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Inspiring innovation.

Enartis Bag-in-Box *Progress* Report:

Testing the effect of  
**Enartis Hideki and Citrostab rH**  
on South African wines packaged in 2 L Bag-in-Box

*Lida Malandra*

In collaboration with  
Dr Carien Coetzee

BASIC WINE

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# BUSINESS INSIDER SOUTH AFRICA

Feb 2021

Wines sales in South Africa fell by 20% last year amid restrictions on alcohol sales during the pandemic.

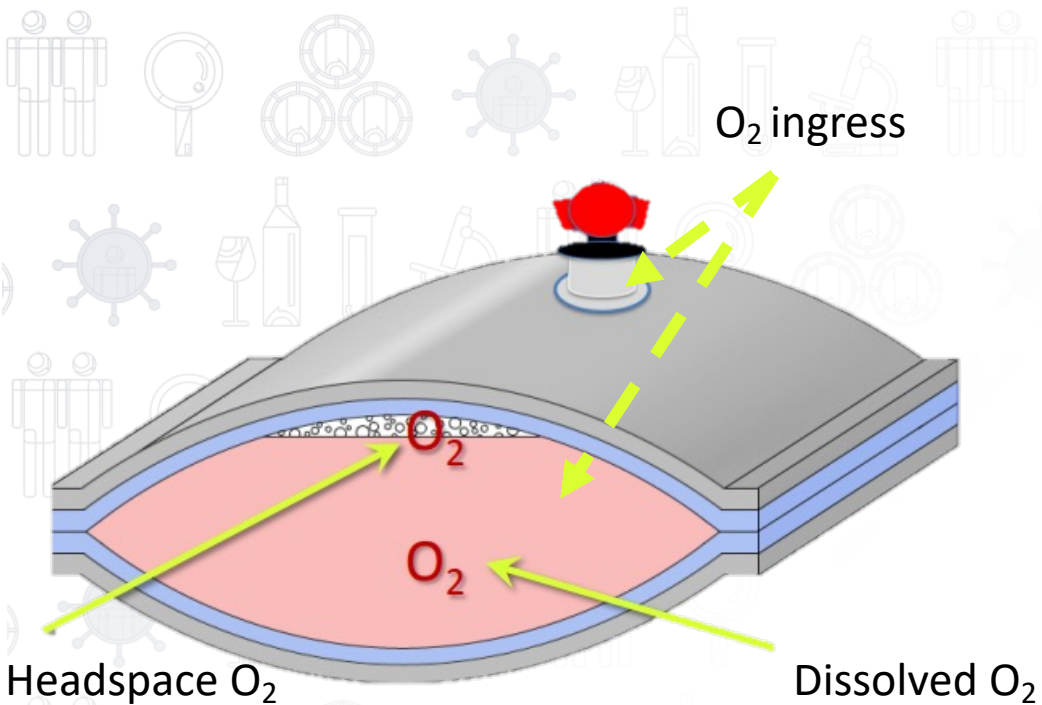
BiB wine sales were more resilient than bottled wine and outsold the latter for the first time ever.

Wine in glass bottles sales dropped 24% to 121.5 million L

BiB sales dropped 10% to 126,3 million L

Covid has strengthened the trend towards boxed wine, which has been growing over the past five years, while demand for wine in glass bottles has stagnated.





**Premature oxidation** of BiB wine remains the **main problem** experienced for this type of packaging

→ Not specific to BiB, however BiB generally allows more oxygen ingress compared to a glass bottle and its closure

*Organoleptic influence*

*Free and Total SO<sub>2</sub>*

*Colour*



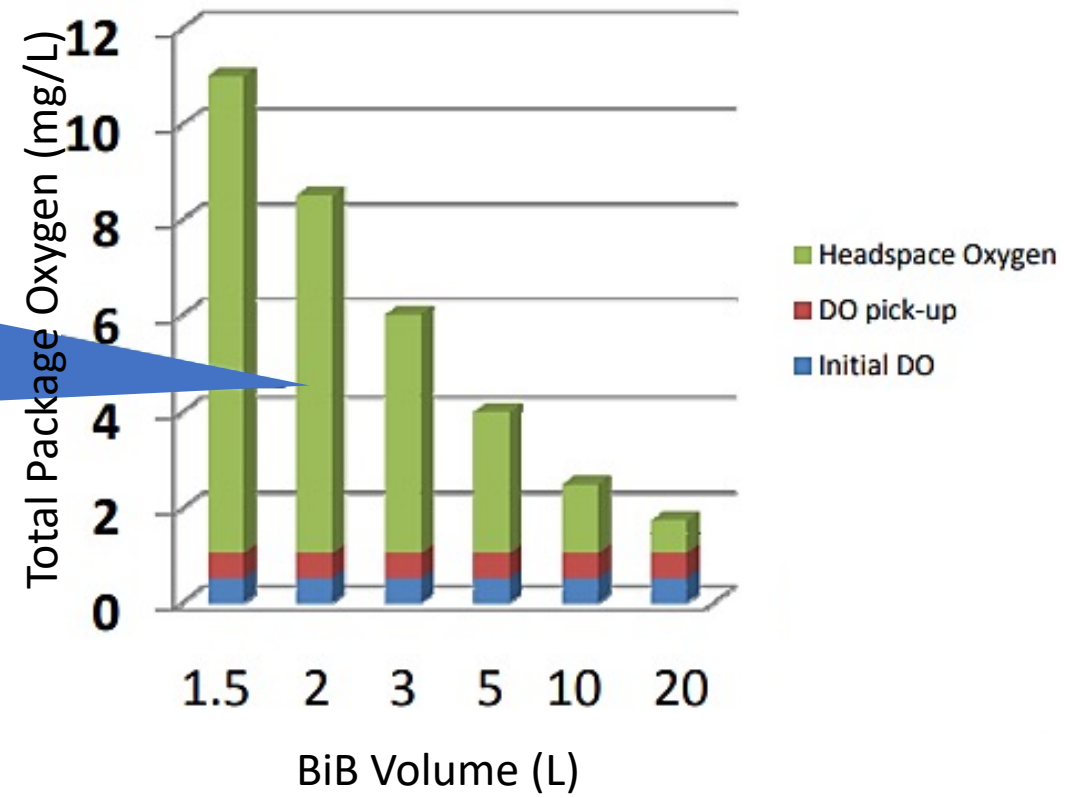
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# WINE/BUBBLE VOL





Smaller BiBs need even better oxygen management



Investigate the effect of the

## **Enartis Citrostab rH and Hideki**

on the performance of a premium wine packaged in a 2 L BIB  
over 12 months

## Sauvignon Blanc

Product	Diemersdal Sauvignon Blanc 2L BIB
Vintage	2021
Lot nr	L331
Bottling date	01/09/2021
Tank	B01
Client	Diemersdal
Control	No Citrostab added
Treatment	15 g/hL Citrostab

## Merlot

Product	Woolworths Merlot 2L
Vintage	2021
Lot nr	L335
Bottling date	02/09/2021
Tank	T207
Client	Darling Cellars
Control	No Hideki added
Treatment	5 g/hL Hideki

Half of the BIBs received Enartis product at the recommended dosage, while the other half of the BIB received none (Control).

