

WINE DOCTOR



enartis

Inspiring innovation.



YEAST



NUTRIENTS



BACTERIA



ENZYMES



TANNINS



SO₂



STABILIZING AGENTS



FINING AGENTS



SULFITING AGENTS



OAK ALTERNATIVES



We support customers from the earliest stage of harvest through aging and bottling with premium

YEAST • NUTRIENTS • BACTERIA • ENZYMES • TANNINS • SO₂
STABILIZING AGENTS • FINING AGENTS • SULFITING AGENTS
OAK ALTERNATIVES



This document contains tips and advice on products used to correct the most common wine defects. To evaluate their effects and determine the optimal dosage, we recommend setting up trials.

Depending on the time available for treatment, specific products will be suggested.





WHITE WINES

1 GRAPE RECEPTION

PROBLEMS	CAUSES	SOLUTIONS
<ul style="list-style-type: none"> ● Oxidation ● Microbiological contamination ● Extraction of unwanted compounds 	<ul style="list-style-type: none"> ● Grape health ● Hand vs. machine harvested ● Transport and damage (temperature, transport time) 	EnartisTan Blanc, EnartisTan Antibotrytis, AST, EnartisStab Micro M, Winy

GOALS	STRATEGIES
-------	------------

2 DESTEMMING/ CRUSHING

PREVENT OXIDATION	▶ EnartisTan Blanc, AST
--------------------------	--------------------------------

3 CRUSHER

EXTRACT VARIETAL AROMAS	▶ Maceration enzyme
PROTEIN STABILIZATION	▶ EnartisZym Arom MP



Oxidation

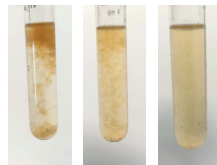
	▶ EnartisTan Arom
--	--------------------------

4 EXITING THE CRUSHER

MUST DEPECTINIZATION	▶ Pectolytic enzymes EnartisZym RS (difficult must) EnartisZym Arom MP
-----------------------------	--

PECTIN DETERMINATION TEST

Must with residual pectin



Must without pectin



Materials: Ethyl alcohol, hydrochloric acid 37%, test tubes
Method:

- Prepare one liter of acidified 96% v/v hydroalcoholic solution: 950 mL ethyl alcohol, 5 mL hydrochloric acid 37%. Add demineralized water to reach 1 L.
- In a test tube, mix 2 parts of the acidified alcohol solution with 1 part must or wine.
- If the must or wine is rich in pectins, the appearance of floccules or haze is observed.
- If the must or wine is pectin-free, no visual changes are observed.



High presence of pectins

	▶ Increase enzyme dose/contact times
--	--------------------------------------



Presence of glucans

	▶ EnartisZym EZFilter <i>(for grapes affected by Botrytis)</i>
--	--

5 STATIC CLARIFICATION OR FLOTATION

FLOTATION vs STATIC CLARIFICATION

	Flotation	Static Clarification
<8% suspended solids	●	●
8<% suspended solids>12	●	●
>12% suspended solids *	●	●
Residual pectins	●	●

*reduce the solids content with centrifugation

CLARIFICATION ELIMINATION OF POLYPHENOLS PROTEIN STABILIZATION



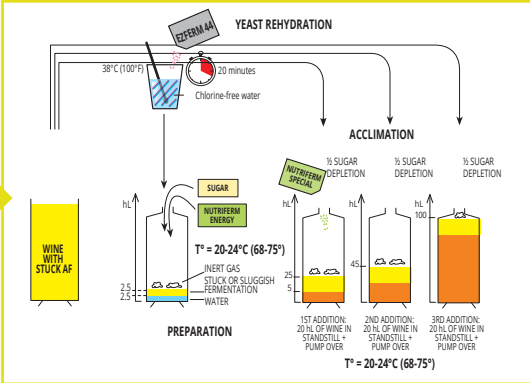


	▶ Fining agents Plantis AF, Plantis AF-L, Plantis AF-Q, Claril SP, Protomix AF, Neoclar AF, Pluxcompact, Protomix G, Sil Floc
--	---

