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Understanding the expression of time on Chasselas wines

VIII. International Congress on Mountain and Steep Slopes Viticulture – Cervim 2026

Marie Blackford

FONDATION LOUIS-PHILIPPE ET ANNE-CHRISTINE BOVARD

canton de vaud

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Chasselas, the symbol of Swiss Viticulture

- With **3,416 hectares**, Chasselas accounts for nearly a quarter of Switzerland's total vineyard area (14,431 ha).

- A very old grape variety, its birthplace is in the **Lake Geneva region**, particularly in the canton of **Vaud**, as confirmed by genetic analyses.

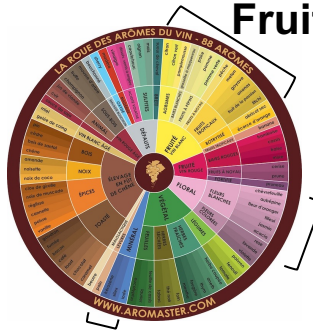
- Although present in nearly all of the country's wine-growing regions, it is by far the most prevalent in **French-speaking Switzerland**.

- More than just a grape variety, it is the **historical and cultural reflection of local viticulture**, adapting to diverse soils to produce unique wines.

Wines whose aging potential remains little known

For most consumers

When they were young …



… after several years of aging in the bottle

Qualitative aging bouquet

Mainly based on practical experience

Known to certain producers, professionals, and knowledgeable enthusiasts

Growing interest among consumers

Tasting Workshops

- diVINes *“Chasselas, a grape variety with great aging potential: A vertical tasting of Chasselas from the Vaud region, from 1964 to 2018.”*
- Memoir of Swiss Wines *“The Many Faces of Chasselas”*
- At the producers’
- ApéroVinoScience – I love Chasselas

“Old Vintages” category at the Mondial du Chasselas (wine competition)

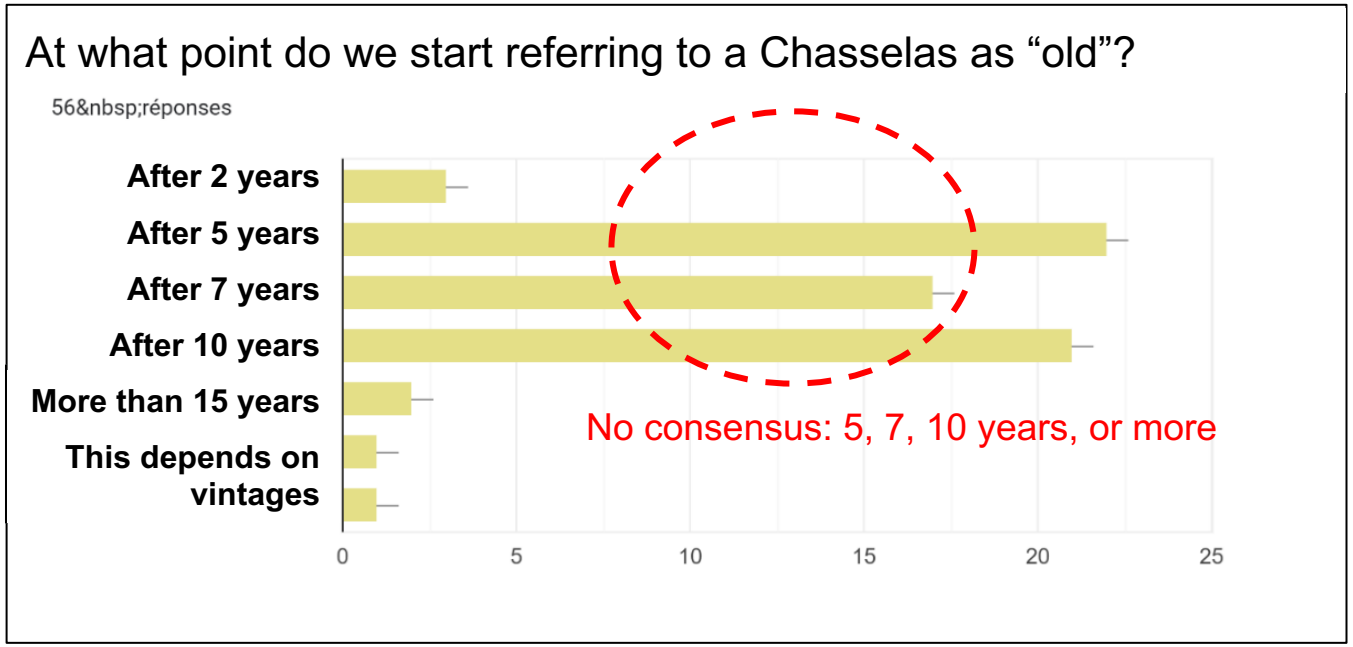
Highlighted by some sommeliers

At what point do we start referring to a Chasselas as “old”?