The BIB samples were stored in a temperature-controlled environment and analysed during specific intervals over a period of 12 months:

Date	Stage	Months since filling	Format
02-Sep	Before product		Tank sample
02-Sep	After filling		2 x Control BIB 2 x Treatment BIB
06-Sep	1 Week	0.1	2 x Control BIB 2 x Treatment BIB
29-Sep	1 Month	0.9	2 x Control BIB 2 x Treatment BIB
25-Oct	2 Months	1.8	2 x Control BIB 2 x Treatment BIB
22-Nov	3 Months	2.7	2 x Control BIB 2 x Treatment BIB
14-Feb	6 Months	5.5	2 x Control BIB 2 x Treatment BIB
09-May	8 Months	8.3	2 x Control BIB 2 x Treatment BIB
22-Aug	12 Months	11.8	2 x Control BIB 2 x Treatment BIB



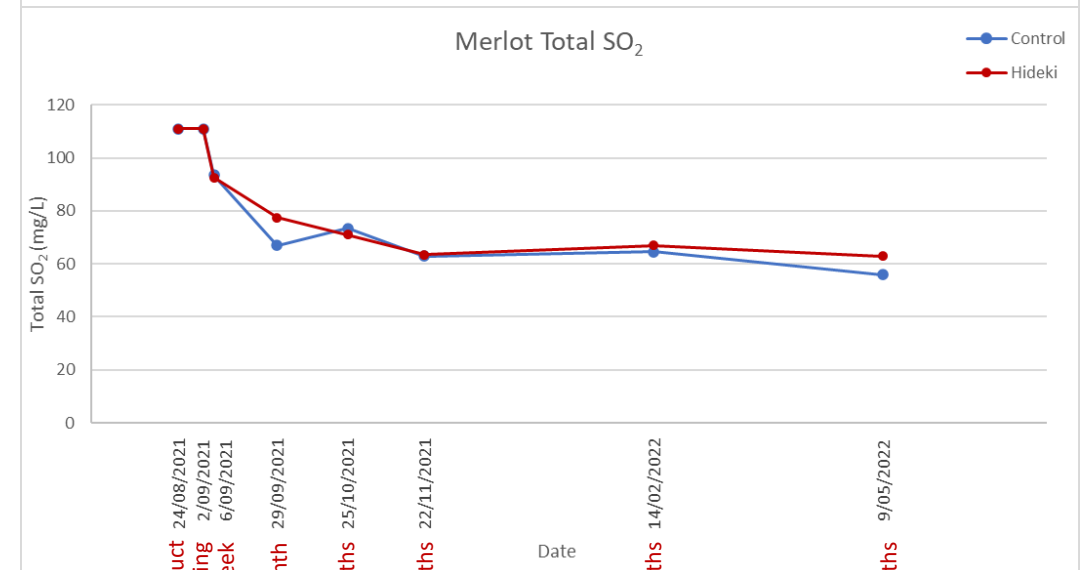
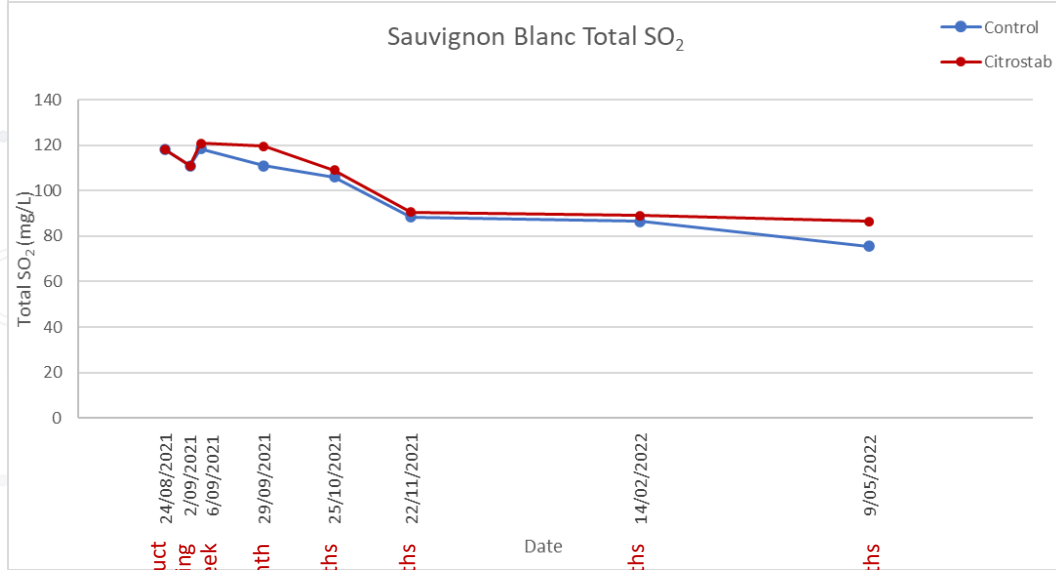
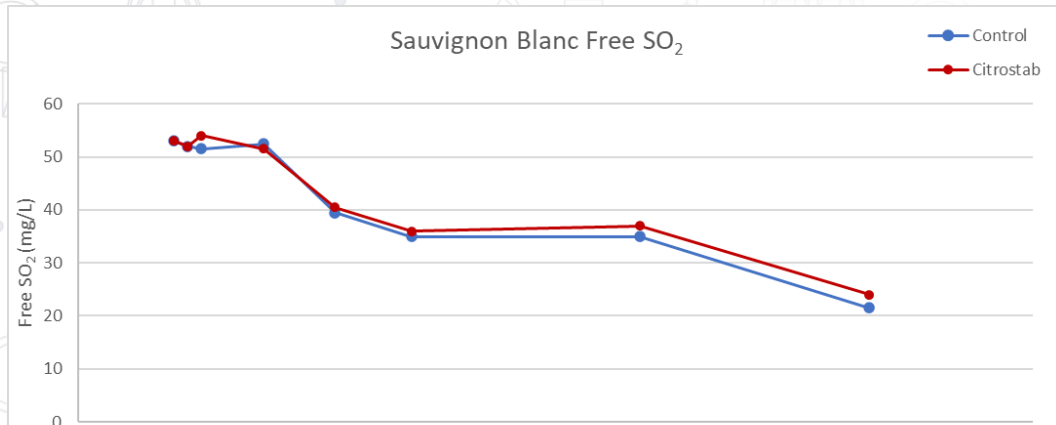
\*Average of the two duplicates reported