Flotation Problems	Solution 1	Solution 2
Large/heavy floccules which tend to sink	Reduce the dose of protein clarifier to decrease the size of the floccules	Sil Floc in combination with protein clarifier and bentonite
Non-compact cap	Increase the dosage of bentonite to favor the compaction of the cap	Protein clarifier in combination with Sil Floc and bentonite
high % of solids	Increase nitrogen flow Reduce or eliminate bentonite	If >8%, perform static clarification
Double layer of lees	Check for residual pectin	Reduce the dosage of bentonite

6 FILLING THE TANK

PRESERVE AROMATIC PROFILE	▶ Incanto NC Range EnartisPro Range EnartisTan Arom EnartisTan CIT
PREVENT OXIDATION	

7 FERMENTATION

GOALS		STRATEGIES
GUARANTEE REGULAR FERMENTATION		Selected yeast and nutrients
Aromatic Profile	Yeast	Nutrients
Citrus	EnartisFerm Q Citrus	Nutriferom Arom Plus
Thiolic	Tropical	EnartisFerm Aroma White
	Herbaceous	EnartisFerm Q4
	Complex	EnartisFerm ES181
Sweet Fruit	EnartisFerm Top Essence	Nutriferom Arom Plus
Floral	EnartisFerm ES U42	Nutriferom Arom Plus
Varietal	EnartisFerm Vintage White	Nutriferom Energy
 Sluggish fermentation		Temperature control, oxygen, Nutriferom No Stop (depending on the fermentation stage)
 Stuck fermentation		
 Reduction		Temperature control, oxygen, Nutriferom Special
 Unwanted fermentation		EnartisStab Micro M Greater guarantee of dominance of selected yeast





8 CLARIFICATION AND STABILIZATION

PROBLEMS	CAUSES	SOLUTIONS
Haze	Metallic and protein haze	Claril ZW, Pluxcompact
Browning, loss of aromas	Oxidation	Tannins and fining agents
Unwanted MLF, organoleptic changes	Microbiological contamination	EnartisStab Micro M
Loss of freshness and sediment in the bottle	Precipitation of crystals (CaT, KHT)	Cellogum LV20, Zenith, Enocrystal Ca
Aromatic changes, light-struck defect	High presence of riboflavin	Pluxcompact
Organoleptic defects	Off-flavors, unbalanced	Fining agents

9 FILTRATION

Low filterability	Microbiological contamination	EnartisStab Micro M
	Presence of glucans and pectins	EnartisZym EZFilter
	Presence of suspended solids	Fining agents
	Presence of electrostatic charges	Check the grounding of the tanks

10 PRE-BOTTLING

PROBLEMS	CAUSES	SOLUTIONS	
Loss of aromatic quality	Oxidation	EnartisTan SLI, Hideki	
	Reduction	EnartisTan Elevage, EnartisTan SLI, EnartisTan Max Nature	
	TEST TO IDENTIFY THE CAUSE OF REDUCTION		
		0.5 ppm Cu ⁺⁺	2 g/hL EnartisTan Elevage
			
			5 g/hL ascorbic acid, 5 minutes, then 2 g/hL EnartisTan Elevage
			
	H ₂ S	●	●
	Mercaptans	●	●
	Disulfides	●	●
STRATEGY			
H ₂ S	5-20 g/hL Revelarom		
Mercaptans	2 g/hL EnartisTan Elevage, 2 g/hL EnartisTan SLI		
Disulfides	5 g/hL ascorbic acid and 2 g/hL EnartisTan Elevage, 2 g/hL EnartisTan SLI		
Discoloration	Pinking	Citrostab rH	
	PINKING TEST		
		QUICK METHOD 1. 150 mL of the test wine 2. 0.375 mL of 3% hydrogen peroxide 3. Place in laboratory oven at 40°C for 15 min. If the wine is subject to pinking, the color will be pink at the end of the test.	
Organoleptic changes	Off-flavors, unbalanced	Solutions shown in the table below	
ORGANOLEPTICS CHANGES			
	IN TANK (treatments during wine maturation)	PRE-BOTTLING (last-touch treatments)	
Bitterness	Claril SP	Surli Velvet Citrogum	
Astringency	Claril SP	Surli Velvet EnartisTan Max Nature	
Acidity	EnartisTan E	Citrogum EnartisTan SLI	
Green/vegetal	Claril ZW Neoclar AF	EnartisTan Napa EnartisTan DC EnartisTan Max Nature EnartisTan VNL Enartis FT	
Evolved	Claril SP Incanto NC White	EnartisTan Unico #3 + EnartisTan FF EnartisTan SLI Hideki	
Structure	EnartisTan E Incanto NC White	EnartisTan FF EnartisTan FT EnartisTan VNL	