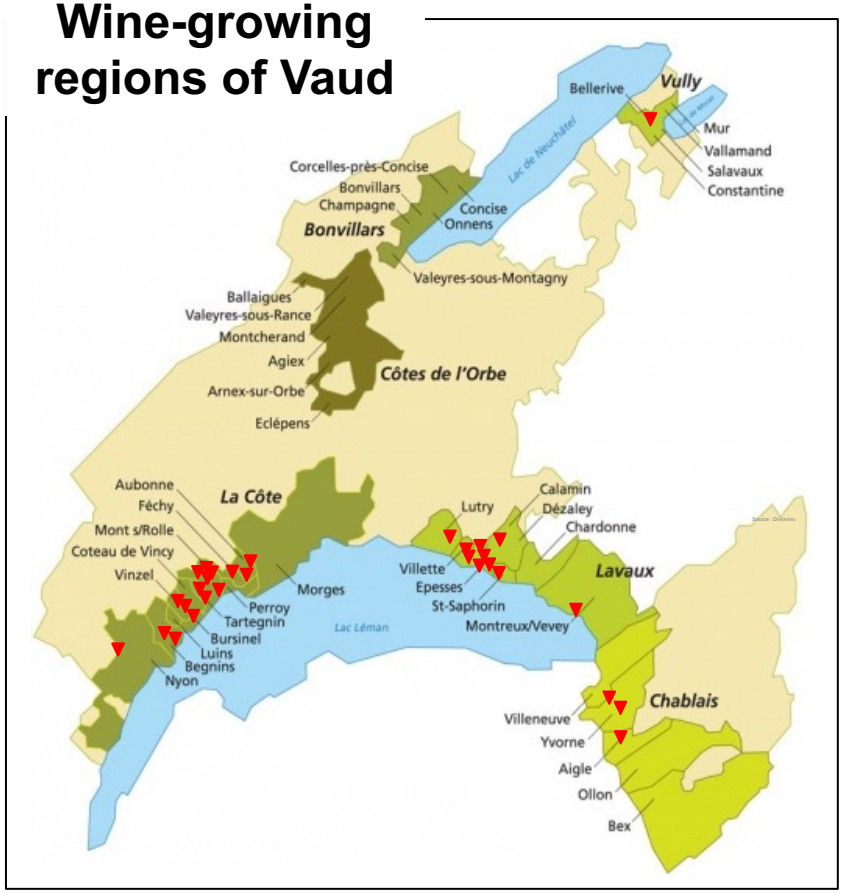
When they were young …

How many years ?

… after several years of aging in the bottle



Wine-growing regions of Vaud



Definition of Dézaley: an aged Chasselas wine is a wine that is **at least 10 years old** and exhibits a **positive change in its sensory characteristics**.

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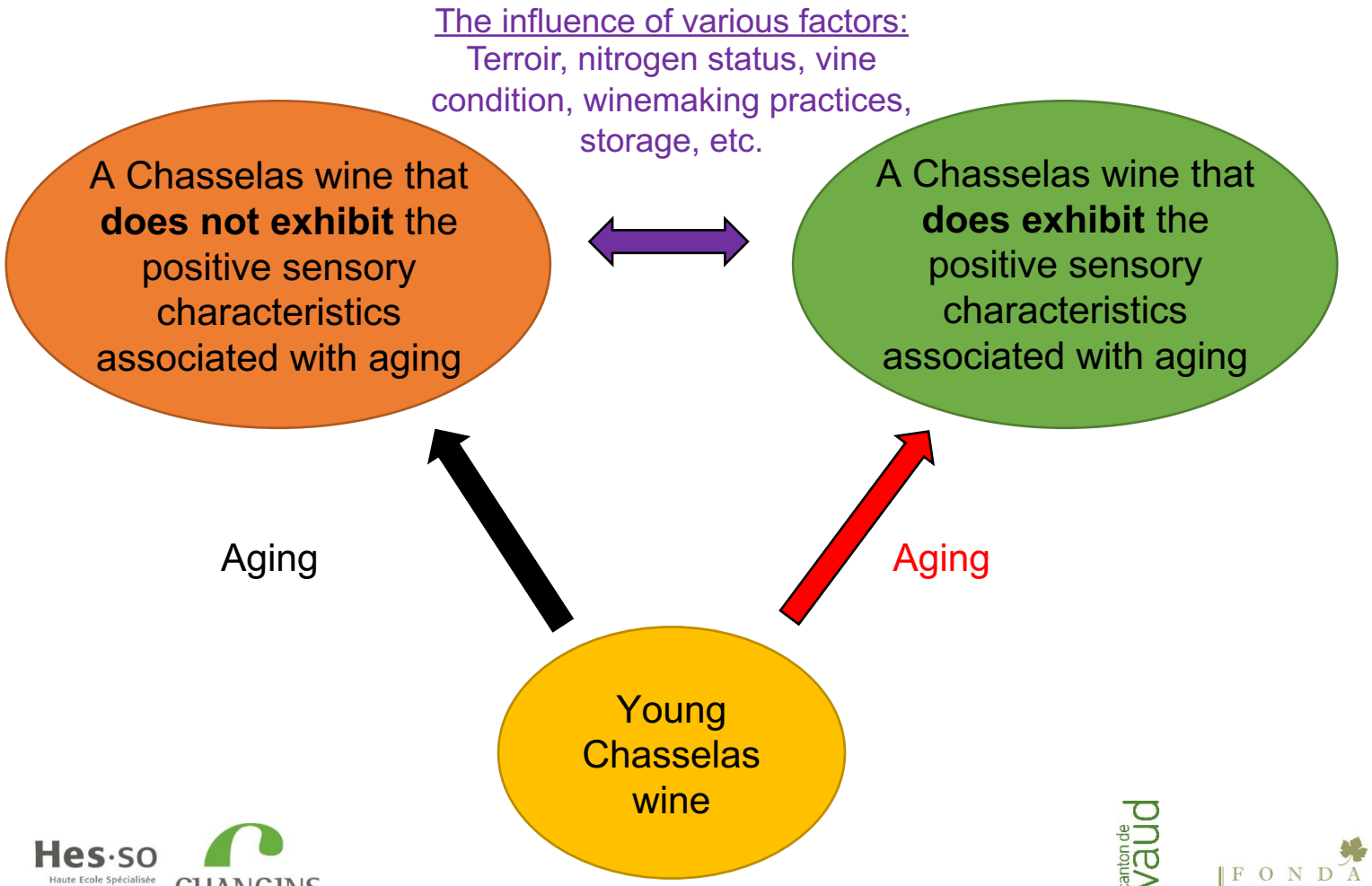
The framework of the “Aging of Chasselas” project