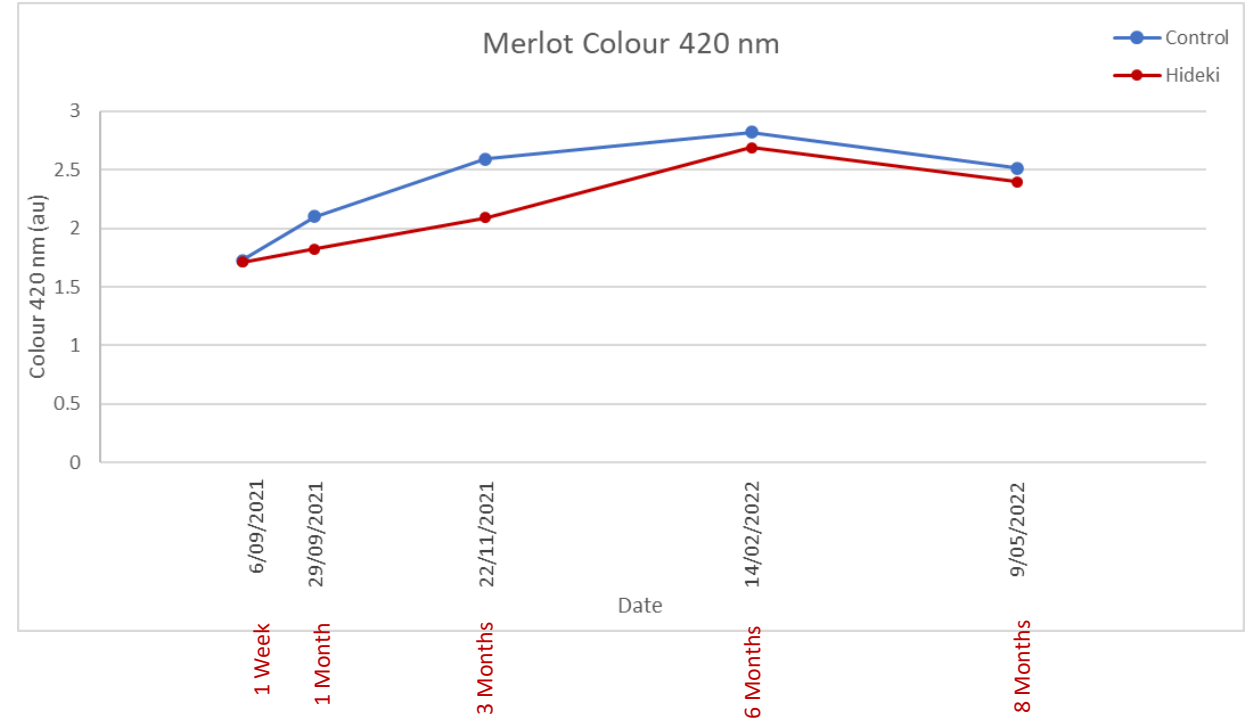
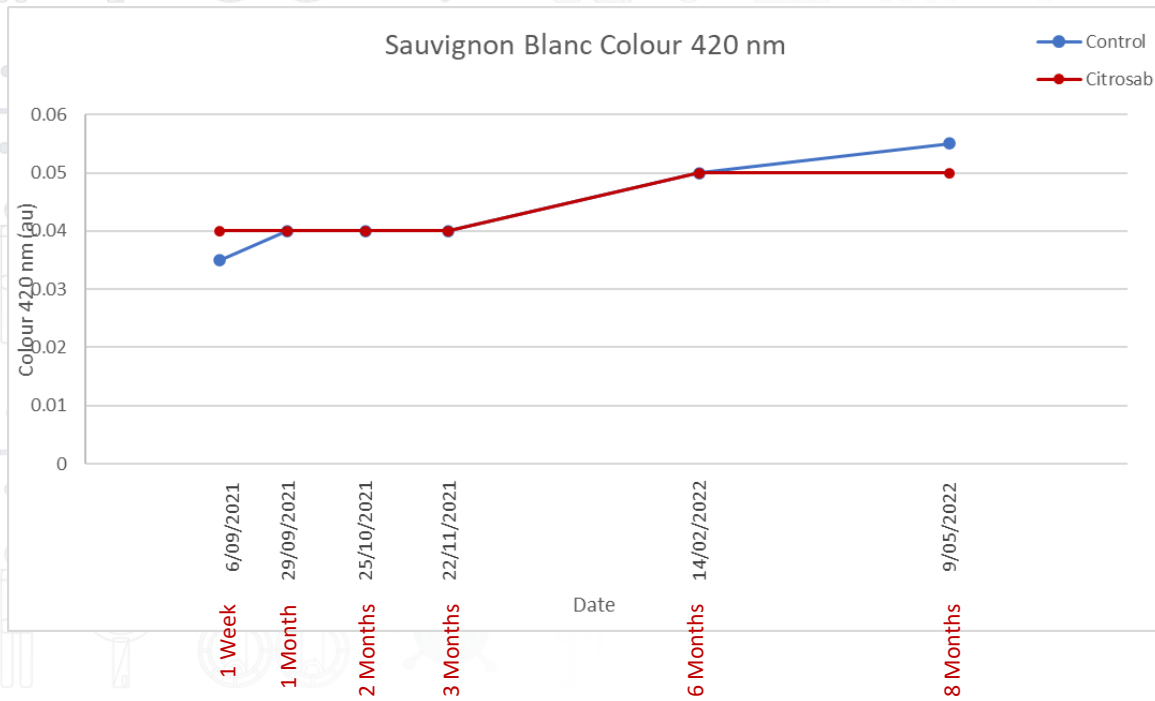




