



ARNALDO CAPRAI

Viticolture in Montefalco

Arnaldo Caprai is the **acknowledged leader in the production of top quality Sagrantino di Montefalco**, a wine produced totally from grapes of Sagrantino, the variety that it's been growing in the region of Montefalco for more than four hundred years. Marco Caprai strongly believed in the great opportunities that could come from such a long tradition and he translated this heritage with a modern and innovative approach.

Thanks to research work and long term experimentation we work to produce top quality elegant wines, that show a unique character. The colour, aroma and taste of our Sagrantino will make you feel the strong character of the people who work it, the beauty of the gentle hills where it grows and the richness and complexity of the long traditions of Montefalco.



OUR PHILOSOPHY

The Caprai Winery enjoys a privileged position, lying amid the Apennines and the towns of Trevi, Assisi, Spello and Montefalco, all famous for olive oil and wine production.

The strong commitment to produce quality wines arises, in fact, out of the region's beauty and richness.

Tradition, innovation, and territory are the key words that drive us in our everyday efforts.

The care for traditional values in the area allowed the Sagrantino grape to survive over the centuries. The idea behind our work is that of revaluating this tradition, through an innovative approach. Research and **experimentation** are at the heart of innovation, and we practice it in our work in the vineyards as well as in the cellar. The methods applied to obtain top quality grapes include: different types of experimental training systems and a stable, natural and artificial grassing. Moreover, a more rational approach in the plant protection processes and a reduced use of nitrogen fertilizers, together with the choice of the most suitable location for Sagrantino and all the varieties grown in the estate has proved fundamental for the production of good quality grapes.

Innovation for Arnaldo Caprai means also an open approach to new communication strategies, such as the internet. Through our website not only do we promote our products, but we also encourage communications between those who love our wine and want to know more about the culture and values that our wine symbolise. A wine club (www.amicidelsagrantino.it), events such as Wine Day, and a special wine sold exclusively on the net (www.nerooutsider.it) are some examples of the importance that Arnaldo Caprai attaches to new communication technology.

We are working to make excellent wines that will mirror our tradition and uphold the identity of the region of Montefalco at national and international level.

The Arnaldo Caprai winery has received several recognitions and awards including:

Winery of the year 2006 Gambero Rosso, Slow Food edit.

Oscar of Wine to Marco Caprai as Best Producer awarded by the Italian Sommelier Association

Three Glasses awarded by the Guide to Italian Wines - **All Edition (1997 - 2009)**

Five Grapes - Duemilavini Guide published by Italian Sommelier Association - **All Edition (2000 - 2009)**

Super Three Star - **Veronelli Guide**

T Sun - Veronelli Guide 2000inozza d'Oro 2001

International Award Vinitaly 1993

International Winechallenge London 1993-1994



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Viticolture in Montefalco

VINEYARDS

The Company estate extends for about 150 hectares (370 acres) 136 of which are currently in production. The vineyards are located in the area of Montefalco, Gualdo Cattaneo and Bevagna, which is the production zone of the DOC Montefalco and Grechetto dei Colli Martani as well as the DOCG Sagrantino di Montefalco.



The vines are exposed to a continental climate featuring warm summers and potentially dry and cold winters with occasionally some snow. The main white grape varieties grown in the estate include **Grechetto**, Chardonnay and Sauvignon, while **Sagrantino** is the leading red variety together with **Sangiovese**, Merlot and Cabernet Sauvignon.

SAGRANTINO DI MONTEFALCO

Historic Evidence

There is a large number of historic evidence about the wines produced in the area of Montefalco.

In the **I century a.C.**, Pliny the Elder in his *Naturalis Historiae* mentions the Itriola grape as the typical variety of Montefalco and researchers compare this to the present Sagrantino. As Sagrantino does not show any resemblance with other varieties that grow in central Italy, researchers claim that **Sagrantino's origins are exclusive to Montefalco**, while others believe that Sagrantino originally came from Asia Minor and it was taken to Montefalco by followers of San Francis of Assisi. Sagrantino is probably named after the term "Sacramenti", the religious services when this red wine was probably used.

Another important piece of evidence are the carvings representing vineyards in the area surrounding Montefalco in the apse of the Medieval church of San Bartholomew.

In Montefalco's historic archive there are several documents dating back to **1200** where "the care of vine-growers take in following their vineyards" is described. In the first half of **1300** a new rules of law regulating the issue are Released to "safeguard vines and wine" of the area of Montefalco.

In **1451** the famous Florentine painter **Benozzo Gozzoli** was hired by the Franciscans to decorate with frescoes the apse of their church which today is one of the most important Museums of Central Italy. The subject of the Frescoes is the life of San Francis. In the episode of Knight of Celano the bottle of a dessert red wine portrayed on the table of the Knight is probably Sagrantino. Vine-growing and wine making was a most serious issue in Montefalco, so much so that in 1540 a regulation of the Commune established the date for the beginning of the harvest.

