

Reducing Green Character with Yeast Strains (Enartis) (2017)

Fabbioli Cellars

Submitted by Meaghan Tardif

Summary and Introduction

This study examines the impact of different yeast strains on green character in Cabernet Franc. Cabernet Franc grapes were harvested and processed on the same day into 3 separate T Bins. Each T Bin received 25ppm sulfur dioxide and were then inoculated with either CSM (ScottLabs), D254 (ScottLabs), or D20 (Enartis). D20 yeast may reduce green character through higher fermentation temperatures blowing off pyrazine (Enartis 2018), therefore this T bin was fermented in the sun. CSM was chosen because it is also marketed as being able to reduce green character (Scott Laboratories 2018), but since it did not specify a higher fermentation temperature, this treatment was not fermented in the sun. Each T Bin was punched down twice per day and pressed on the same day for 9 days of maceration. All other treatments between wines were identical. All yeast strains had similar fermentation kinetics, with D20 perhaps being slightly warmer. Wine chemistry was similar between treatments, except that IBMP was slightly lower in the D20 yeast treatment. There were no strong trends for the descriptors used in this study. There was a slight trend for the CSM wine to have higher Fruit Intensity, and for the CSM and D20 wines to have higher Astringency. There was a slight preference for the D254 wine.

Results and Discussion

All yeast strains had similar fermentation kinetics, with D20 perhaps being slightly warmer. Wine chemistry was similar between treatments, except that IBMP was slightly lower in the D20 yeast treatment.

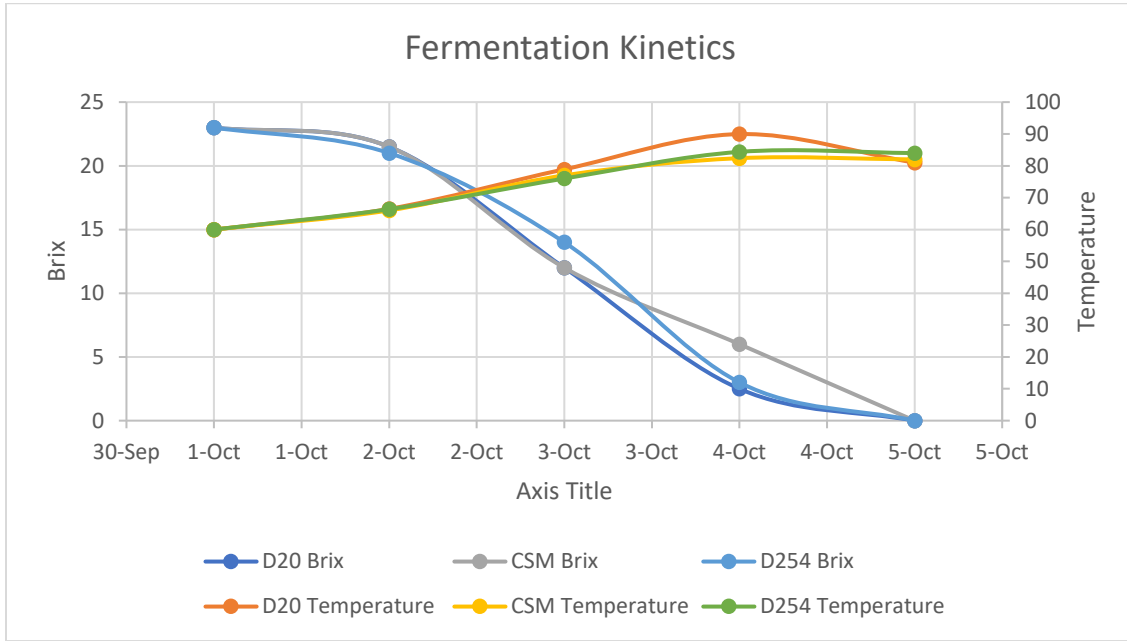
Juice Chemistry				
	Brix	pH	TA (g/L)	YAN (mg N/L)
Juice Chemistry	20	3.46	7.2	213

Wine Chemistry											
	Ethanol (%vol/vol)	Residual Sugar (g/L)	pH	TA (g/L)	Volatile Acidity (g/L)	Malic Acid (g/L)	Lactic Acid (g/L)	IBMP (ng/L)	Total SO ₂ (ppm)	Free SO ₂ (ppm)	Molecular SO ₂ (ppm)
D254 Yeast	13.49	<1	3.97	4.29	0.66	<0.15	1.90	8.4	<10	<7	0
D20 Yeast	13.68	<1	4.00	4.27	0.70	<0.15	1.84	7.0	<10	<7	0
CSM Yeast	13.71	<1	3.98	4.26	0.55	<0.15	1.80	8.2	24	<7	0
% Change D20	1%		1%	0%	6%		-3%	-17%			
% Change CSM	2%		0%	-1%	-17%		-5%	-2%			