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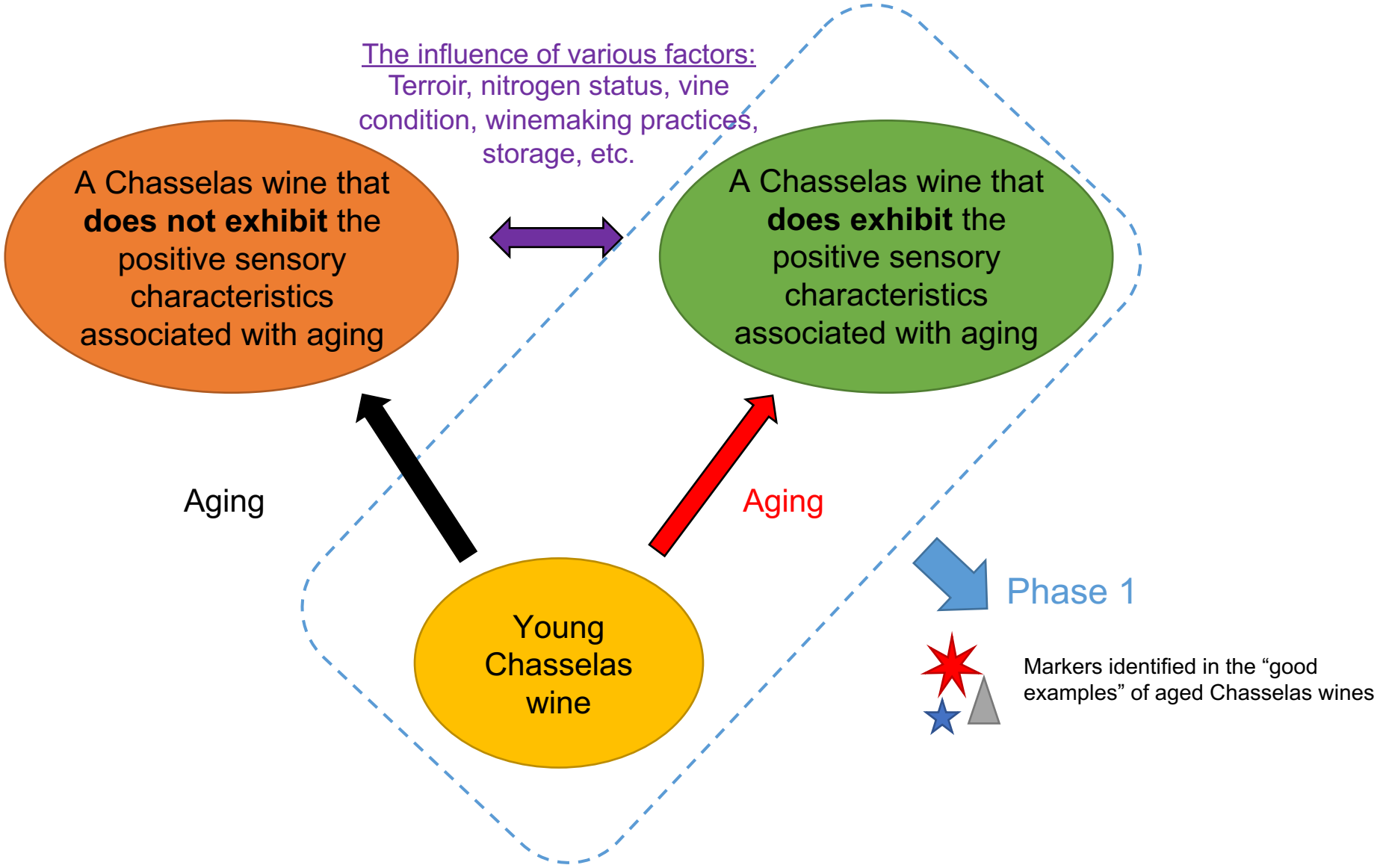

