Interview with Luigi Moio, Professor of Oenology at the University of Naples, author of "Il Respiro del Vino" and owner of the Quintodecimo company

"Great wine is a perfect fusion between science and poetry". Luigi Moio, 57, professor of Oenology at the Department of Food Science of the University of Naples "Federico II", author and co-author of about 250 scientific publications in international journals, is now also the author of a best seller, "Il Respiro del Vino", published by Mondadori. President of the Oen Oenology Commission, the Paris-based International Organization of Vine and Wine, which deals with all the scientific aspects of the wine supply chain, he is the son of art (his father Michele was a historian from Campania that in the 50s relaunched the Falerno, drunk by the ancient Romans). Since the 1990s he has studied the aromatic aspects of wine, of which he is today one of the leading experts, at the Laboratoire de Recherches sur les Arômes of the Institut National de La Recherche Agronomique of Dijon, in Burgundy. In 2001, with his wife Laura, he founded Quintodecimo. The winery is located in Mirabella Eclano, in Irpinia, and takes its name from an ancient Roman settlement on the Via Appia. We are in the heart of the Taurasi DOCG. The professor is the right person to discover the secrets of wine aromas. And to refute some clichés, which often lick the fake news.

How many wine aromas are there?

«The aromas of wine are closely linked to the variety of grapes of origin and the pedoclimatic context in which it grows. The volatile molecules identified in a wine are more than a thousand, of these about 200 are those that are actually odorous or sensorially active. In the book I talk about "solo" and "orchestral" wines. About ten thousand varieties of grapes in the world, about thirty are easily recognizable: Moscato, Riesling, Cabernet Sauvignon, Sauvignon Blanc, Cabernet Franc, Merlot, Chardonnay, Gewürztraminer, Pinot Noir, Syrah and many others. In these wines there are two, three, at most four molecules that dominate on a common olfactory basis. The scent of wine is like an orchestra that generates smells: if there is a soloist, the melody is better recognized. In the Riesling Renano, for example, the note of kerosene emerges along with some terpenes. In Sauvignon Blanc 4-methyl-mercaptoethanone is responsible for the smell of passion fruit, boxwood or cat pee. In Moscato, terpenes (linalool and nerol) are responsible for the smell of rose petals. These are some solo wines. In the orchestras, such as Garganega, Cortese, Falanghina, Verdicchio, Aglianico, Sangiovese, Montepulciano, and many others in Italy and in the world, it is more difficult to say which fragrant note dominates. They have a recognizable scent, but essentially due to a balance between different odorous molecules. This balance is, of course, influenced by the pedoclimatic context, which is responsible for various olfactory nuances through which it is possible to trace back to the area of production, as long as the olfactory harmony between the different molecules is sufficiently stable.

Since 2001 he has founded the Quintodecimo company, which produces Aglianico, Taurasi, Fiano, Falanghina, Greco di Tufo. How do you apply your studies and knowledge to your wines?

«By intervening as little as possible and respecting the perfect combination of plant and soil. In this case, the winemaker becomes an assistant in the transformation process, he can guide it. I make wine as it should be done, applying the knowledge. Even environmental sustainability, which is one of the great problems, can only be solved by tackling it from the scientific point of view and not returning to the Middle Ages when people died drinking water».

Quintodecimo bottle

Professor, a series of clichés are circulating about wine, help us understand if they are true or false. Let's start with the first: natural wines are better because they use less chemistry.

"False. A wine is good or bad regardless of whether it is conventional or natural. The best wines are those made with very healthy grapes. And obviously without traces of residues harmful to human health and the environment: pesticides should not be used, so as to keep the soil and its entire microbial world alive. Unfortunately there is an improper use of the natural term. It makes us think of a bucolic world where things hurt less. Nature, on the other hand, is nothing but
an environment of forces in equilibrium with each other and the substances most harmful to humans are frequently just natural. Just think, for example, of mycotoxins and many other microbial toxins ».