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# RESULTS: SULPHUR DIOXIDE

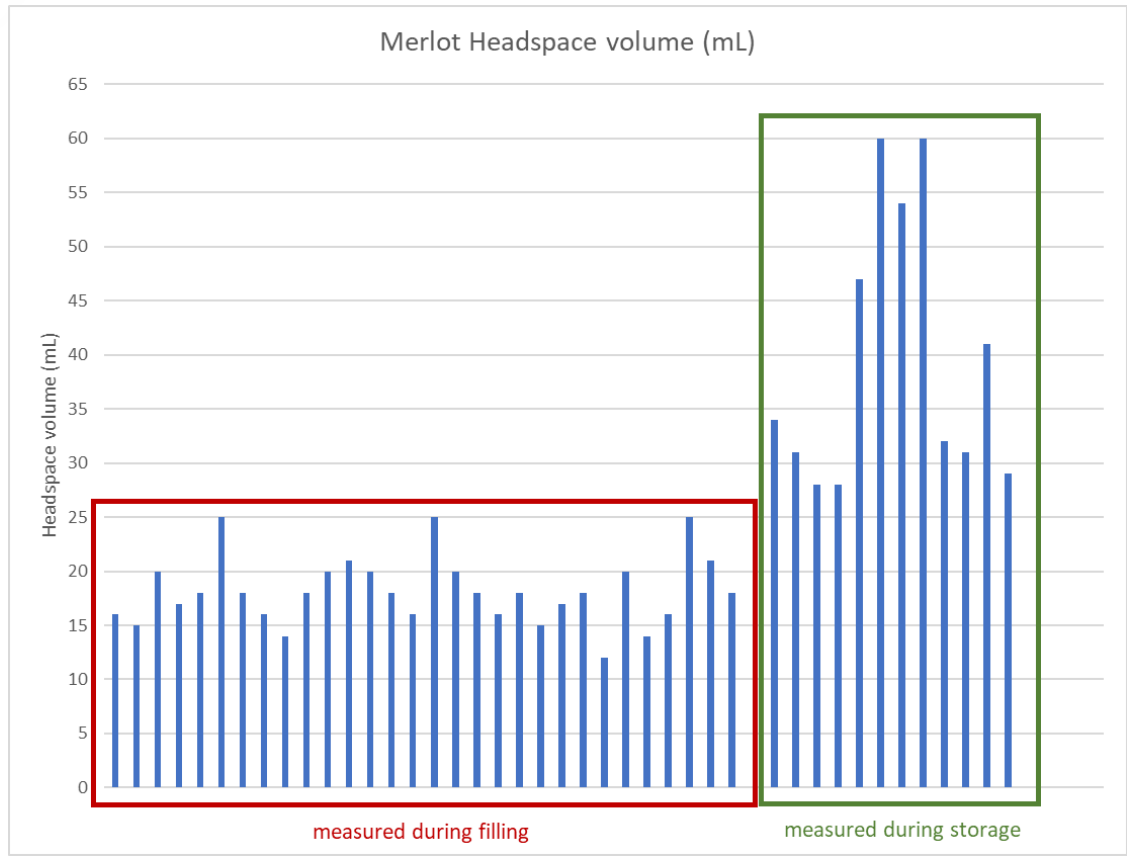
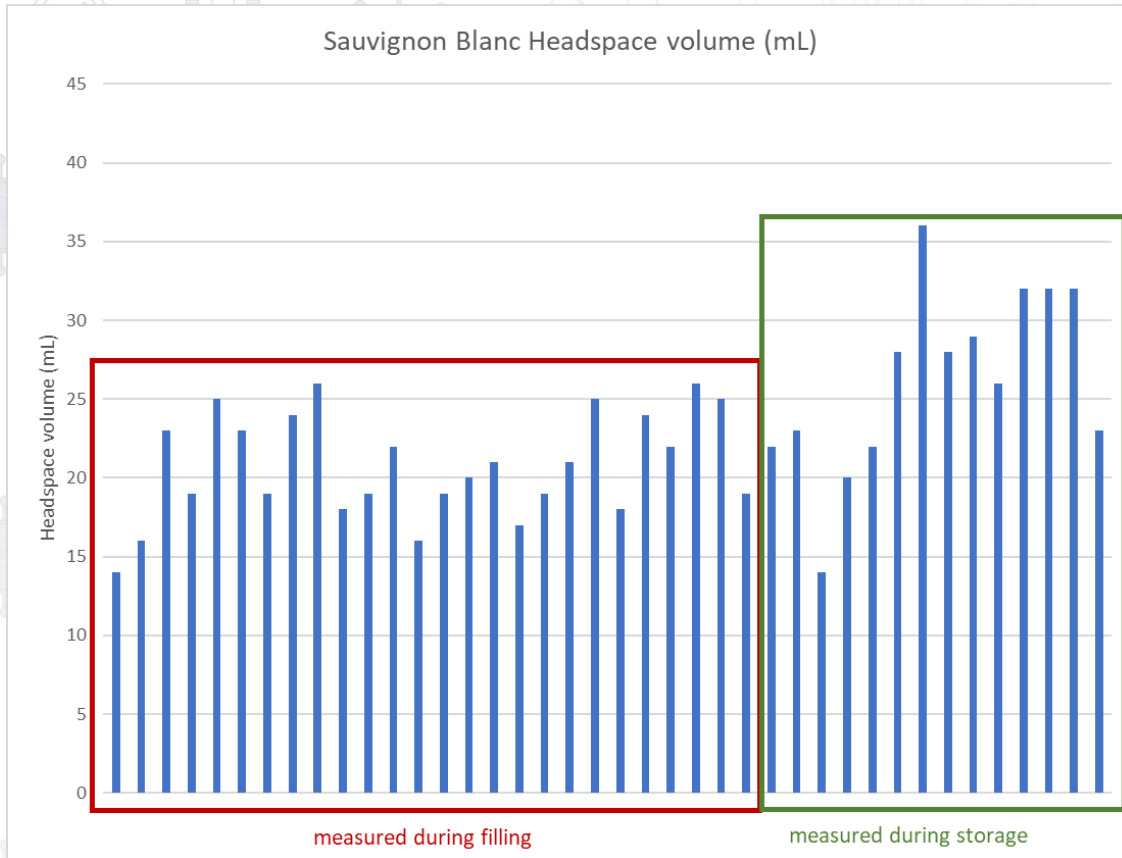






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# RESULTS: BUBBLE VOLUME





Darling Cellars – BIB Project  
9 May 2022  
"8 months" sensory evaluation  
Filling date 2 September 2021

Name:



Merlot

1 Are there differences between the wines?

YES  NO

If YES, continue to question (2). If NO, give a short description of the wine.

2 Sort the wines into two groups (two wines per group). Sort similar wines in the same group.  
Indicate how you chose the groups. For example, did you base your decision on specific aromas or taste characteristics?

Group 1Group 2

3 Arrange the wines

1

2

3

4

"Most preferred""Least preferred"

Give a short reason for the specific arrangement  
(what did you like and dislike)

# SENSORY

- Tasters consisted of Darling Cellar winemakers, Enartis representatives and Carien (Basic Wine).
- Two Control wines and two Treatment wines (four wines in total) were presented to the judges
- Blind and randomized
  - The treatment and corresponding number were only revealed to the judges after the sensory evaluation sheet was filled in by all judges.