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Phase 1 - Identification of characteristic markers of “good examples” of aged Chasselas from Dézaley (Dézaley type)

4 vineyards:

- Bovard, Monachon, Dubois, Chevalley

2 vintages:

- 2009 and 2022

Analyses conducted:

- Sensory
- Chemical
- Volatile compounds
- Olfactometry

Identify the differences between 2009 and 2022

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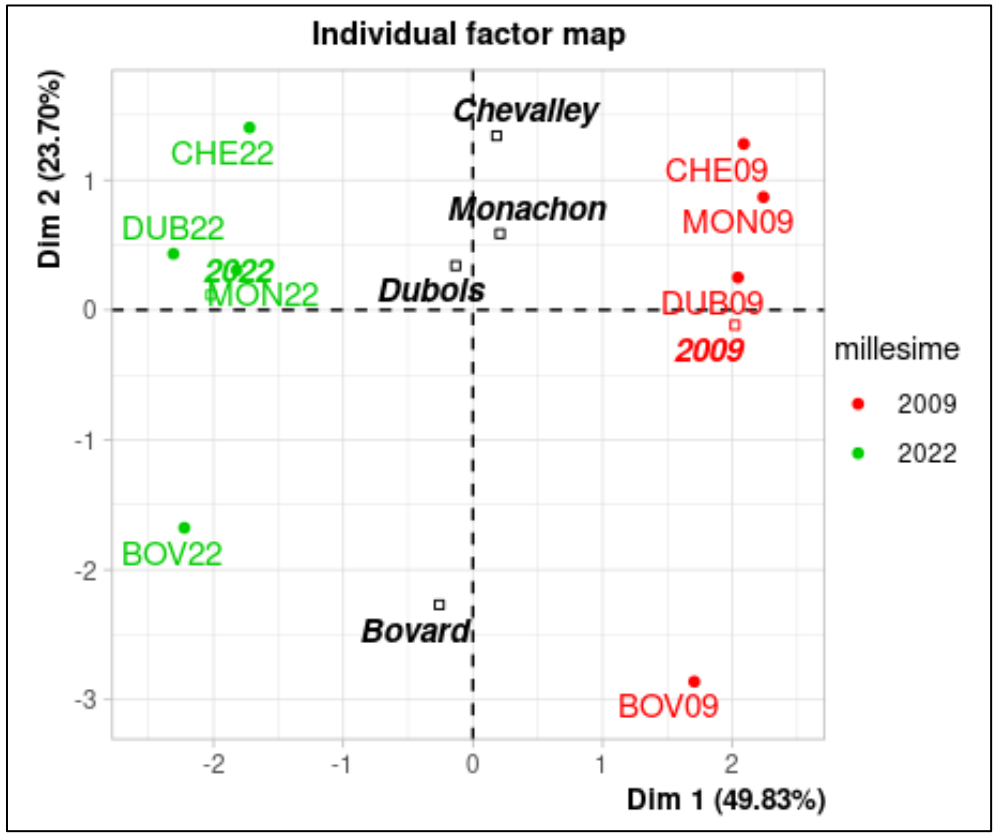
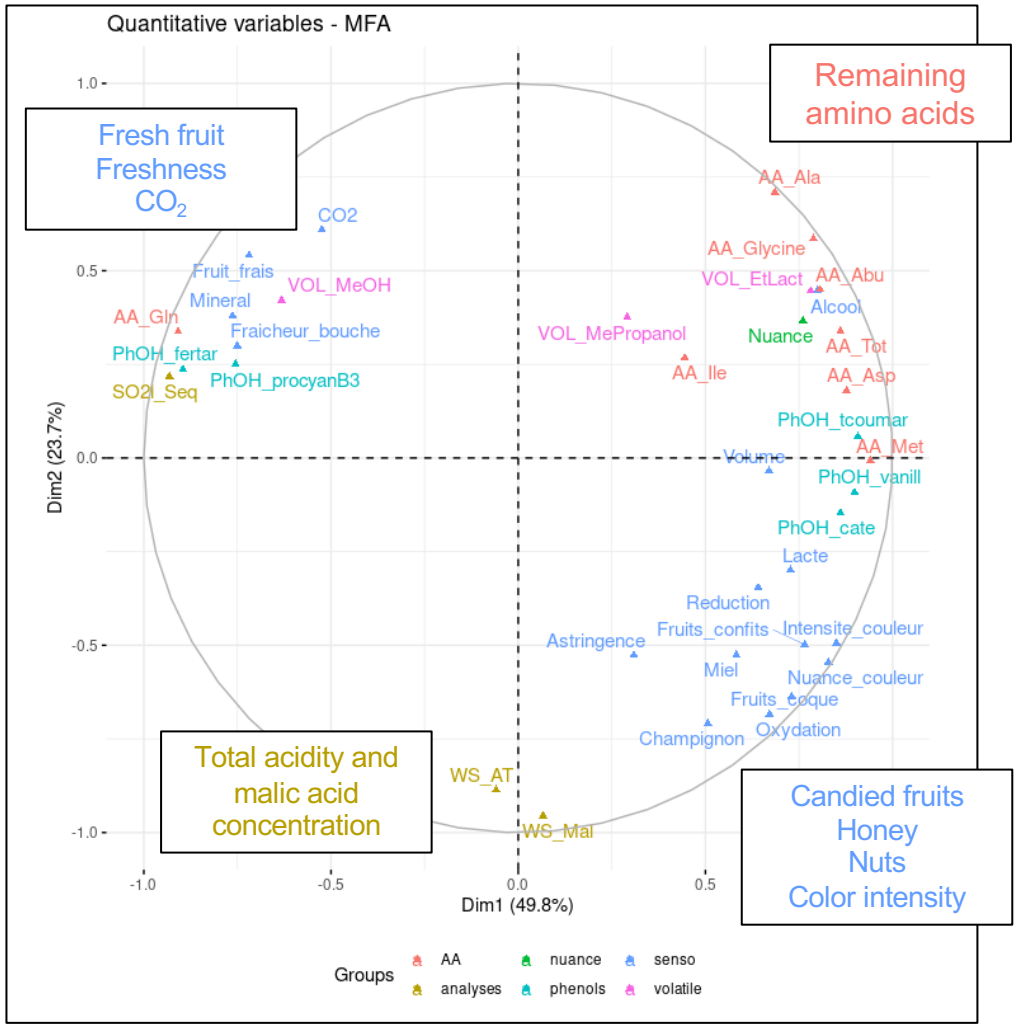
Phase 1 - Identification of characteristic markers of “good examples” of aged Chasselas from Dézaley (Dézaley type)