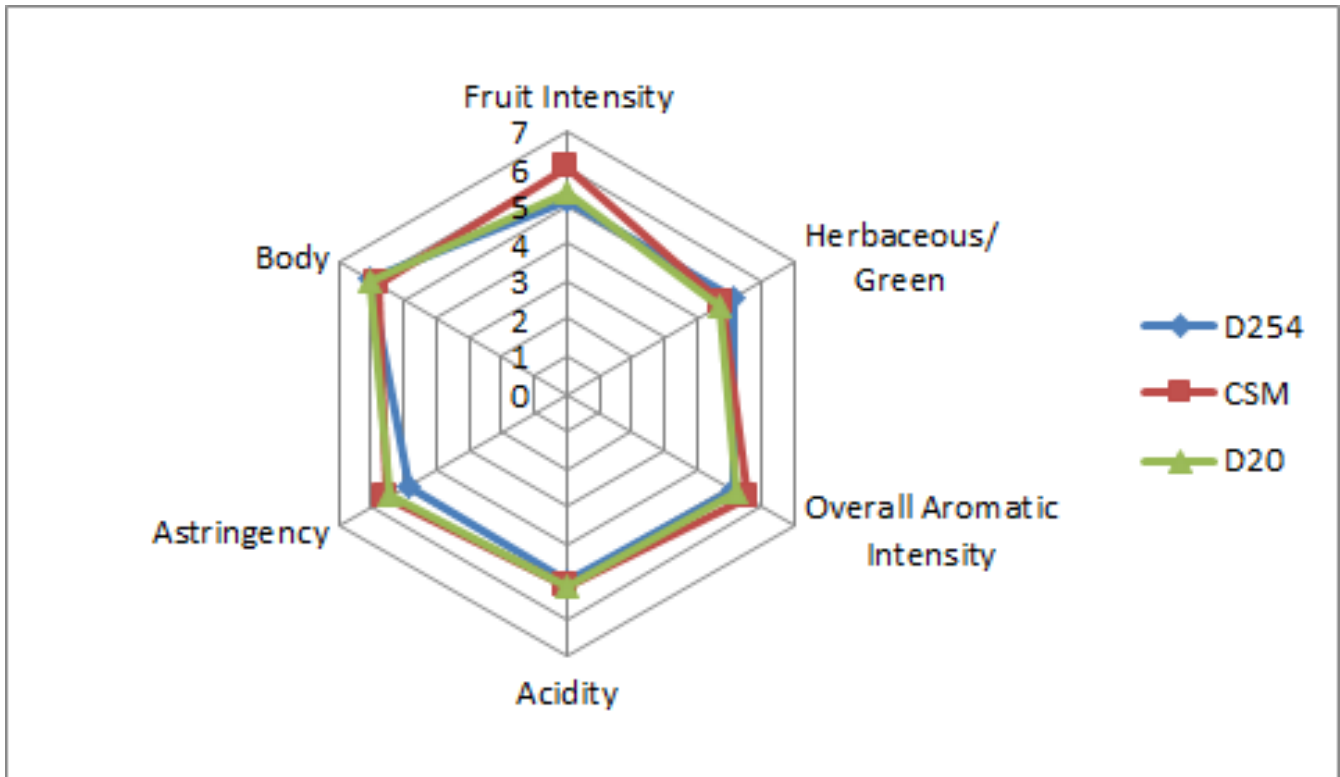
Results from ICV in Mid March 2018, Except for IBMP from ETS

Color Profile					
	A420	A520	A620	Hue (420/520)	Intensity (420 + 520 + 620)
D254 Yeast	0.266	0.361	0.093	0.737	0.720
D20 Yeast	0.291	0.392	0.100	0.742	0.783
CSM Yeast	0.260	0.361	0.094	0.720	0.715
% Change D20	9%	9%	8%	1%	9%
% Change CSM	-2%	0%	1%	-2%	-1%

Results from ICV in Mid March 2018



There were no strong trends for the descriptors used in this study. There was a slight trend for the CSM wine to have higher Fruit Intensity, and for the CSM and D20 wines to have higher Astringency. There was a slight preference for the D254 wine.



	D254	CSM	D20	Total Votes
Most Preferred	56%	33%	11%	9
Second Most Preferred	25%	25%	50%	8
Least Preferred	22%	44%	33%	9

Methods

Cabernet Franc grapes were harvested and processed on September 30, 2017 into 3 separate T bins. Each T bin received 25ppm potassium metabisulfite, Color X Enzyme (60mL/ton), and oak chips (1lb/ton) and were mixed through punch down. Must was inoculated at 166g/ton (with 208g/ton Go Ferm) on October 1 with the following yeast strains:

1. CSM (ScottLabs)
2. D254 (ScottLabs)
3. D20 (Enartis)

An attempt was made for the D20 yeast fermentation to ferment at higher temperatures by leaving the bins outside in the sun during fermentation. Each T bin received 2 punchdowns per day. Must was chaptalized to bring Brix from 20 to 23. On October 3, each fermentation received 263g of Fermaid K. All lots were pressed separately on October 9 and inoculated with VP41 malolactic bacteria.

These wines were tasted on April 18. In order to balance the data set to perform statistical analysis for descriptive analysis, any judge who had not fully completed the descriptive analysis ratings were removed. In order to then make the number of judges between groups equivalent, one judge from group 1 was transferred to group 3, and another judge from group 2 was eliminated. This resulted in a final data set of 3 groups, each with 3 judges (considered as replications within groups, and groups were considered as assessors). Data was analyzed using Panel Check V1.4.2. Because this is not a truly statistical set-up, any results which are found to be statistically significant ($p < 0.05$) will be denoted as a “strong trend” or a “strong tendency,” as opposed to general trends or tendencies. The statistical significance here will ignore any other significant effects or interactions which may confound the results (such as a statistically significant interaction of Judge x Wine confounding a significant result from Wine alone). The descriptors used in this study were Fruit Intensity, Herbaceous/Green, Overall Aromatic Intensity, Acidity, Astringency, and Body.

References

Enartis. 2018. Enartis Ferm D20. <http://shop-usa.enartis.com/enartis-ferm-d20>

Scott Laboratories. 2018. Enoferm CSM. <http://www.scottlab.com/product-49.aspx>