

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, 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

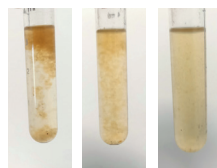
	▶ EnartisTan Arom
--	--------------------------

4 EXITING THE CRUSHER

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

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, Claril AF, Pulviclar S, Combistab AF, Pluxcompact, Sil Flocc
---	---

Flotation Problems

Large/heavy floccules which tend to sink

Non-compact cap

high % of solids

Double layer of lees

Solution 1

Reduce the dose of protein clarifier to decrease the size of the floccules

Increase the dosage of bentonite to favor the compaction of the cap

Increase nitrogen flow
Reduce or eliminate bentonite

Check for residual pectin

Solution 2

Sil Flocc in combination with protein clarifier and bentonite

Protein clarifier in combination with Sil Flocc and bentonite





If >8%, perform static clarification

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	NutriferM Arom Plus
Thiolic	Tropical/citrus	EnartisFerm Aroma White
	Herbaceous	EnartisFerm Q4
	Mineral	EnartisFerm Q9
	Complex	EnartisFerm ES181
Sweet Fruit	EnartisFerm ES123	NutriferM Arom Plus
Floral	EnartisFerm ES U42 EnartisFerm ES Floral	NutriferM Arom Plus
 Sluggish fermentation		Temperature control, oxygen, NutriferM No Stop, NutriferM Advance (depending on the fermentation stage)
 Stuck fermentation		<p>The diagram illustrates the process of yeast rehydration and fermentation. It starts with 'YEAST REHYDRATION' where 'ENARTIS AF' yeast is added to 'Chlorine-free water' at 38°C (100°F) for 20 minutes. This is followed by 'ACCLIMATION' with '1/3 SUGAR DEPLETION'. The 'PREPARATION' stage involves 'WINE WITH STUCK AF', 'SUGAR', 'NUTRIFERM ENERGY', and 'INERT GAS' at T° = 20-24°C (68-75°). The '3RD ADDITION' stage involves '100% SUGAR DEPLETION' at T° = 20-24°C (68-75°). The diagram also shows '1ST ADDITION' and '2ND ADDITION' stages with '20 HL OF WINE IN STANGSTILL + PUMP OVER'.</p>
 Reduction		Temperature control, oxygen, NutriferM Advance
 Unwanted fermentation		EnartisStab Micro M Greater guarantee of dominance of selected yeast




8 CLARIFICATION AND STABILIZATION

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

9 FILTRATION

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

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	
		<p>QUICK METHOD</p> <ol style="list-style-type: none"> 150 mL of the test wine 0.375 mL of 3% hydrogen peroxide Place in laboratory oven at 40°C (104°) for 15 min. <p>If the wine is subject to pinking, the color will be pink at the end of the test.</p>

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	Stabyl Incanto NC White Incanto Natural + O ₂ Incanto Vanilla + O ₂	EnartisTan Uvaspeed Citrogum Plus Surli Velvet Surli Vitis
Astringency	Pulviclar S Surli Natural Surli One Surli Elevage Incanto NC Cherry	Surli Velvet Surli Vitis EnartisTan Uvaspeed EnartisTan Elegance
Acidity	Incanto Vanilla Incanto Special Fruit Incanto SLI Surli Round EnartisTan E	Citrogum Plus EnartisTan Uvaspeed Surli Vitis EnartisTan Elegance
Green/vegetal	Claril AF Claril ZW Protoclar Stabyl Surli Round + O ₂ Incanto SLI + O ₂	EnartisTan Napa EnartisTan VNL EnartisTan Max Nature EnartisTan Elegance EnartisTan FT
Evolved	Stabyl Protoclar Plantis AF-Q Surli One	EnartisTan Unico #3 + EnartisTan FF EnartisTan SLI Hideki
Structure	EnartisTan Uva Incanto NC White	EnartisTan Skin EnartisTan FF



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, AST, EnartisStab Micro M, Winy


GOALS

STRATEGIES

2 DESTEMMING/ CRUSHING

PREVENT OXIDATION

Tannin
EnartisTan Fermcolor, Incanto NC Range, EnartisTan Rouge

 Incomplete phenolic maturity

Vegetable/green notes
EnartisTan Color

3 FILLING TANK

COLOR AND TANNIN EXTRACTION

Enzymes
EnartisZym Color Plus

COLOR STABILIZATION

EnartisTan V, EnartisTan Fermcolor, EnartisTan XC, Incanto Range, EnartisPro Range

4 FERMENTATION

GUARANTEE REGULAR FERMENTATION

Selected yeast and nutrients

Aromatic Profile	Yeast	Nutrients
Fruity	EnartisFerm ES454, EnartisFerm Q5, EnartisFerm Red Fruit, EnartisFerm Q7, EnartisFerm AMR-1	Nutriferom Arom Plus
Thiolic	EnartisFerm ES488, EnartisFerm WS	Nutriferom Arom Plus
Spicy	EnartisFerm ES488, EnartisFerm Vintage Red, EnartisFerm WS	Nutriferom Energy
Floral	EnartisFerm ES U42	Nutriferom 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 Uno/EnartisML Silver/ EnartisML MCW	15-20 minutes in chlorine-free H ₂ O
2 Adaptation and reactivation	Nutriferom Osmobacti	2-4 hours in H ₂ O + Bacteria
3 Nutrients	Nutriferom ML	In pre-inoculated wine



MALOLACTIC FERMENTATION

	Easy	Difficult	Extreme
Temperature	18-22°C (64-72°F)	12-18°C (54-64°F)	<12°C (54°F)
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> <table border="1"> <thead> <tr> <th colspan="3">POST MALOLACTIC FERMENTATION</th> </tr> <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) 	POST MALOLACTIC FERMENTATION				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
	POST MALOLACTIC FERMENTATION																									
		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																									

	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, Maxigum F, Zenith Color, Claril ZR
	Organoleptic defects	Off-flavors, unbalanced	Fining agents
7 FILTRATION		Microbiological contamination	EnartisStab Micro
	Low filterability	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 Surli One	EnartisTan Uvaspeed EnartisTan DC EnartisTan Unico #1	
Astringency	Atoclar M Claril ZR Plantis PQ Pulviclar S Surli One Surli Round Surli Elevage Incanto NC Cherry	Surli Velvet Surli Vitis EnartisTan Uvaspeed	
Acidity	Incanto Vanilla Incanto Special Fruit Incanto SLI Surli One Surli Round	Maxigum Plus EnartisTan Uvaspeed Surli Vitis EnartisTan SLI	
Green/vegetal	Combistab AF Surli Round + O ₂	EnartisTan Napa EnartisTan DC EnartisTan Max Nature EnartisTan VNL EnartisTan FT	
Evolved	Surli One Claril AF	EnartisTan Unico #3 EnartisTan SLI EnartisTan FF Hideki	
Structure	Incanto Toffee Incanto Black Spice Incanto Dark Chocolate Incanto Complexity	EnartisTan Napa EnartisTan Cœur De Chêne EnartisTan Unico #2 EnartisTan Unico #1 EnartisTan TF	

enartis

Inspiring innovation.

