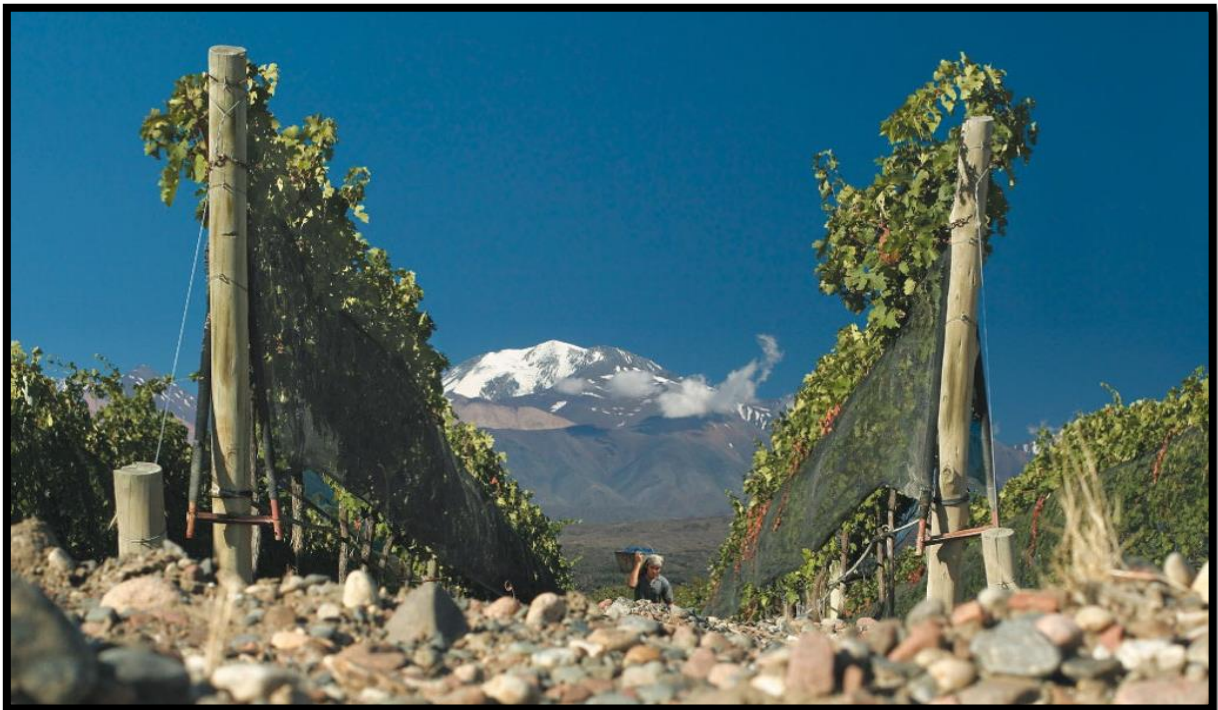


# THE MYSTERY OF MALBEC FROM MENDOZA ARGENTINA REVEALED

Analysis of scientific research about the influence of terroir  
on Malbec wines from different wine-growing zones in  
Mendoza, Argentina



**English abstract**

**Thesis for obtaining the title of Magister Vini in 2014 by**



**Fransbert Schermer**

## Abstract

The influence of *terroir* on a wine is sometimes hard to understand, it is like a mystery. Maybe this is due to its complexity: the many factors that determine terroir and their mutual interactions. Fascinating is that Malbec wines from Mendoza in Argentina are so successful and at the same time show a large diversity: from an easy to drink basic quality to a complex wine with aging potential. It is also clear that this has to do with the relative unknown terroir of Mendoza with its strikingly large differences in altitude and temperature between nearby wine-growing (sub-) zones. I found it a challenge to try to unravel this mystery of terroir and its influence on the Malbec wines from Mendoza.

In this literature study all relevant scientific research has been systematically studied to find out to what extent the Malbec wines from various wine-growing zones and altitudes in Mendoza differ from each other and how these differences can be described in a sensory profile.

