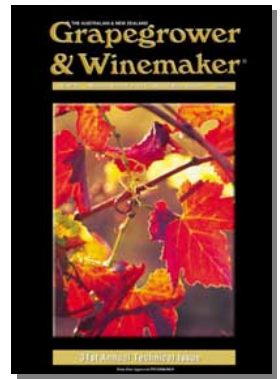


Short maceration : a new mediterranean vision

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Restricting long macerations to specific market segments.

Since 1990, ICV has developed and validated a series of winemaking experiments. We already know that personalised, premium red wines greatly benefit from a maceration lasting 3 to 4 weeks or more with destemmed and crushed grapes, when the technical and microbiological risks associated are avoided. But experience clearly indicates that lengthy macerations are not adapted to most of the grapes grown in the Mediterranean.

Long macerations are limited by commercial and winegrowing considerations.

For a number of grapes, there is nothing to be gained from lengthy macerations. Many markets are not after the tasting characteristics they produce.

Although technically suited to lengthy macerations, when slightly macerated, good quality grapes can produce more commercially viable wines.

Mastering the technical steps to a short maceration from A to Z.

The key to success is a well-respected work schedule. This includes regularly and steadily elaborating large quantities within a limited period of time. This is an industrial type of challenge. It needs to be answered in order to achieve a solid mid-range price positioning.

Benefiting from top end expertise

Long maceration research and development has enabled us to better understand berry composition and the role played by its different elements, as well as the diffusion and stabilisation dynamics of Mediterranean grape composites. Sharing this expertise enables us to better define the technical aims of a traditional short maceration :

- the rapid and thorough diffusion of pigments, tannic complexes, and some of the skin's polysaccharides, without reverting to triturating.
- the rapid and thorough diffusion of tannic complexes and some of the pulp's polysaccharides, without reverting to triturating.
- the stabilisation of the wine's polyphenolic system and its aromatic profile.

A short maceration does not entail an undiscerning, systematic reduction of unitary costs. To consistently achieve the main above outlined objectives, certain techniques have to be respected. This investment is justified by the wine's positioning on certain markets.

Organising winemaking after run off

The frequent and regular supply of oxygen and the stabilisation of the wine's pigments naturally take place under the grape-pomace during a well-mastered long maceration. When it comes to a traditional, short maceration, these acts have to occur after the running off to retain part of their positive effect. Hence they have to be stimulated and included as part of the winemaking. The absence of pomace should not be used as an excuse for not carrying out these actions.

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Key techniques to a short maceration

A short maceration entails a brief vat vinification with the pomace, as well as keeping in mind the entire winemaking procedure. This approach does not shorten the work carried out after devatting. On the contrary.

◆ How to fulfil most objectives during the few days contact between the harvest's juice and the solid matter.

- Mastering the diffusions : **destemming, crushing, enzyme addition, delestage.**

These techniques allow the diffusion of the most important elements. Harsh tannins and other aggressive compounds are not extracted at this stage. The rough manipulation of grapes should be avoided, before and during maceration, to prevent the violent extraction of grassy characteristics. Crushing and delestages do not triturate.

- Mastering the alcoholic fermentation : **choosing a yeast specially adapted to short macerations.**

For the very specific conditions of an optimized short maceration, a yeast has been specially selected : ICV GRE. In those conditions, it brings an original style well adapted to medium range market goals : upfront ripe fruit, good foremouth filling, direct fruity mouthfeel aromas. This yeast is more interesting for this market bracket than other yeasts well known for their positive impact on very long maceration premium wines.

- Mastering the oxygen supply under the pomace : **by a daily delestage or by vigorously supplying oxygen** to all of the juice.

A well-mastered delestage ensures an adequate supply of dissolved oxygen to the macerating and fermenting juice. When the cap is punched or rotating vats used, there needs to be at least one daily oxygenation. Quantity control oxygen injection machines are now available in various forms.

- Deciding upon the best moment to devat : **guided by an under pomace tasting.**

The style of wine sought, the maceration techniques used and grape maturity analysis help predefine the maceration period : e.g. 4 to 6 days. During the actual maceration, tasting verifies colour, structure and aroma objectives. Devatting takes place once these are attained. This is not a simplified method of vinifying. It requires precise, sensorial references in line with production objectives. To simplify, certain tasting sensations vary between 20 to 50% from one day to the next, during the 3rd, 4th or 5th day. These changes and their influence on the wine's future style have to be taken into account.

◆ Organising the winemaking procedures after devatting

- Mastering the quality of racking : **by rapidly eliminating the vegetal lees.**

Racking the day after devatting, has a positive effect on colour stability and the wine's taste and aromas. This remains the case while the juice is still fermenting. Racking helps finish off the fermentation without the plant particles that appear during devatting or pressing. In practice, the enzymes that were added to the fresh grape ensure that the lees are adequately separated. This useful technique is work demanding and goes against most of the traditional procedures carried out after devatting.

- Mastering oxygen supply after devatting : **by programming racking that includes aeration and microoxygenation.**

Before MLF and while the wine has a notable amount of yeast in suspension, the oxygen supply dissolved by the aired racking produces interesting results. A

complementary technique consists in triggering a continuous microoxygenation after the running off.

- **Managing the MLF : by direct inoculating in view of controlling the course and the effects of the Malo.**

During a procedure involving a short maceration, experiments validated in the cellar have demonstrated the importance of a rapidly triggered MLF straight after racking. More recently, the positive impact of certain strains of bacteria on wine's sensorial profile has been demonstrated. Purposefully controlling the Malo is a progressive complementary option that can be exploited in view of a competitive positioning on the market.