Sauvignon blanc



Merlot



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# SENSORY



Sauvignon blanc

**Darling Collars – BIB Project**  
 9 May 2022  
 "8 months" sensory evaluation  
 Filling date 2 September 2021  
 Name: \_\_\_\_\_

**1** Are there differences between the wines?  
 YES  NO  
 If YES, continue to question (2). If NO, give a short description of the wine.  
 \_\_\_\_\_  
 \_\_\_\_\_

**2** Sort the wines into two groups (two wines per group). Sort similar wines in the same group.  
 Indicate how you chose the groups. For example, did you base your decision on specific, aroma or taste characteristics?  
 Group 1: \_\_\_\_\_  
 Group 2: \_\_\_\_\_

**3** Arrange the wines  
 1  2  3  4  
 "Most preferred" → "Least preferred"  
 Give a short reason for the specific arrangement  
 (what did you like and dislike)  
 \_\_\_\_\_  
 \_\_\_\_\_

Merlot

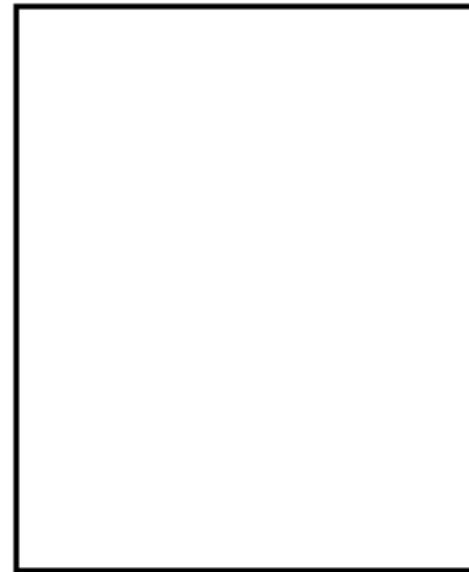
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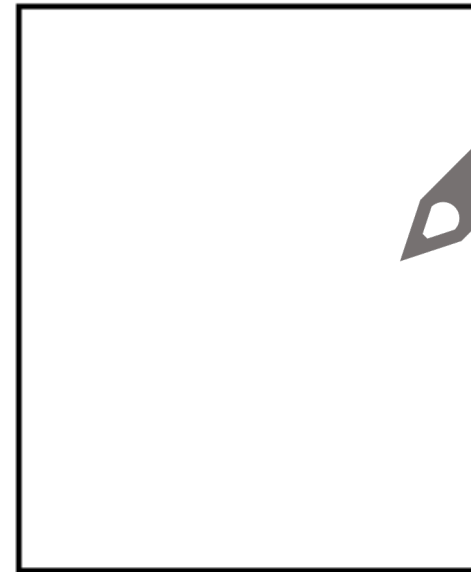
*Sauvignon blanc*

Sort the wines into two groups (two wines per group). Sort similar wines in the same group.

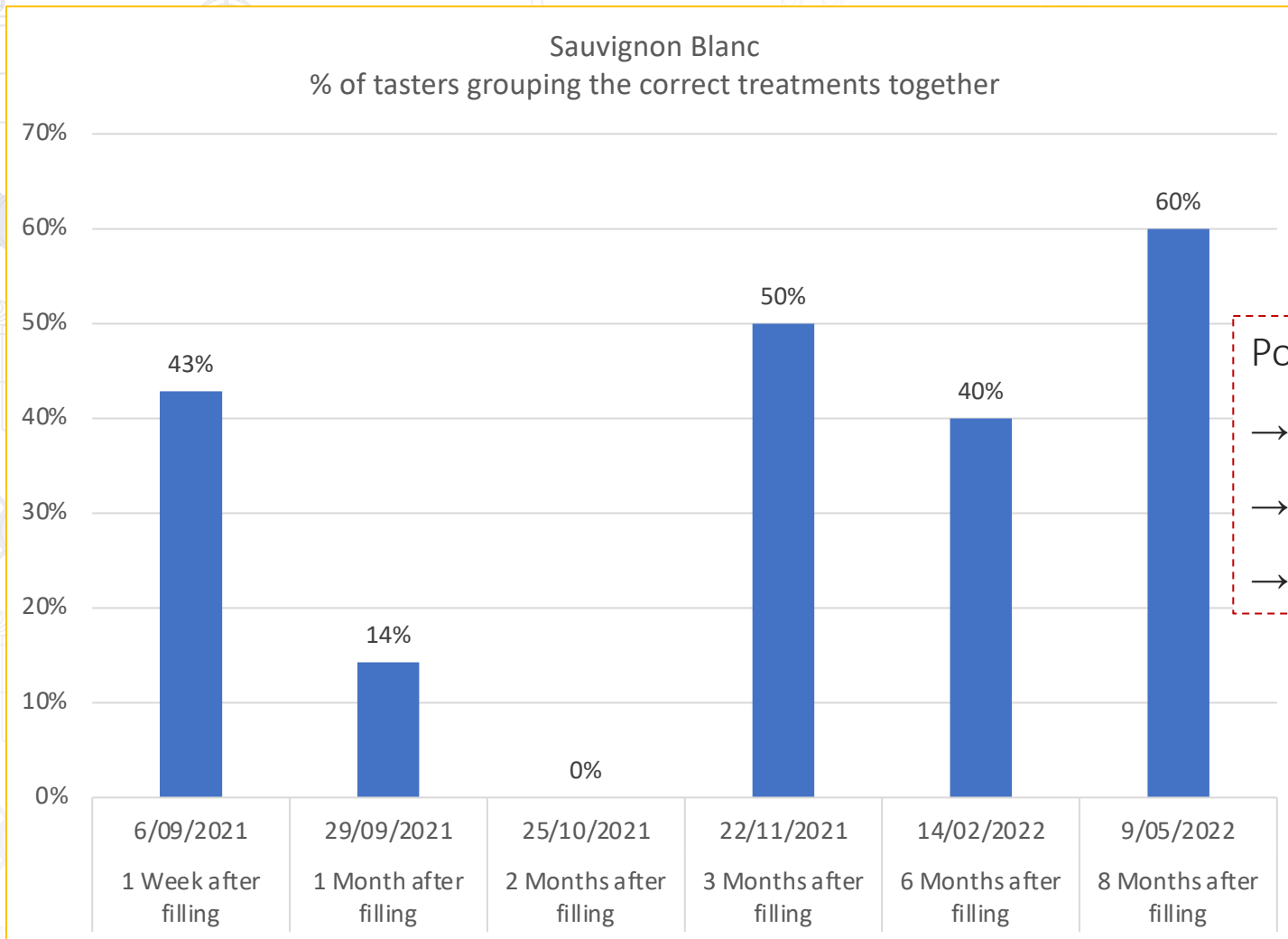
Indicate how you chose the groups. For example, did you base your decision on specific aromas or taste characteristics?