Identifying the key differences between 2009 and 2022

Phase 1 - Identification of characteristic markers of “good examples” of aged Chasselas from Dézaley (Dézaley type)

Volatile compound

		2009								2022							
CAS#	Compound	V16_a_S013	V16_b_S066	V02_c_S123	V02_d_S124	V05_a_S045	V05_b_S104	V11_a_S012	V11_b_S041	V39_a_S115	V39_b_S111	V40_a_S042	V40_b_S114	V38_a_S082	V38_b_S003	V37_a_S035	V37_b_S023
98-01-1	Furfural	1.9	2.4	0.8	0.8	0.4	0.4	0.5	0.6	0.3	0.3	0.1	0.1	0.1	0.0	0.0	0.0
10348-47-7	Pentanoic acid, 2-hydroxy-4-methyl-, ethyl ester	1.3	1.5	1.1	1.2	0.8	0.8	0.6	0.8	0.5	0.5	0.4	0.5	0.3	0.2	0.2	0.2
687-47-8	Ethyl (L)-(-)-lactate	1.9	2.2	1.0	1.1	0.8	0.7	0.2	0.2	0.2	0.2	0.5	0.4	0.6	0.4	0.6	0.6
45mz	RT 16.94 / 45mz	1.4	1.4	1.4	1.2	0.9	0.8	0.4	0.4	0.3	0.3	0.5	0.5	0.4	0.4	0.7	0.7
617-35-6	Propanoic acid, 2-oxo-, ethyl ester	1.2	1.5	1.2	1.2	1.0	1.0	0.4	0.5	0.4	0.4	0.6	0.6	0.6	0.4	0.6	0.5
123-25-1	Butanedioic acid, diethyl ester	1.5	1.7	1.2	1.2	0.6	0.6	0.6	0.7	0.4	0.3	1.0	1.1	0.8	0.5	0.8	0.7
71-36-3	1-Butanol	1.0	1.0	0.9	0.9	1.2	1.1	0.9	1.0	0.7	0.7	0.8	0.7	0.9	0.8	0.8	0.8
141-78-6	Ethyl Acetate	1.4	1.4	0.7	0.7	1.1	0.9	0.9	1.0	0.6	0.6	0.9	0.7	0.9	0.9	0.9	0.9
106-32-1	Octanoic acid, ethyl ester	0.8	0.8	1.0	1.0	1.7	1.2	0.6	0.9	0.6	0.6	0.9	0.6	1.1	1.1	0.9	1.0
431-03-8	Diacetyl	1.6	1.8	1.3	1.4	0.6	0.6	0.3	0.4	0.5	0.5	1.5	1.4	1.2	0.9	1.2	1.1
57mz	RT 16.94 / 57mz	1.0	1.5	1.1	1.1	0.9	0.9	0.9	0.7	0.8	0.9	1.0	1.0	0.9	0.6	1.4	1.1
111-27-3	1-Hexanol	1.1	1.4	0.9	1.0	0.9	0.8	0.9	0.9	0.8	0.8	0.9	0.9	1.2	1.1	1.3	1.2
108-64-5	Butanoic acid, 3-methyl-, ethyl ester	0.8	1.1	0.9	0.9	1.1	1.1	0.8	1.3	1.2	1.2	1.2	1.2	1.2	0.4	1.1	1.0
71-23-8	1-Propanol	0.7	0.8	1.0	1.0	1.1	1.1	1.1	1.2	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0
10317-17-6	Oxetane, 3-(1-methylethyl)-	1.1	0.8	1.1	1.1	0.9	0.8	1.2	1.0	1.1	1.1	1.5	0.9	1.1	1.1	1.1	1.3
124-07-2	Octanoic acid	1.7	1.9	1.2	1.3	0.5	0.6	0.5	0.4	1.6	1.6	1.0	1.3	1.4	0.8	1.7	1.9
142-62-1	Hexanoic acid	1.9	2.3	1.2	1.2	0.4	0.4	0.3	0.3	1.8	1.4	1.1	1.4	1.4	1.0	1.9	2.0
107-92-6	Butanoic acid	2.2	2.6	1.1	1.0	0.3	0.3	0.3	0.2	1.6	1.4	1.1	1.4	1.4	1.1	2.3	2.3
503-74-2	Butanoic acid, 3-methyl-	2.2	1.9	1.4	1.3	0.3	0.4	0.3	0.2	2.0	1.8	1.6	1.4	1.5	1.3	2.2	2.2
60-12-8	Phenylethyl Alcohol	1.1	1.4	1.5	1.6	0.6	0.5	0.6	0.7	3.2	3.1	1.9	1.9	1.6	1.2	2.5	2.4
123-92-2	Isopentyl acetate	0.7	0.8	1.3	1.4	1.2	1.1	0.7	0.9	3.0	3.0	5.8	4.7	5.8	5.1	3.9	3.9
111-35-3	1-Propanol, 3-ethoxy-	0.9	1.0	1.7	1.6	0.4	0.3	1.0	1.1	2.9	2.8	2.0	2.0	1.3	1.1	11.4	11.1