This study starts with a discussion about the necessary conditions and the possible limitations of the studied research, which determines its relevance. In the next step the relevant research was analysed, discussed and interpreted. In time the advance in insight and in measurement technique lead to better research, both in terms of measurements, but also in terms of better framework of conditions ("*ceteris paribus*").

The research was performed by universities and institutes from Argentina, Spain, Chile and the USA in cooperation with bodegas like Catena and Salentein. Samples of Malbec grapes and wines from different locations within Mendoza were chemically analysed and differences were found in their composition in terms of aroma components and polyphenols. Also sensory analysis of these samples was often part of this research. In general significant differences were found between the Malbec wines originating from the large wine-growing zones in Mendoza: Zona Alta del Río Mendoza, Valle de Uco and Mendoza Este, but also between wines from subzones in these zones and in wines and grapes from three different altitudes within the same subzone.

The central research question of my literature study was: *Could the observed differences in the studied research with regard to the aroma components, the phenolic compounds and their sensory properties in the Malbec wines from different wine-growing zones in Mendoza be related to their origin or what we call the terroir?* My answer is *positive*, because almost all the studied material lead to this conclusion. What also became clear is that the *altitude* seems to be the most crucial terroir factor in Mendoza. I also made a short analysis to explain the observed differences in terroir. The altitude in Mendoza has a great influence on the main terroir-drivers: temperature, the temperature amplitude and light.

Based on all of the research I propose a general sensory characterization of the Malbec wines from a specific zone or subzone. Due to the fact that there were some discrepancies between the observed studies I based this characterization on my own personal judgement and interpretation. The highest altitude subzones (Alto Valle de Uco) produce Malbec wines with a good structure and ageing potential, intense colour, red fruit aromas and flavours, complexity and specific floral aromas, like violets. The Malbec wines of average height, especially from the Classic zone near Luján excelled in fruit, body and were very homogenous. The Malbec wines from the warm and relative low zone Mendoza Este are easier to drink and have more typical stewed fruit aromas and flavours.

Finally, I paid attention to the importance of this sensory characterization for the zoning and the protection of origin of the wine-growing zones in Mendoza. The current geographical zoning is not suitable anymore. A classification of the wine-growing zones based on altitude seems to be more appropriate to describe the typical characteristics of the Malbec wine from such a (sub-) zone. This will make the wine consumers more willing to pay a premium for wines with particular terroir related characteristics. To make the consumer aware of this terroir influence within Mendoza promotion and wine education could bring the fantastic potential of Malbec wines from Mendoza within reach to a growing number of wine lovers.

Malbec wine from	subzone	altitude m.a.s.l.	climate (GMCC)	sensory characteristics
Valle de Uco	Tupungato <i>Alto Valle de Uco</i>	1200- 1450	temperate warm very cool nights	Dark fruit, floral, tobacco, earthy, spices, sweet. Rich in colour, body and fine tannin structure. High complexity. Aging potential.
	Tunuyán	950-1050	warm very cool nights	Dark and dried fruit, chocolate. Partially more acidity and astringency.
	San Carlos	950-1000	warm very cool nights	Heterogenic Aging potential
Zona Alta del Río Mendoza	Alto Agrelo	1100	warm (very) cool nights	Very fruity and a little floral. Well-structured and balanced. More body and colour compared with the other subzones in this zone. Aging potential
	West-Luján	900-1100	warm cool nights	Very fruity and a little floral. Well-structured and balanced. Aging potential. Especially wines from old vines very homogenous and balanced.
	Maipú	750-900	warm cool nights	More red than dark fruit. Pepper, alcohol, round and rich. Less structured. Especially wines from old vines very homogenous and balanced.
Mendoza Este	Mendoza Este	650-750	very warm temperate nights	Stewed fruit, sweet, alcoholic.  Less structure, more easy to drink.

Table I.1 Characterization of sensory properties per (sub-)zone in Mendoza