Group 1



Group 2



Poor sorting % can be due to

- Differences between the two repeats **OR**
- No difference between the Control and the Treatment **OR**
- Both



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# SENSORY: PREFERENCE

Arrange the wines



1



2



3

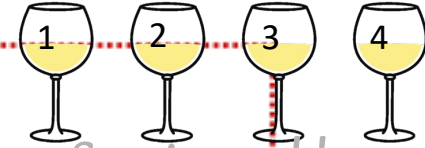


4

"Most preferred"



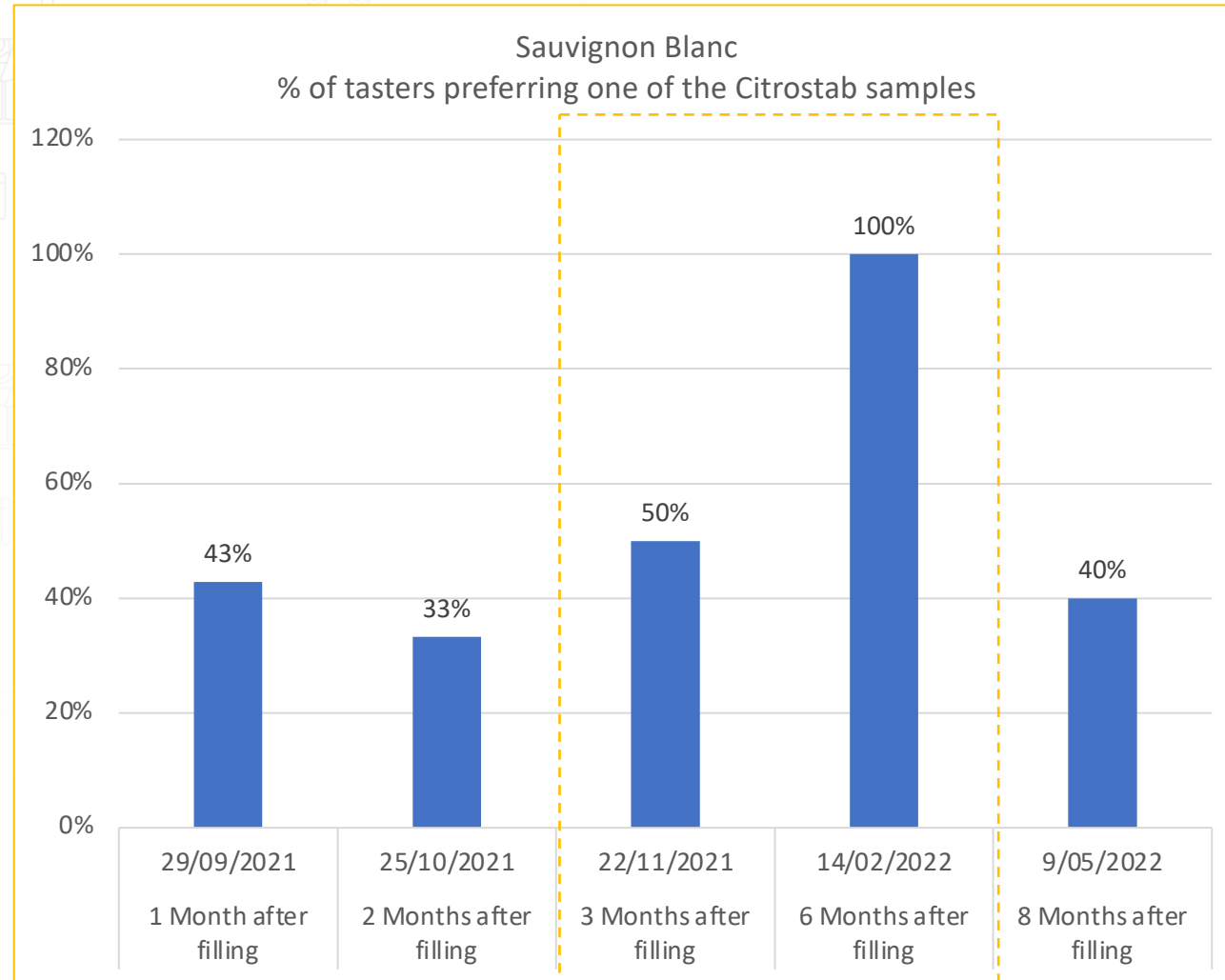
"Least preferred"



Sauvignon blanc

Give a short reason for the specific arrangement  
(what did you like and dislike)







1 Week	"Only slight differences"
1 Month	"Differences observed are box differences and not differences due to the treatment"
2 Months	"Normal box differences and not treatment differences. Everybody is satisfied with the quality"
3 Months ★	<p>"(Control) healthy green colour. (Citrostab) pink hue. Differences on colour. Aroma and taste very similar."  <b>"(Control) more of a brown colour, less fruit, watery, flat, thinner - still nothing wrong. (Citrostab) fresher, greener, more fruit, and green and length and fullness.</b>  <b>"Differences are small. (Citrostab) somewhat fresher, more fruit, more lively"</b></p>
6 Months ★★	<p><b>"(Citrostab) fresher. (Control) a little bit more lifeless, slightly less fruit. Differences are small"</b>  <b>"(Citrostab) pronounced acidity, crisp and zesty - green notes, grapefruit, acid. (One of the Controls) flat on the nose, green palate, flabby."</b></p>
8 Months	<p>"All are somewhat overaged. Fruit is lost. <b>No colour differences. No pinking. Ageing character setting in.</b>"          "(One of the Citrostabs) most expressive on nose, zesty and full palate. (One of the Citrostabs) less expressive than (the other Citrostab), palate more fruity - open up and was better in a bit of time. (One of the Controls) flat on the nose, flat acidity. (One of the Controls) oxidised, watery "dead".          "(Controls) least expressive on the nose."          "Wines are very similar-quiet on the nose. (Controls) more full on the palate. Slightly more fruit"</p>



**Darling Cellars – BIB Project**  
 9 May 2022  
 18 months' sensory evaluation  
 Filling date 2 September 2021  
 Name: \_\_\_\_\_

**1** Are there differences between the wines?  
 YES  NO  
 If YES, continue to question (2). If NO, give a short description of the wine.  
 \_\_\_\_\_

**2** Sort the wines into two groups (two wines per group). Sort similar wines in the same group. Indicate how you chose the groups. For example, did you base your decision on specific aromas or taste characteristics?  
 Group 1: \_\_\_\_\_  
 Group 2: \_\_\_\_\_

**3** Arrange the wines  
 "Most preferred"  1  2  3  4 "Least preferred"  
 Give a short reason for the specific arrangement (what did you like and dislike)  
 \_\_\_\_\_

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Sort the wines into two groups (two wines per group). Sort similar wines in the same group.

