

SMOKE TAIT MITIGATION PROTOCOL FOR FINISHED WINE.

Lab Trial - Zimarom Enzyme + FPS Vegetable Carbon:

- 1) Zimarom Enzyme at 3g/hL (0.25#/1000g) in contact with wine usually 3 to 5 days at no less than 65 F so that the enzyme is active. Different doses, sugar concentrations, and temperatures will influence the contact time and dosage needed for the enzyme to act. The use of the enzyme is required to release a greater fraction of the bound smoke aromas, reducing the probability of the problem reoccurring as the wine evolves.
- 2) Run enzyme trial in duplicates or triplicates to assure good data and evaluate by tasting after 3 days, 4days, 5days, etc. to detect any smoke taint sensory increases. This way you get an idea if the enzyme keeps increasing the smoke taint in time due to the release of the bound form.
- 3) When there is no significant difference in the increase of smoke aromas one day to the next, then you have reached the appropriate contact time. The expectation is that there is no bound fraction left.
- 4) At this point add different dosages of FPS carbon to the same Zimarom treated samples. 60, 80, 100 g/hL for example. Please keep in mind this is not the typical carbon that removes color and higher dosages are appropriate. Keep FPS carbon in contact for about 3 days.
- 5) Mix the carbon samples twice per day to give maximum contact time on the FPS Carbon.
- 6) Taste and evaluate to see the impact on smoke taint removal on aroma and palate to decide the best moment to separate the carbon (usually a period of 3, 4 days is enough to remove the volatile phenols).
- 7) You will also determine which FPS dosage is best for the particular wine to be treated.

Monitor and track your wine for smoke taint with an external laboratory if possible:

1. Initial Ethyl phenols in the wine.
2. Ethyl phenols post Zimarom enzyme treatment application.
3. Ethyl phenols post FPS treatment application.

* Keep in mind that during harvest time laboratories have long lead times and sensory evaluation might be the best option for immediate treatment!

Production Scale - Zimarom Enzyme + FPS Vegetable Carbon:

We suggest to carry the treatment in 2 phases. If final treatment is 3 g/hL of Zimarom and 100 g/hL of FPS Carbon proceed as follow:

1. The wine temperature should be no less than 65 F so that the enzyme is active.
2. Do the 1st phase treatment at 2.0 g/hL of Zimarom and immediately after the enzyme waiting period, add 75 g/hL of FPS Carbon.
3. Use the same contact time for each product as concluded during Lab Trails.
4. Mix Carbon by pump over/Guth mixer once per day during the Carbon treatment time to give maximum exposure.
5. Clean rack from the FPS according to the lab trials performed.

6. Evaluate Results by taste and aroma then do 2nd phase treatment OR wait for lab analysis if an option.
7. Start the 2nd phase treatment at 1.0 g/hL Zimarom and 25 g/hL FPS Carbon. *(If results are within acceptable values, you can reduce carbon dosage in this phase.)*
8. After the determined contact time with FPS, add Mastervin Compact at 5g/hL and wait 3 days before clean racking and preferably do an X flow filtration to separate any carbon residual. (attention to the membrane's integrity!)

N.B.

1. MASTERVIN COMPACT is a specific bentonite applicable to red wines that will respect the wine's color and is used to help with faster settling and removal of the Carbon.
2. FPS is a specific enological carbon that will target phenolic substances and respect the color in the wine (example of analysis from 2017 shown below).

		CONTROL	+100g/hL FPS
Trial 1	Catechins	14	11
	Tannin	694	673
	Polymeric Anthocyanins	61	61
	Total Anthocyanins	406	367
Trial 2	Catechins	7	5
	Tannin	705	675
	Polymeric Anthocyanins	64	62
	Total Anthocyanins	465	442
Trial 3	Catechins	8	6
	Tannin	613	597
	Polymeric Anthocyanins	45	44
	Total Anthocyanins	299	249

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