During the Renaissance Montefalco's wine is very well known and appreciated as a quality wine, so much so that in 1565 **Cipriano Piccolpasso** in his famous report to the Pope about the territory under his rule states that: "...Montefalco, laying on top of a hill with a marvellous view, is surrounded by beautiful and good vineyards, and with the fruit makes delicate wines..."

The evidence proves that surely Sagrantino has been present in Montefalco at least for the last four hundred years. As far as we were able to discover the term Sagrantino is mentioned for the first time in a hand-written document dated **1598** and kept at the Archive of Assisi.

Wine-growing was such a serious matter that in 1622 Cardinal Boncompagni establishes "the death penalty by hanging for those who are found to cut a grape vine".

In **1800** Calindri in his historical and statistical report of the territories of the Pope, mentions Montefalco as the area producing the best quality wine in the state.



ARNALDO CAPRAI

Viticolture in Montefalco

In **1925** during an important wine fair, Montefalco is regarded as the leading wine region in Umbria: “Montefalco is the leading wine growing area with specialised vineyards with an average production of 6.5 t per hectare” thus proving that Sagrantino tends to be a low yielding variety.

On October 30, **1979** the Appellation (DOC) Sagrantino is created and on November 5, **1992** the top Appellation DOCG is awarded to Sagrantino. This date marks a turning point in the story of Sagrantino and of the entire area of Montefalco promoting its future economic and cultural development.

RESEARCH

The Arnaldo Caprai estate aiming at expressing all the potential of the local variety, Sagrantino, is carrying out a research study in collaboration with the Dipartimento di Produzioni Vegetali Sez. Coltivazioni Arboree of the University of Milan and the Parco Tecnologico dell’Umbria – Sitech s. cons. a.r.l.

The research addresses different issues:

- Sagrantino Clonal selection
- Implementation of modern techniques in the management of new vineyards (study of the best combination of plant density, rootstock and training system)
- Biodiversity and genetic variability within the Sagrantino variety.

Sagrantino Clonal Selection

Between 1990 and 1993 the research was aimed at identifying Sagrantino “mother plants” within its natural range of distribution, that includes the area of Montefalco, Bevagna and Gualdo Cattaneo.

Mother plants are single individuals that belong to the variety Sagrantino, but show different genetic and morphological characteristics, such as shape and largeness of the grape; levels of fertility, vine vigour; level of grape constituents (sugars, acids, phenolics, aromas); and presence of virus diseases.

These mother plants were mainly found in old and abandoned vineyards or in small farms where a limited number of Sagrantino vines were grown only for family consumption and were reproduced for generations via vegetative propagation. Thus, the aim was to recover as much as possible the natural genetic variability that had been lost or significantly reduced as a result of past mass selection.

In nursery, cuttings of the mother plants were grafted onto two different rootstocks in order to obtain rootings. Thus, it was possible to obtain probable clones that were the basis for two experimental vineyards planted in 1994 in two different sites within the range of Sagrantino.

These putative clones were analysed to identify different characteristics such as: buds fertility, average cluster weight, largeness and shape of the grapes; sugar content, pH, total acidity, levels of malic and tartaric acid in the musts; levels of phenolics and anthocyanins in the skins; possible presence of virus diseases detected through ELISA test; DNA mapping to evaluate differences and similarities among the different clones.

The grapes produced by each type of clone undergo a microvinification process at the San Michele all’Adige Institute of Agriculture. It is thus possible to evaluate the characteristics of the wine both through analytic analysis and through panel tastings. These procedures of scientific research will be repeated in the next years in order to identify a group of clones that prove effective in the improvement of the quality of Sagrantino wine. These clones will be registered in compliance with the law.

This selected and certified genetic material will be used for the planting of new polyclonal vineyards. The final aim is the find the best combination of clones to be grown in different sites and for the various enological aims that are pursued.



ARNALDO CAPRAI

Viticoltore in Montefalco

Agronomic Techniques

In order to compare vegetative and productive characteristics of Sagrantino different agronomic techniques are implemented in two separate vineyards planted in 1994.

Comparative studies between different training systems are carried out. Plants trained with the traditional “Palmetta” system (at a density of 1,700 plants per hectare) are compared with those trained with more innovative systems, such as Guyot and Cordon de Royat planted at various densities (3.200, 3.800, 4.800, 5.700, 7000, 8000 plants/ha). Each combination of training system and density is repeated on five rootstocks (3309 C, 161-49 C, 1103 P, 110 R, 140 Ru,) that show differences in terms of vigour and resistance to various factors including calcareous rocks, drought, etc. A total of forty different combinations are tested and compared in each experimental vineyard.

Production per plant is limited by manual cluster thinning, in order to obtain a production of 8t/ha in compliance with the DOCG regulations. For each combination the same tests carried out for the clonal selection (a part from DNA mapping and ELISA test) are performed in order to evaluate the vegetative and productive characteristics of the vines; finally microvinifications are also carried out. It is important to underline that in searching for the best combination possible between density, training system and rootstock, the possibility of an effective mechanisation maintaining the highest level of quality it is also taken into account.