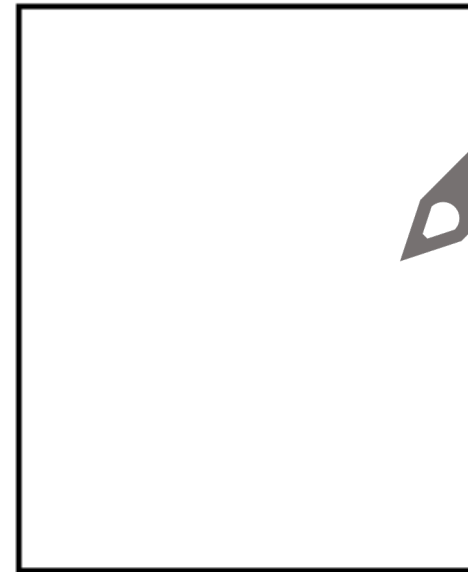
Indicate how you chose the groups. For example, did you base your decision on specific aromas or taste characteristics?



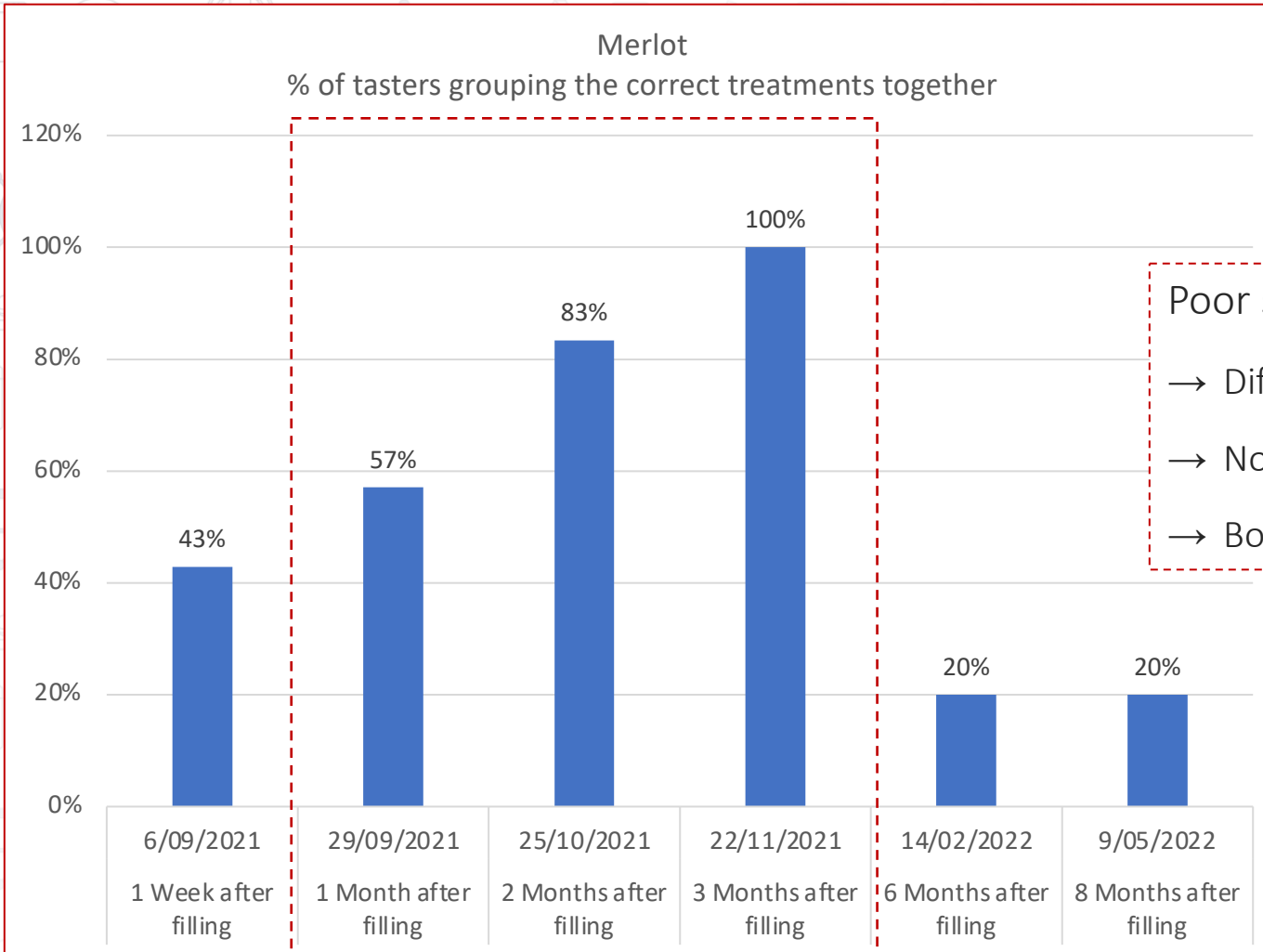
Merlot



Group 1



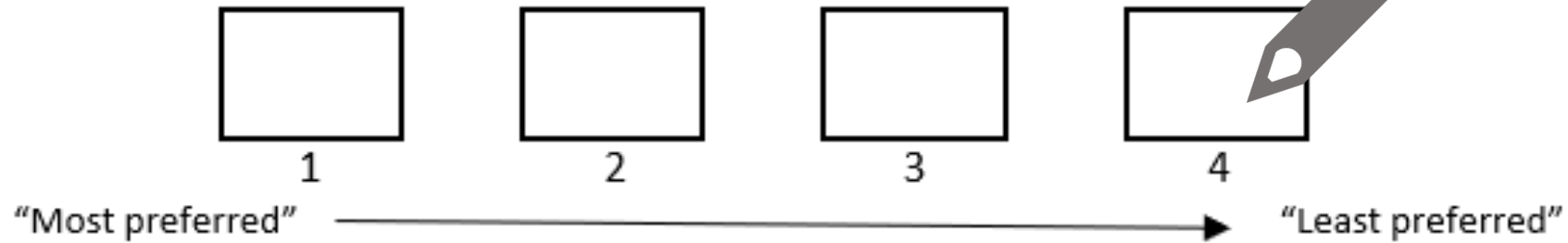
Group 2



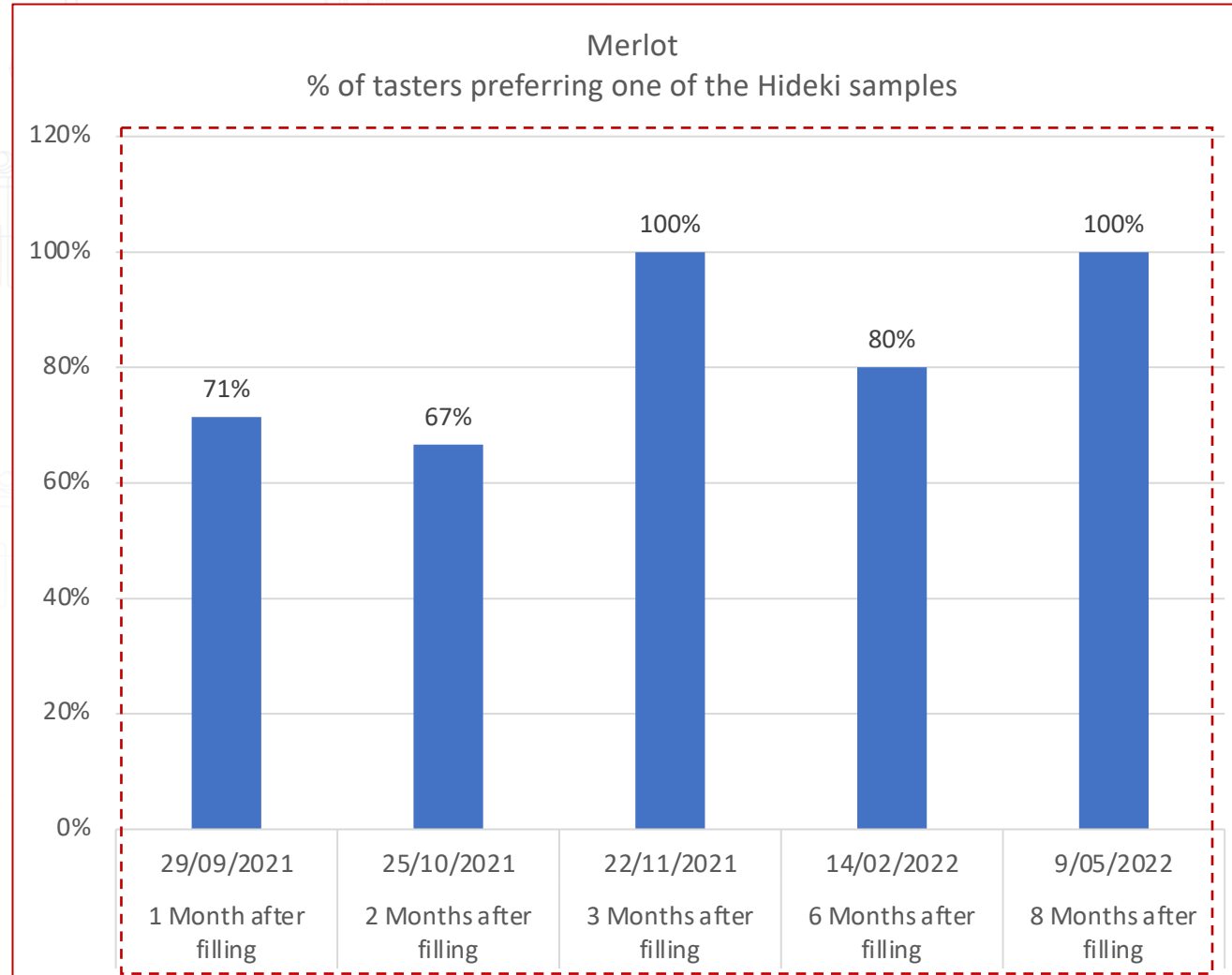
Poor sorting % can be due to

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- Both

Arrange the wines



Give a short reason for the specific arrangement  
(what did you like and dislike)





1 Week	★	"(Hideki) more rounded and complex, more tannin. (Control) softer."
1 Month	★	" <b>(Control) has less fruit and freshness. (Hideki) is fuller with grippy tannin with most fruit and freshness, tannin, fuller mid palate.</b> " "(Hideki) lighter in colour, clean fruit. (One Control sample) completely oxidised. (One Control sample) good colour, clean fruit, somewhat aged."
2 Months	★★	" <b>(Control) slight oxidation, less fruit and length. (Hideki) more fruit and length, more balance and fullness.</b> " "(Control) apple-like, sour berries. (Hideki) more subtle, but elegant. Overall intensity lower, slightly softer on the palate." "(Control) fruitier on the nose and palate. (Hideki) nose is shy, palate big fruit."
3 Months	★★	"(Hideki) clean fruit. (Controls) showing oxidation and ageing characters but still acceptable. " "(Controls) porty, ageing, oxidation, sour. (Hideki) fruity." " <b>(Controls) are subdued on the nose, shorter length and fullness. "Hideki" fresh fruit on the nose, good fullness and length, red berry, prune, cherry.</b> " "(Control) aroma more subdued. (Hideki) higher fruit intensity, soft tannin." " <b>(Controls) aged and porty. (Hideki) punchy red fruit, velvety tannins, red cherry sharpness, good length and persistence.</b> " "(Hideki) red fruit, good balance" After reveal: "Starting to see what Hideki is capable of"