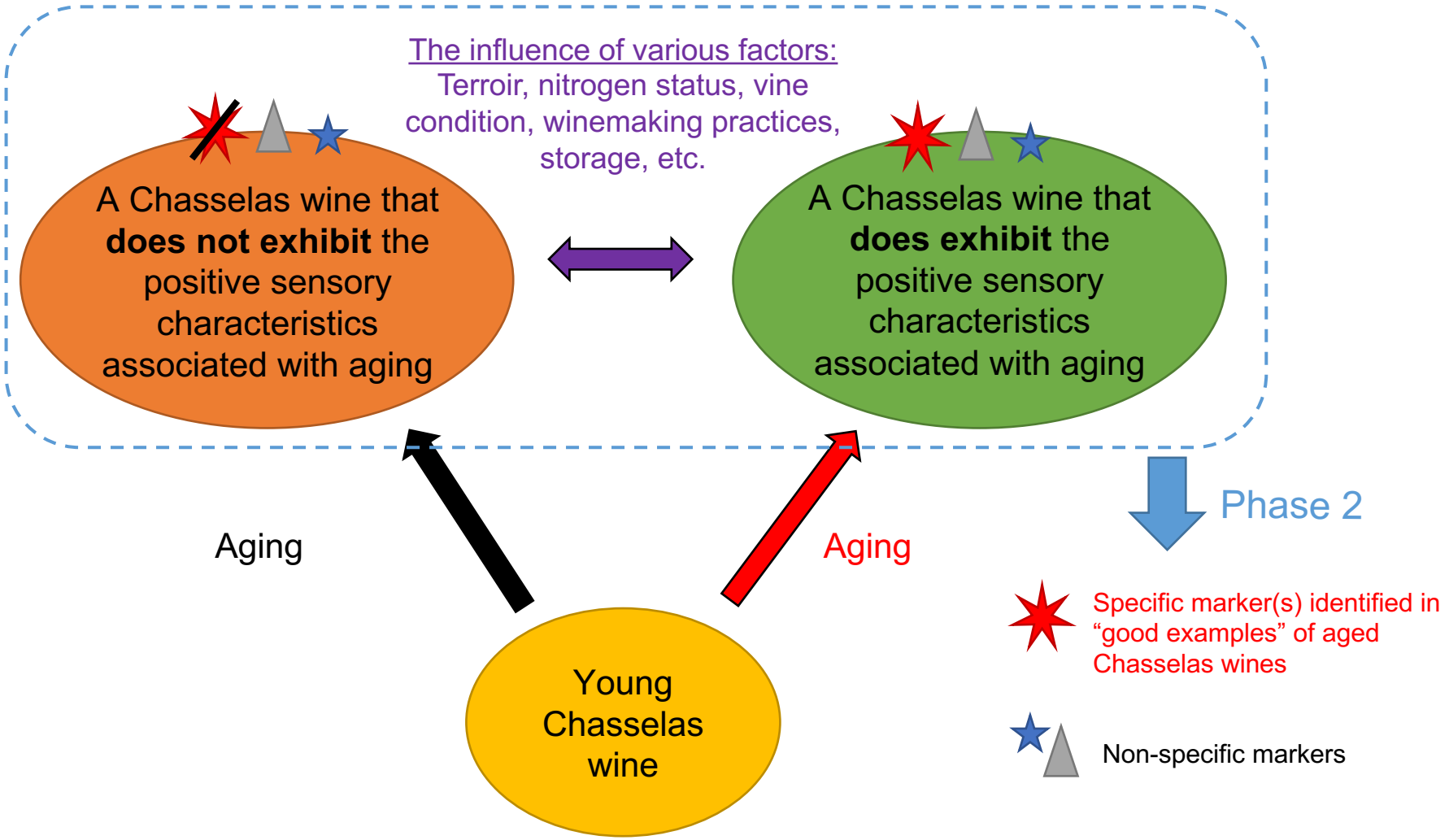
6
5
4
3
2
1
0

Die Flächen wurden auf den Mittelwert der Alten Proben normalisiert

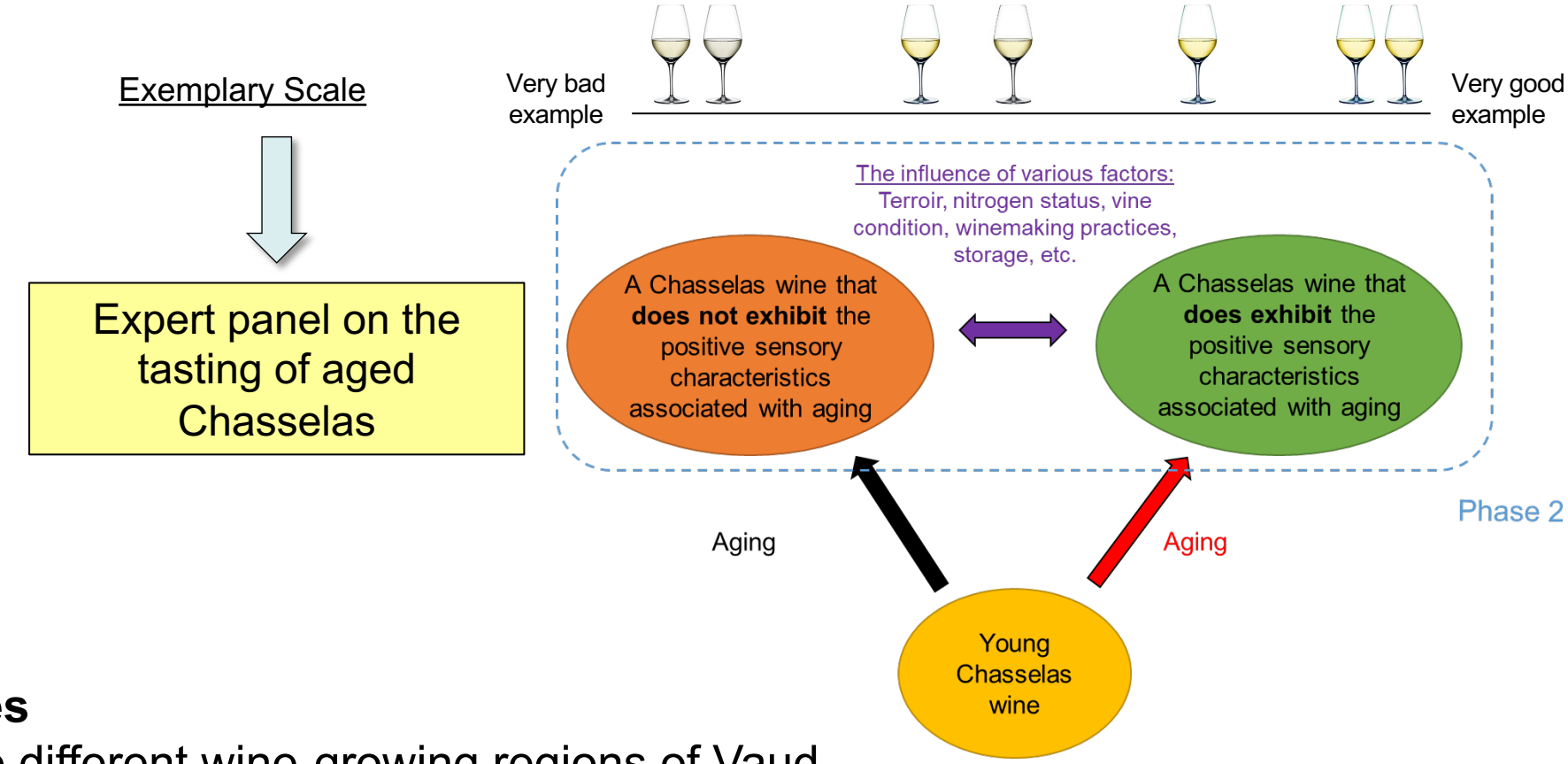
Furfural (a scent of almonds and toast) was detected in both the 2009 and 2022 wines, with virtually none present in the 2022 wines and higher levels in the aged wines.

3-ethoxy-1-propanol (no characteristic odor) appears to degrade with aging and is therefore found exclusively in young wines. This is also the case for **isopentyl acetate (isoamyl acetate)**

The framework of the “Aging of Chasselas” project



Phase 2 - Verification of the specificity of markers in “good examples” of aged Chasselas wines



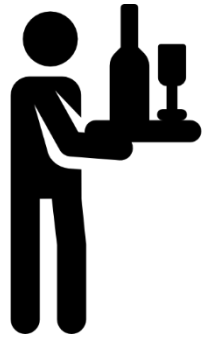
36 wines
from the different wine-growing regions of Vaud
3 vintages: 2003, 2009 and 2012
13 different domains

Phase 2 - Verification of the specificity of markers in “good examples” of aged Chasselas wines

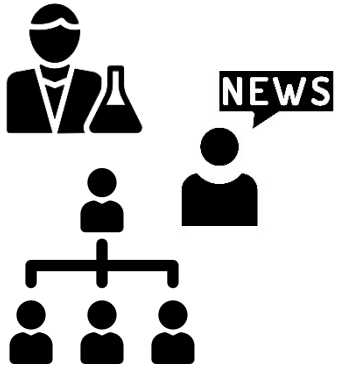
Exemplarity test – panel description

37 people selected for their knowledge of Chasselas, and more specifically of aged Chasselas.