- **Mastering « élevage » : by continuing to stabilise the colour and by continuing to develop tasting characteristics.**

After the Malo, the wines profile, its structure and its commercial outlet determine the rest of the winemaking. The type of oxygen supply and frequency, the type of racking and frequency are adapted to meet these objectives. As of this stage, the work schedule can greatly vary from one wine to the next. Following profile evolution by tastings checking predetermined, sensory indicators helps narrow down winemaking choices.

For example, when it comes to Syrah, the main indicators can be the following : no grassy nor sulphur aromas, little astringency, no bitterness on the finish. The wine should already reflect this profile before the Malo and vat « élevage » should ensure that these indicators do not develop. The positive characteristics will then express themselves according to the harvest's initial potential.

An experimental example

A Merlot harvest was equally divided into two identical vats.

◆ **Vinification outline of a short well-mastered maceration :**

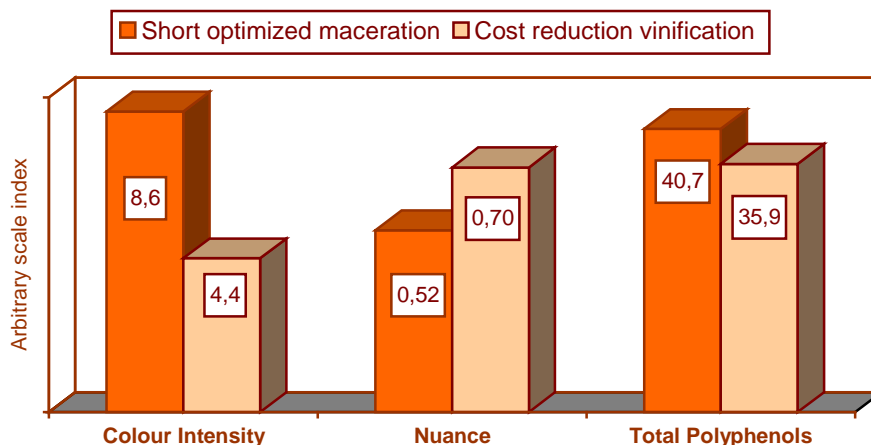
Destemming - crushing - addition of enzymes 1g/hl (ICV Kzym Plus) - sulfiting 5g/hl - addition of yeast 20g/hl (ICV GRE) - maximum temperature of 28°C - a daily delestage - devatting 4 days after cap formation i.e. after 4 delestages - run off and pressing - blending of the first press wines - aired racking 24 hours after devatting - aired racking 48 hours after the first racking - direct inoculation with a selected lactic bacteria - aired racking 24 hours after the end of the Malo - sulfiting 3g/hl.

◆ **Vinification outline in view of a systematic reduction in cost :**

No destemming, crushing, no enzymes, sulfiting 8g/hl, addition of yeast 10g/hl (ICV K 1 Marquée) - maximum temperature of 30°C, a daily pumping over of a 1/3 of the vat - devatting after alcoholic fermentation i.e. after 7 days maceration - run off and pressing, blending of the first press wines, no racking before the Malo - direct inoculation with the same selected lactic bacteria - aired racking 24 hours after the end of the Malo - sulfiting 3 g/hl.

NB : For experimental purposes, the two vats were identically vinified as of the Malo inoculation. Under normal circumstances, the more economic approach should have waited a lot longer for a spontaneous Malo to take place. The following differences should have been greater, without mentioning the possible bacterial risks.

Graph n°1 : Comparing an efficient short maceration with a vinification systematically reducing all costs. Impact on the polyphenolic profile of the wines after maturing. Grape variety : Merlot.



Test carried out at the ICV R & D Department

Financed by the ICV, ONIVINS, and the Conseil Régional Languedoc-Roussillon, as part of the oenology experimentation State/Region plan.

Analysis of Graph n°1

The analytic differences are quite significant after maturing, when such a product is launched on the market. Wine produced following an optimised short maceration has a colour which is distinctly more intense (a 95% increase) and distinctly more red (a 25% decrease). These results prove that the diffusion and colour stabilisation objectives have been achieved. The extractions of the total tannins were proportionally less (a 13% increase). This is an example of selective extraction between stable pigments and total tannins.

On the sensorial level, these two wines are clearly different.

The wine produced following an optimised short maceration has an aromatic profile dominated by the grape variety's fruity, liquorice notes. Its tasting profile is dominated by an attack with volume on the palate, a high tannic intensity, followed by little astringency, by little dryness and an absence of bitterness. This well-known profile is currently adapted to many varietal wine markets.

The wine produced from a cost reduction vinification has an aromatic profile dominated by the smell of sulphur (odours of garlic and rubber), and by grassy smells of hay and cooked pepper. The natural fruity aromas of the grape are not apparent. Its tasting profile is dominated by a flat attack, a low tannic intensity expressing acidity, followed by a proportionally high astringency and a dry, bitter finish. It is well known that this profile is disliked by most of the consumers of this type of product.

In view of finishing off this sensory description, the wines were presented to a wine operator, specialised in varietals. His comments were the following :

- ◆ First wine : "This is an attractive Merlot varietal wine".
- ◆ Second wine : "This wine isn't acceptable, whatever its denomination".

A good tool for managing a difficult harvest

When grapes lack balance or have not ripened properly, a well-managed short maceration is especially interesting. Under these circumstances, there are for example, grapes affected by rot, grapes concentrated by over-maturation and grapes concentrated in polyphenols but with insufficient polyphenolic and cellular maturity.

- Selective extractions are of utmost importance on these types of grapes : taking the best of the harvest and leaving the rest with the pomace's cap. A short maceration is a tool well adapted to meeting these objectives.
- A reduction in cost vinification or a maceration lasting too long produce diluted wines expressing the grapes lack of balance.
- Most of the time trying to correct this type of harvest with additives such as exogene tannins merely ends up increasing these flaws.