Wines using indigenous yeasts are better than those that use laboratory yeasts that give approved flavors. «They are different, but better not. What would they be better? What kind of quality do you talk about? Nutritional? Food security? Of environmental sustainability? Emotional? I have tried wines made with spontaneous fermentations, but in some cases they are the ones to be approved, but by default. That homologous yeast is nonsense. The sensorial character of a wine is mainly given by the composition of the grapes of a given cultivar and by the correctness with which the process of transformation of the grapes into wine is carried out ».

Quintodecimo the wines produced
It is the yeasts that create the aromas of wine, so there is a race to grab those of the laboratories. «An urban legend. Yeasts mainly create alcohol and carbon dioxide. And, among the secondary products, obviously also some odorous molecules, which are more or less the same in all the wines, about seventy that constitute the olfactory base of all the wines of the world. For wines that are more recognizable from an olfactory point of view, aromatic precursors are present, often specific to the variety. In the absence of odorous precursors in the grape, no yeast in the world can ever produce new aromas responsible for sensory identity from the strictly fermentative process alone. Obviously in cases where the fermentative substrate has potent odors, or aromatic precursors, yeast provides a fundamental contribution to their expression. In addition, the really important parameters affect the olfactory balance between the odorous molecules that are generated in a fermentation process: chemical composition and turbidity of the must, for example, availability of oxygen and nitrogen nutrients, fermentation temperature. These characteristics are able to shift the balance towards more fruity or more neutral aromas, especially in white wines ».

Good wine is without sulfites. «To reduce sulphites in wine you need to have the right grapes in the right place. For example, in the case of Quintodecimo, with Aglianico. Because of the high acidity and consequently the low pH, with perfectly intact and very healthy grapes, red wines are bottled with a total content of 25 mg/l of total SO2, that is in line with the maximum limit of the so-called natural wine and four times less than the maximum limit of the so-called organic wine. Red wine is somehow already protected from oxidation, thanks to the anthocyanins of the skins, so if the grapes are healthy and not contaminated from the microbiological point of view it is extremely easy to obtain correct wines with very low sulphite content. White wines, on the other hand, do not have sufficient endogenous antioxidant protection. In this case there must be a minimum of antioxidant protection if we want to preserve the aroma and above all the varietal and territorial sensory identity of the wine ».

Organic and biodynamic wines are better and healthier than conventional ones. «Best in what? We must first make clear what is meant by best. A qualitative feature? Nutritional? Food security? Ecologica? Of environmental sustainability? This is always the problem: we must agree on what is meant by the best. And then we should have objective scientific evidence of what is claimed. One of the interesting aspects is to understand if there are residues in the grapes. But if you use a safe pesticide that degrades after twenty days and leaves no traces, what’s the problem? Are we sure there are no traces of copper on the grapes? Or that the excess of copper in the soil does not create problems for the life of the soil? I am not against anything, everyone can do what he wants, but we must use logic. One should not lead to extremism and consequently fall into illogicality. It is clear that there are areas in the world where pesticide treatments continue to be carried out with helicopters, and I am obviously against this abuse, of course! But you don’t have to put everything in the cauldron. For me the key to everything lies in a recovery of common sense and the objectives to be pursued are mainly those of eco-sustainability, which can no longer be postponed, and of highly professional and knowledge-based craft approaches, knowing what to do. Only by knowing a lot, can we intervene as little as possible. It is obvious that if you make a mistake by planting a vineyard in a damp, poorly ventilated area with stagnant humidity in the soil, you need to intervene more invasively. However, there is no doubt that the approaches based on naturalness have had the great merit of awakening a new sensitivity towards the environment and the desire for safer food and beverages in terms of food safety. And this is a very important achievement ».
The native vines are better than the international ones.

