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Comparison over a storage period between Petainer Keg filled wine and the same wines bottled by Puklavec & Friends

Test requirements:

Documentation, significant (sensorial) and subtle (perceptual) sensorial changes in direct comparison.

The tasting was implemented using the glass "Schott Zwiesel Vinia"

During each tasting 5 different wines were tasted. The wines were filled in Petainer Kegs (20l) 14th of May 2012. The kegs were flushed with N₂ before filling intensively. For comparisons the same wines, filled in glass bottles, were tasted.

The tastings took place on the 12.06.2012, 24.09.2012, 01.02.2013 and on the 27.05.2013.

The quantitative documentation of the sensorial profiles and their qualitative classification was implemented according to the PAR system. The degustation sheets are attached to this document.

The following wines were tasted:

Red wine 1: high quality cuvee

Red wine 2: standard quality cuvee

White wine 1: standard quality cuvee

White wine 2: high quality cuvee

Sparkling wine: cuvee

Table 1: analytical data of the tested wines

wine number	quality	blend	acid [g/l]	sugar [g/l]	alcohol [%Vol.]
Red wine 1	low quality	Cabernet + Merlot	5,9	5,1	13,2
red wine 2	high quality	Cabernet + Merlot	6	5,4	13,2
white wine 1	low quality	Cuvee	6,7	7,8	11,2
white wine 2	high quality	Saugvignon + Furmint	5,9	2,7	13,1
sparkling wine	highest quality	cuvee	8,2	6,9	12,2

Description of the results in detail:

1. Red wine (both qualities):

Depending upon the PET bottled red wines were fresher regarding aroma. In general both cuvees seemed reductive, which addresses the secondary fruitiness first.

After pouring the wine into the glass the PET wines need more time and air in order to develop their full aroma compared to the bottled wines.

Hidden off-flavour called "reduced-sulphur" (rubber) was not irritating.

The reductive situation of the red wines is not beneficial for the polymerisation within the phenolic range. The more that the non-polymer flavonoids were existent the more closed the wines seemed.

This astringent behaviour disappeared quickly under the influence of air.

At the second tasting on the 01.02.2013 the oxidation within the glass proceeded a lot faster in comparison to the previous tastings.

This would mean that wines, which are "ready to drink" keep this status up to 9 months and more due to their PET bottling. Wines which still require a long Maturation period should not be bottled in PET.

Also the SO₂ situation could improve through the PET bottling because the reduction, and the general freshness, and the CO₂ offer less bonding possibilities for the SO₂.

In general the bottled wines seemed more homogenous but also more mature, older and less dynamic.

2. White Wine 2 (high quality)

In general the Furmint is a rather reductive wine type and especially in the PET container fresher, crisper and slightly slimmer.

Mineral notes as well as fruity-exotic aromas were clearly recognisable and seemed stable during the entire test phase.

For the more mature aromas seemed more dominant in the bottle. These are in accordance to normal reductive aromas and therefore correspond with the beginning of maturity (oxidation).

A decrease in SO₂ demand could also be explained by this stability.

3. White wine 1 (standard quality)

At all four tastings the white wine standard seemed fresh and reductive. The bottled versions were clearly stronger and a little more mature than the PET varieties. Banana, slightly green and phenolic aromas and especially at the final tasting also diacetyl were recognisable through the BSA. (MLF)

This variance can occur due to the start of a beginning oxidation but more likely this occurred from a higher tasting temperature.

4. Sparkling wine

During the first 6 months of storage the PET bottling of sparkling wine seemed ideal. Fresh, fruity and crisp features are constant and stable.

Only at the final tasting did the beginning of maturity seemed recognisable.

Conclusion

Fresh and young wines are best bottled in PET containers. PET storage is furthermore suitable for the gastronomy sector and large scale consumption with open bottles.

Red wines are suitable for PET bottling if they are "ready to drink" and do not require a further maturing period. These are then good for a long period of time. Ideal for serving seasons red wine openly without wood!

Simple secco products, which are already impregnated with CO₂, remain safe, stable and crisp.



Martin Darting, Sensorik International, Wachenheim, den 17.06.2013