stimulus that sustained their introduction are dealt with elsewhere in this book.

The work on clonal selection and plant health has made the Oltrepò Pavese a “pioneer” region for this technique of genetic improvement.

The need for an accurate clonal selection and adoption of appropriate plant health strategies is the response to the necessity to multiply, in the context of each grape variety, only those plants with quality agronomic and enological characteristics and that are also not affected by viruses or virus-like particles.

The variability of each grape variety is accentuated to a greater or lesser degree. The technique of clonal selection isolates those plants that are the best genetically and each of these becomes the

ancestor cultivar of another clone. Plant health studies must also be carried out to identify and eliminate (excluding the plant or restoring it to health) all those affected by viruses.

In the 1950s, the Istituto di Patologia Vegetale of the Università di Milano, in collaboration with the “Fondazione Gallini” of Voghera, began work on clonal selection in the Oltrepò Pavese. By the early 1970s, this resulted in the first virus-free clones.

The work on clonal selection and plant health received fresh stimulus in the 1970s with the set up of a project funded by the Consiglio Nazionale delle Ricerche. The Istituto di Coltivazioni Arboree of the Università di Milano also took part in the project.

This project is now also part of an experimental program for viticulture in Lombardy run by the Assessorato all’Agricoltura of the Region of Lombardy.

The results of what is by now 30 years of work are summarized in Table 6.

Table 6 – Results of the selection process carried out on the wine grape varieties in the Oltrepò Pavese (June 1982).

Cultivar	n. of vines under study	n. of pre-selected biotypes	n. of virus-free biotypes	n. of already approved clones	n. of clones compared	n. of approvable clones
Barbera	5000	245	26*	4	4	1
Croatina	1000	64	33	3	4	1
Uva Rara	600	27	6	1	2	1
Pinot Noir	300	8	2		2	1
Cortese	2000	26	10		2	1
Riesling Ital.	400	10	4		3	3
Riesling Ren.	200	8	5		3	3
Moscato b.	4000	160	3*			
Malvasia	2000	70	4*			
Ughetta (Vespolina)	800	33	13			

*not definitive results

As can be seen from data presented so far, the ampelographic inheritance of the Oltrepò Pavese has been created and developed in two ways: 1) the introduction of grape varieties from other regions near to or relatively near to the area; 2) the on site selection of both local grape variety-populations and those newly introduced.

This strategy is being carried forward today. In fact, it is sufficient to consider the recent introduction of “Chardonnay”, and the work on clonal selection and plant health involving all the main grape varieties cultivated in the Oltrepò Pavese.

Genetic improvement through crossbreeding is an effective strategy to renew varietal assortment and this has given excellent results.

The Istituto di Coltivazioni Arboree of the Università di Milano has recently set up a program of genetic improvement through crossbreeding for the Oltrepò Pavese funded by the Provincial government in Pavia. The program aims to set up a range of new grape varieties that, in the environment of this area, combine good productive characteristics and high quality enological value. Genetic improvement through crossbreeding combines in a single grape variety the quality

characteristics of distinct grape varieties.

The Oltrepò Pavese is a region suitable for viticulture thanks to its orographic, pedological and climatic characteristics. The prestige and progress made here in this sector are, however, mainly determined by the grape varieties that are cultivated.

Grape variety and environment must be combined in order to realize all their potential. This is the reason why, for centuries, grape growers in this area have undertaken the demanding and risky job of selecting and introducing grape varieties.

In the past, this work was carried out exclusively by the grape growers themselves, who selected the best forms from among local grape varieties and experimented with other grape varieties well-known elsewhere.

In the Oltrepò Pavese, after the Second World War and in recent years, these activities have in part been regulated by clonal selection, as discussed above.

The Istituto di Coltivazioni Arboree of the Università di Milano has, for some years, undertaken, in collaboration with the Centro Nazionale delle Ricerche, the Region of Lombardy, the Province of Pavia, the “Fondazione Gallini” and numerous grape growers, a range of activities aimed at further organizing the choice of grape varieties.