«The native vines are the best tool to express the territories in which they are historically found. Italy has a great viticultural biodiversity (we are talking about 800 native vines, ed). Thanks to the enormous orographic and climatic variability of the country, the numerous Italic vines have contributed to creating a marvelous viticultural mosaic: Sangiovese and Vernaccia in Tuscany; Nebbiolo, Arneis and Cortese in Piedmont; Garganega in Veneto; Ribolla in Trentino; Verdicchio in the Marche; Tintilia in Molise; in Campania Aglianico, Fiano, Greco and Falanghina (but there are other minor ones like Piediroso, Pallagrello, Casavecchia, Fenile, Ginestra); in Puglia the Negramaro and the Primitivo, which manages to withstand that heat; in Sicily Caricante, Nerello Mascalese, Grillo, Catarratto, Inzolia, just to name a few. All these vines are perfectly adapted to those climates. The internationals, from Chardonnay to Sauvignon, from Merlot to Cabernet, are soloists and therefore easily recognizable. They are cultivated all over the world and have been a real olfactory gym, which has allowed many to get closer to wine. Many enthusiasts, however, have become bored with the same aromas found in the vast majority of wines in each country. That's why there is an extraordinary space for Italy that has many historical vines. Some, rightly, will continue to use the internationals, which have been important to relaunch certain regions, but the time has come to aim with determination and still with more conviction on our ampelographic heritage ».

The use of wood homologates wines.

«If it is used incorrectly it is certain that it is homologating. But, in particular, the barrique is a very important tool if you want to make great aging reds. Many have thought of putting wine in the wood to make it better, but it is not. The barrique is a catalyst of reactions, a sort of twin-jet engine: it accelerates the evolution and maturation of wines. So you need to know well what you want to do, otherwise it becomes an accelerator of the processes of oxidative decay of wine, particularly in the case of white wines. The mistake was to consider the barrique a simple container ».

Champagne is better than classic method Italian sparkling wine.

"From an analytical point of view, the sparkling-champagne comparison is complicated. In wine there is an important emotional component, neuromarketing studies confirm it and it is no doubt that French people were very good, before us, to put it into practice. Those who are about to drink a bottle of champagne are excited and happy even before tasting. Brain areas that enhance his perception are activated in advance. Beyond the Alps they have been able to build this myth and maintain it over the centuries ".

The minerality of a wine is not determined by the composition of the soil, the soil, but by microorganisms.

"There is no scientific consensus on minerality. If there is no agreement on a sensorial descriptor, everyone perceives it in its own way. The history of minerality begins in France, in Alsace to describe some notes of Riesling. From there the term was adopted in the Loire Valley, due to a peculiar feature of the soils, and then in Burgundy, first in the Chablis area and then in the whole Côte d’Or, where it was often associated with the smell that the flint emanates when it is vigorously rubbed with a flint to produce sparks. The odorous molecules that are produced in this case are compounds of sulfur nature. In fact in the wine they are produced by yeasts, either indigenous or selected, in the absence of oxygen. So it is probable that at least for this type of smell the soil does not enter much. But solid scientific results, demonstrating this, are not yet available. I personally associate the term minerality not so much with an olfactory but gustatory reference: with acidity and with extreme sensory purity and above all with white wine ».

Professor, between Coca-Cola wine and the peasant’s wine, what is the right way forward?

«We need to make real wine. The "built" wine, which appeals to many, is possible in any part of the world. Today, then, unfortunately, more and more frequently the faulty one is passed for great wine, saying incorrectly that the reason is that it is less bad for the health. This is absolutely not real. The real wine must be produced according to the sound principles of eco-sustainability, without creating problems for the planet that hosts us, the workers in the supply chain and consumers. Obviously, I repeat, it is not possible to make it all over the world but only where there is the perfect combination of grape and terroir. It is only in this case that it is possible to intervene as little as possible, provided you have all the theoretical knowledge to manage a correct transformation of the grape into quality wine. If the grape is the right one, in the right place, there is no need to add or subtract, as is done with Coca-Cola. However, those who are lucky enough to work in this way must already have the final wine in mind. Exactly like a music for a musician ».