68% involved in wine production



14% worked in the hospitality industry



19% “other” category *(researchers, journalists, and members of professional organizations)*

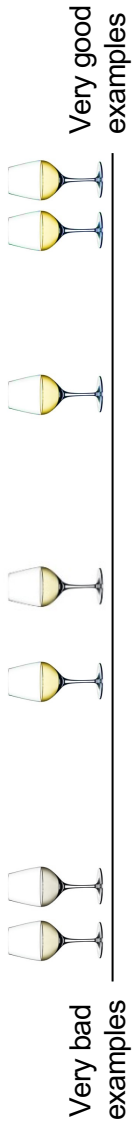
Phase 2 - Verification of the specificity of markers in “good examples” of aged Chasselas wines

Exemplarity test

«Good examples»

Before the tasting, all the wines were decanted in the same way

	Note	Groupe
V16DUB09	7.415	a
V21VIN03	7.367	a
V02MON09	7.325	ab
V19ROC09	7.307	abc
V01MON03	7.047	abcd
V35YVO09	7.032	abcd
V20ROC12	7.022	abcde
V34YVO03	6.972	abcdef
V24AUT03	6.548	abcdefg
V13CUR09	6.493	abcdefgh
V26AUT12	6.455	abcdefgh
V14CUR12	6.309	abcdefghi
V07MOI03	6.092	bcdefghij
V09MOI12	6.069	cdefghij
V05CHE09	5.941	defghij
V23VIN12	5.929	defghij
V25AUT09	5.829	defghij
V06CHE12	5.777	efghijk
V18ROC03	5.768	fghijk
V27MAR03	5.730	fghijk
V15DUB03	5.574	ghijkl
V31AIG12	5.569	ghijkl
V03MON12	5.565	ghijkl
V22VIN09	5.267	hijklm
V10BOV03	5.262	hijklm
V28MAR09	5.261	hijklm
V08MOI09	5.248	hijklm
V30AIG09	5.194	ijklm
V17DUB12	5.042	jklmn
V04CHE03	4.555	klmno
V36YVO12	4.375	lmno
V11BOV09	4.316	mno
V33VILL12	4.112	mno
V12BOV12	3.837	nop
V32VILL09	3.669	op
V29MAR12	2.727	p



«Bad examples»

Can this categorisation be explained by the identified markers or other parameters?

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Phase 2 - Verification of the specificity of markers in “good examples” of aged Chasselas wines

Explain the exemplarity rating based on:

- Chemical analysis data – no direct correlation
- Viticultural parameters
- Oenological parameters

```
              Df Sum Sq Mean Sq F value  Pr(>F)
millesime      2  4.647   2.323   3.291 0.05618 .
region         2  0.056   0.028   0.040 0.96131
bouchage       1  8.598   8.598  12.179 0.00207 **
azote_mout     1  9.744   9.744  13.803 0.00120 **
bois           1  0.700   0.700   0.992 0.33002
Rutile         3  6.296   2.099   2.973 0.05385 .
Residuals     22 15.530   0.706
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Elements identified regarding custody potential, analysis to be continued.

Closure type	Exemplarity rating	
Vis	6.04	a
Bouchon	4.97	b
Pr > F	0.00207	

Must nitrogen supplementation	Exemplarity rating	
oui	6.37	a
non	5.02	b
Pr > F	0.0012	

Rutile	Exemplarity rating	
Reserve moyenne à élevée	6.23	a
Reserve élevée à très élevée	5.87	ab
Reserve faible	5.52	ab
Reserve moyenne	5.46	b
Pr > F	0.05385	

effective water storage capacity of the soil

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In short: what the time offers to Chasselas

Successful identification of key compounds in exemplary aged Dézaley wines.
→ *These markers could not be generalized to aged wines from other Vaud terroirs*

Methodological challenges: The "Exemplarity" Panel
→ *Psychological difficulty in assigning a low "exemplarity" score to a wine judged as qualitatively "good." - Need to manage to decouple immediate tasting liking from aging characteristics in future protocols.*

Emerging link between aging potential, nitrogen, and specific nutrient availability in the soil.
→ *New scientific collaboration launched with Biolaffort and CNRS (Bordeaux) to investigate these mechanisms.*

With excellent aging potential,
Chasselas wines deserve to see their reputation further enhanced.
→ *A wine's aging potential elevates not only that specific wine but the entire grape variety and region (e.g., the Burgundy model).*

Acknowledgments

Thanks to all the winemakers who provided the wines for the various studies and who took part in the tastings

Thanks to all the staff members who participated in this study: *the viticulture, oenology, wine quality, and aroma analysis groups at Agroscope as well as the chemical and sensory analysis teams at HES-SO Changins*

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Thanks for your attention