The main points of this program are:

- identify, preserve and study the old grape varieties of the Oltrepò Pavese (Table 7);
- implement clonal selection of the main grape varieties of the Oltrepò Pavese (Table 8);
- collect interesting grape varieties to study their behavior and suitability for a possible widespread cultivation in the Oltrepò Pavese (Table 9);
- work on genetic improvement through crossbreeding.

Table 7 – Rare grape varieties identified in the Oltrepò Pavese.

Grape variety	Farm	Position of the grape variety
Moretto	Canobbio G. Franco	Isolated row
Pignola	Canobbio G. Franco	Isolated vine
Nebbiolo	Canobbio G. Franco	Isolated row
Uva della Cascina I	Sala Michele	Isolated vine
Croà Rosso I	Sala Michele	Isolated vine
Croà Rosso II	Bruggi Armando	Isolated vine
Moradella	Bellani Mario	Isolated vine
Croatina Bianca	Guarnone Renato	Small vineyard
Timoraccio	Cereghini Aldo	Isolated vine
Colombaia Bianca	Cereghini Aldo	Isolated vine
Uva della Cascina II	Cereghini Aldo	Isolated row

Table 8 – Sites for clonal selection established in the Oltrepò Pavese.

Farm	Town council	Grape varieties
Riccagioia	Torrazza Coste	Barbera, Croatina, Uva Rara, Pinot Noir, Cortese, Riesling Italico, Riesling Renano, Muscat, Malvasia. Ughetta
San Giorgio	S. Giuletta	Pinot Noir, Pinot Grigio, Chardonnay
Quaquarini	Broni	Pinot Noir
Pozzi	Volpara	Pinot Noir, Chardonnay, Pinot Grigio
Scarani	Cigognola	Chardonnay, Pinot Nero, Meunier, Riesling Renano, Pinot Grigio
Brega	Montù Beccaria	Pinot Nero, Chardonnay, Pinot Grigio
Vercesi	Rovescala	Croatina
Savi	Rovescala	Croatina
Scotti	S. Maria della Versa	Pinot Noir
Denari	S. Maria della Versa	Pinot Noir
Piaggi	Volpara	Pinot Noir
Faravelli	S. Maria della Versa	Pinot Noir, Pinot Grigio, Chardonnay, Meunier

Table 9 – Grape variety collections set up in the Oltrepò Pavese in collaboration with the Istituto di Coltivazioni Arboree.

Farm	Town council	Origin of the grape varieties
Riccagioia	Torrazza Coste	Italian, French, German, Portuguese, Greek, Spanish, American, Swiss, ancient grape varieties of the Oltrepò Pavese, rootstocks
Brega	Montù Beccaria	Italian, French, German
Beltrami Orlandi Orsella Faravelli	S. Maria della Versa Montù Beccaria Canevino S. Maria della Versa	Italian, French, German Euro-american German hybrids
Scotti-Scarabelli	S. Maria della Versa	Asian, Italian, French, German
S. Giorgio	S. Giuletta	Clones of French grape varieties

Preservation of the old varieties, besides their undeniable historical value, is essential in order to

maintain all those characteristics of adaptability that these grape varieties undoubtedly possess and that could be enhanced by genetic improvement through crossbreeding.

The work on clonal selection and plant health is the indispensable tool to maintain and raise the quality profile of the grape varieties of the Oltrepò Pavese. This work also allows clones with different characteristics (aroma, yield, adaptability, etc.) to be created from the same grape variety.

It is essential to create collections of grape varieties both to support the programs of genetic improvement and to provide material to study the behavior of grape varieties not cultivated locally.

Genetic improvement through crossbreeding is the way forward to ensure that viticulture in the Oltrepò Pavese remains in step with European grape growing. It is a long and challenging road, but one that could give excellent results, both with respect to improving yield and with regards to quality and pest control.

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