RED WINES

1 GRAPE RECEPTION

PROBLEMS	CAUSES	SOLUTIONS
<ul style="list-style-type: none"> • Oxidation • Microbiological contamination • Indigenous fermentation • Extraction of unwanted compounds 	<ul style="list-style-type: none"> • Grape health • Hand vs. machine harvested • Transport and damage (temperature, transport time) 	EnartisTan Rouge, EnartisTan FP, EnartisTan Antibotrytis, AST, EnartisStab Micro M, Winy

2 DESTEMMING/ CRUSHING

GOALS	STRATEGIES
PREVENT OXIDATION	Tannin EnartisTan Fermcolor, Incanto NC Range, EnartisTan Rouge, EnartisTan FP
 Incomplete phenolic maturity	Vegetable/green notes EnartisTan Color

3 FILLING TANK

COLOR AND TANNIN EXTRACTION	Enzymes EnartisZym Color, EnartisZym Color Plus
COLOR STABILIZATION	EnartisTan V, EnartisTan Fermcolor, EnartisTan XC, EnartisTan Color, Incanto Range, EnartisPro Range

4 FERMENTATION

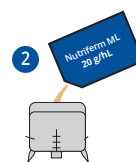
GOALS			STRATEGIES
GUARANTEE REGULAR FERMENTATION			Selected yeast and nutrients
Aromatic Profile	Yeast	Nutrients	
Fruity	EnartisFerm ES454, EnartisFerm D20, EnartisFerm Red Fruit, EnartisFerm Q7	Nutriferm Arom Plus	
Thiolic	EnartisFerm ES488, EnartisFerm WS	Nutriferm Arom Plus	
Spicy	EnartisFerm VQ51, EnartisFerm Vintage Red, EnartisFerm WS	Nutriferm Energy	
Floral	EnartisFerm ES U42	Nutriferm Energy	

5 POST ALCOHOLIC FERMENTATION

COLOR STABILITY	Macro-oxygenation EnartisTan E, EnartisTan XC, EnartisTan FT
MALOLACTIC FERMENTATION	Specific bacteria and nutrients

OPTIMAL BACTERIA PREPARATION PROCESS

1 Rehydration	EnartisML Silver	15-20 minutes in chlorine-free H ₂ O
2 Nutrients	Nutriferm ML	In pre-inoculated wine





MALOLACTIC FERMENTATION

	Easy	Difficult	Extreme
Temperature	18-22°C	12-18°C	<12°C
Alcohol	11-13.5%	13.5-15.5%	>15.5%
pH	3.4-3.6	3.0-3.4	<3.0
Free SO ₂	<5ppm	5-12ppm	>12ppm
Cu, fatty acids, total polyphenols, etc.			
In difficult conditions, a starter culture that allows adaptation to the limiting parameters is recommended.			