6 Months	★	"(Hideki) more balance with fruit on the nose. (One of the Controls) slight aged character" "All the wines are quite jammy" "All the wines have developed character, but not yet a fault"
8 Months	★	"All wines have some aged character (raisins). (One of the Controls) is oxidised showing the most ageing. " " <b>(One of the Controls) oxidised. (Hideki) slightly better, more fruity. The wines are still acceptable.</b> "



## Enartis Bag-in-Box *Progress Report*:



- Differences in chemical analyses not showing major differences between the two treatments. 12-months analyses would provide more information.
- Sensory analyses shows **good** to **very good** performance of the wines treated with the products (effect often seen at specific stages)
- 12 Month analyses due in August 2022

The logo for 'enartis' is displayed in a blue, lowercase, sans-serif font. The letter 'a' is stylized with a red semi-circle above it. The background of the entire page features a pattern of light grey scientific icons, including beakers, flasks, and human figures, set against a white background.

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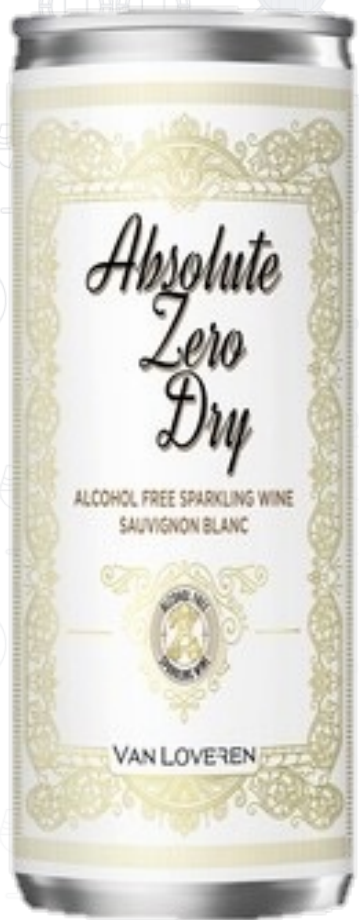
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# De-Alcolized Canned Wine

Lida Malandra



23 August 2021

Sauvignon Blanc – de-alc

All wine was dosed with 12g/hL Hideki

Treated – 5g/hL Citrostab rH