As with clonal selection, it is necessary to compare the results yielded in several years, in order to take into consideration how a vintage affects the characteristics of each tested combination. The final outcome of clonal selection will result in the identification and description of clones of Sagrantino that prove suitable to the various sites and to different winemaking purposes. Such clones will be registered and included in the National Register of clones in compliance with the Italian legislation.

Biodiversity and genetic variability within the Sagrantino variety.

A reducing interest in indigenous varieties, in the vinegrowing, as well as in other sectors, produced the disappearance of many local genotypes that were not being grown anymore, thus causing a serious loss of variability and biodiversity in tree species. Moreover, several ancient Italian vine varieties died out as a consequence of the appearance of fungal diseases, such as powdery and downy mildew as well as “phylloxera”. Subsequently, the agro-industry focused on a production that became increasingly standardized and that relied mainly on varieties that shared similar agronomic and marketing characteristics. These standardized varieties were the result of a massive artificial selection (clonal selection) and the cultivation of varieties that were imported from other areas. This process caused a dramatic reduction in the total number of varieties. Ancient ones survived almost only as relics of a distant past and were represented by a few plants sometimes kept out of curiosity rather than for the preservation of their genetic material. This approach caused a loss of variability within fundamental wine components.

On the contrary, a modern approach for genetic gain does not aim at accumulating all the best characters relating to productivity and quality in one single genotype, but rather it aims at creating an entire population comprised of individuals that will display the best and most desirable combinations of characters. These new selected individuals must give/generate good results both in terms of quantity and quality, but must of all they must be able to interact highly with their growing environment. In other words, our aim is to select individuals that produce a wine that is highly distinctive and that show organoleptic features that ‘reveal’ in an unmistakable way the site and the land where they were grown.

The Sagrantino variety is a perfect example of this process. Sagrantino is an ancient variety that was threatened to disappear from the Italian ampelography and whose potential is currently being safeguarded and resulting from a project of genetic gain that was launched ten years ago thanks to the close collaboration between the University of Milan and the Arnaldo Caprai Winery of Montefalco.

The project’s goal is to propagate and select, through clonal selection, individuals that can meet production needs and the strict requirements imposed by the DOCG regulation for the production of quality wines, while retaining variability within the variety.



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Viticolture in Montefalco

When the project was launched, only very few hectares of Sagrantino remained; so in order to retain and expand such a limited genetic basis a weak genetic selection was also carried out on vines that could be found in the most diverse and far-off sites of its original area of Montefalco, such as arbors located in squares and alleys, gardens, parks, old alberates etc. As a result of this clonal selection, some individuals have already been certified as they represent a fundamental element of the current variability within the Sagrantino variety.

Within the framework of this wide-ranging program of genetic gain, a new project was launched in 1998 by the University of Milan, and a scholarship has been offered by the Arnaldo Caprai winery. The scholarship is aimed at financing a research study on the genetic variability of individuals obtained through a natural process of self-fertilization, that is individuals that are reproduced through seeds of ripening clusters.

Self-pollination among the first generations brings about a larger variability as a result of the genetic recombination. This is a phenomenon of sexual reproduction that allows for the appearance of existing latent morphological characters (such as the thickness of the cluster) as well as the genetic characters responsible for productivity or for some components of the grape, such as the different potential phenolics. As a result, the filial generation might be used to select and create new genotypes.

Indeed, this technique has already allowed for the segregation of some interesting characters relating both to qualitative and strictly agronomic parameters.

Most importantly, it will be possible to further evaluate a wide variability that is already part of the genetic material but not yet expressed. Such a result can be achieved through the analysis of quantity and quality parameters on seedlings of Sagrantino. This is an innovative method of genetic gain which guarantees respect for biodiversity and as well as the use of totally natural methods of genetic selection.

This research project represents still another opportunity to develop further the study of inter-varietal variability within the Sagrantino vine variety. Indeed, so far it has allowed for the study of heritability of some specific characters and the identification of several genotypes that can contribute to the improvement of certain parameters. This type of experimental approach is significant insofar as it allows to assess variability, as well as to separate and select those plants that have desirable characters both from a vine-growing and a wine-making point of view.



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Viticolture in Montefalco

CELLAR

The modern and functional cellar includes a designated area for vinification and storage equipped with conditioned stainless steel tanks totalling 13,500 hectolitre capacity, as well as an ageing area. The company owns Slovenian barrels adding up to 1,100 hectolitre capacity in addition to small oak barrels from Allier, Tronçais, Nevers, Vosges for a total capacity of 3,000 hectolitres. The cellar's rooms are suitably conditioned to control the slight temperature and moisture variations needed for an optimal ageing process. The company's yearly output totals 650,000 bottles, the final objective is to reach a million in the next few years.



Winery Tours

Visitors, whether they are experts or simply wine lovers who share with us a passion for wine, are welcome to the Val di Maggio Estate. During our winery tours you will visit the vineyards and the ageing cellar, in order to understand how we conceive and produce the wines you will taste.

At the end of the tour you will taste different types of wines, also accompanied by local cheeses and charcuterie. You can also drop into our Enoteca where you can find all our wines. Winery tours are open to groups of up to 15 people.

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