	GOALS	STRATEGIES																					
POST ALCOHOLIC FERMENTATION	ORGANOLEPTIC BALANCE	<p>Micro-oxygenation Incanto Range, EnartisTan Range</p> <p>POST MALOLACTIC FERMENTATION</p> <table border="1"> <thead> <tr> <th></th> <th>Low Phenolic Structure</th> <th>High Phenolic Structure</th> </tr> </thead> <tbody> <tr> <td>Total polyphenols (mg/L)</td> <td><1800</td> <td>>2500</td> </tr> <tr> <td>pH</td> <td><3.35</td> <td>>3.55</td> </tr> <tr> <td>Color intensity (DO420 nm + DO520 nm + DO620 nm) x 10</td> <td>15</td> <td>18</td> </tr> <tr> <td>Hue (DO420 nm/DO520 nm)</td> <td><0.55</td> <td>>0.75</td> </tr> <tr> <td>Total anthocyanins (mg/L)</td> <td><250</td> <td>>350</td> </tr> <tr> <td>O₂ mg/L/month</td> <td>0.5-1.5</td> <td>1.5-3.5</td> </tr> </tbody> </table> <p>EVALUATION of the analytical parameters, organoleptic profile and starting turbidity to define the correct oxygen dosage.</p> <p>PARAMETERS to check daily:</p> <ul style="list-style-type: none"> • Sensory (reduction, oxidation, vegetable, "tannin evolution," volume) • Analytical parameters (acetaldehyde, volatile acidity and dissolved O₂) 		Low Phenolic Structure	High Phenolic Structure	Total polyphenols (mg/L)	<1800	>2500	pH	<3.35	>3.55	Color intensity (DO420 nm + DO520 nm + DO620 nm) x 10	15	18	Hue (DO420 nm/DO520 nm)	<0.55	>0.75	Total anthocyanins (mg/L)	<250	>350	O₂ mg/L/month	0.5-1.5	1.5-3.5
		Low Phenolic Structure	High Phenolic Structure																				
	Total polyphenols (mg/L)	<1800	>2500																				
	pH	<3.35	>3.55																				
Color intensity (DO420 nm + DO520 nm + DO620 nm) x 10	15	18																					
Hue (DO420 nm/DO520 nm)	<0.55	>0.75																					
Total anthocyanins (mg/L)	<250	>350																					
O₂ mg/L/month	0.5-1.5	1.5-3.5																					
MICROBIOLOGICAL STABILITY	EnartisStab Micro M																						
PREVENT OXIDATION	EnartisTan SLI, HIDEKI																						

	PROBLEMS	CAUSES	SOLUTIONS
6 CLARIFICATION AND STABILIZATION	Loss of freshness and deposits in the bottle	Crystal precipitation	Zenith
	Aromatic and flavor changes	Microbiological contamination	EnartisStab Micro M
	Loss of color and deposits in the bottle	Precipitation of color material	Maxigum Plus, Zenith Color, Claril ZR
	Organoleptic defects	Off-flavors, unbalanced	Fining agents
7 FILTRATION	Low filterability	Microbiological contamination	EnartisStab Micro M
		Presence of glucans	EnartisZym EZFilter
		Presence of suspended solids	Fining agents

8 PRE-BOTTLING

PROBLEMS	CAUSES	SOLUTIONS	
Loss of aromatic quality	Oxidation	EnartisTan SLI, Hideki	
	Reduction	EnartisTan Elevage, EnartisTan SLI, EnartisTan Max Nature	
	TESTS TO IDENTIFY THE CAUSE OF REDUCTION		
		0.5 ppm Cu ⁺⁺	2 g/hL EnartisTan Elevage
			5 g/hL ascorbic acid, 5 minutes, then 2 g/hL EnartisTan Elevage
			
	H ₂ S	●	●
	Mercaptans	●	●
	Disulfides	●	●
	STRATEGIES		
H ₂ S	5-20 g/hL Revelarom		
Mercaptans	2 g/hL EnartisTan Elevage, 2 g/hL EnartisTan SLI		
Disulfides	5 g/hL ascorbic acid and 2 g/hL EnartisTan Elevage, 2 g/hL EnartisTan SLI		
Organoleptic changes	Off-flavors, unbalanced	Solutions shown in the table below	
ORGANOLEPTIC CHANGES	IN TANK (treatments during wine maturation)	PRE-BOTTLING (last-touch treatments)	
Bitterness	Incanto NC Cherry	EnartisTan DC EnartisTan MEL Surli Velvet	
Astringency	Claril ZR Incanto NC Cherry	Surli Velvet EnartisTan Max Nature EnartisTan VNL EnartisTan MEL	
Acidity	EnartisTan E	Maxigum Plus EnartisTan SLI	
Green/vegetal	Neoclar AF	EnartisTan Napa EnartisTan DC EnartisTan Max Nature EnartisTan VNL	
Evolved	Plantis AF Plantis AF-L Incanto NC White	EnartisTan Unico #3 EnartisTan SLI Hideki	
Structure	Incanto Toffee Incanto Black Spice Incanto Dark Chocolate Incanto NC Cherry Incanto NC Dark Chocolate	EnartisTan Napa EnartisTan Cœur De Chêne EnartisTan Unico #2 EnartisTan Rich EnartisTan TF	

enartis

Inspiring innovation.

