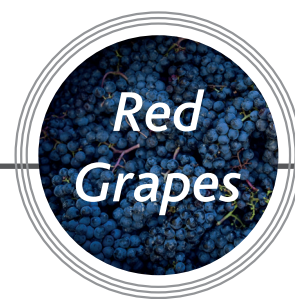


Fermentation Management of Rot Infected Grapes



STEP 1 // BIOProtection on grapes & materials

In order to control the indigenous microflora on botrytized grapes, the use of a yeast preparation for **BIO**Protection should be considered.

Apply **ZYMAFLORE™ ÉGIDE™^{TDMP}** in dry form or by spraying on the harvesting machine, the grape transport bucket, and the cellar equipment at the reception.

Dosage: 20 - 30 g per ton as dry weight of **ZYMAFLORE™ ÉGIDE™^{TDMP}**.

Consult the **LAFFORT®** team about the technical information for **BIO**Protection application.

STEP 1 // Estimate level of rot in U/mL

Add 80 - 100 ppm of SO₂ depending on the laccase activity as determined either visually or with the **BOTRYTEST**.

Level of Rot (%)	<1	1 to 5	6 to 10	11 to 25	26 to 50	51 to 100
Laccase activity (U/mL)	0.39	0.78	2.25	6.56	8.12	15.86

STEP 2 // Must preparation

Reductive cover (CO₂) asap, then add:

U/mL	2 - 5	5 - 10	>10
TANIN VR SUPRA™ (ppm)	150	300 - 400	500 - 800

On *Botrytis*-affected harvest, add the total dosage as early as possible, before breaking skins.

STEP 3 // Yeast

Rehydrate the wine yeast (250 ppm) with **SUPERSTART™ ROUGE** at 300 ppm to ensure a strong fermentation finish. Compensate for nitrogen deficiency in the must, if necessary, by adding **THIAZOTE™ PH**, **NUTRISTART™** or/and **NUTRISTART™ ORG** (use nutrient online tool, **LAFFORT®** Website).

Recommended yeast: **ZYMAFLORE™ XPURE**, **ZYMAFLORE™ RX60**.

STEP 4 // Fermentation

- Accelerate extraction by using an extraction enzyme, as soon as fermentation starts: **LAFASE™ HE GRAND CRU** or **LAFASE™ FRUIT** (according to the style objective) at 30 g per ton of grapes.
- Use **TANIN VR COLOR™** at 1/3rd through ferment at 250 ppm to stabilize the color.
- Limit pumping-over and cap punch down (mechanical activity). Tank transfers are not recommended at this stage.
- At mid-fermentation, add under the cap **EXTRALYSE™** preparation containing the β-glucanase required for degrading the *Botrytis* glucans. A dosage of 60 - 100 ppm is recommended according to the tannin content and infection level.
- Limit time on skins to the minimum.
- Transfer free-run anaerobically into a tank with inert gas cover. Maintain anaerobic conditions until all laccase activity has disappeared.
- Press wines have a higher laccase activity and will have a low filterability index due to a high colloidal content. Treatment with a mixed enzyme preparation of pectinase/β-glucanase such as **EXTRALYSE™** at 100 ppm will be very important to improve the filterability of the wine.

Fermentation Management of Rot Infected Grapes



STEP 1 // BIOProtection on grapes & materials

In order to control the indigenous microflora on botrytized grapes, the use of a yeast preparation for **BIO**Protection should be considered.

Apply ZYMAFLORE™ ÉGIDE^{TDMP} in dry form or by spraying on the harvesting machine, the grape transport bucket, and the cellar equipment at the reception.

Dosage: 20 - 30 g per ton as dry weight of ZYMAFLORE™ ÉGIDE^{TDMP}.

Consult the LAFFORT® team about the technical information for **BIO**Protection application.

STEP 2 // Estimate level of rot in U/mL

Level of Rot (%)	<1	1 to 5	6 to 10	11 to 25	26 to 50	51 to 100
Laccase activity (U/mL)	0.39	0.78	2.25	6.56	8.12	15.86

STEP 3 // Pressing

Reductive cover (CO₂) as soon as possible, then add:

Level of Rot (%)	Low rot contamination	Medium rot contamination	High rot contamination
U/mL	2 - 5	5 - 10	> 10
SULFITES (ppm)	80 - 100		
TANIN GALALCOOL™ (ppm)	50 - 70	80 - 150	100 - 200

TANIN GALALCOOL™ will reduce the natural enzymatic oxidation activity due to its high affinity towards the laccase protein, complementing the activity of SO₂. Use as soon as possible after crush & SO₂ addition.

Fermentation Management of Rot Infected Grapes



STEP 4 // Pressing

Addition of enzymes on must in tank after pressing:

	U/mL	2 - 5	5 - 10	> 10
or	LAFAZYM™ CL* (ppm)	10 - 20	20	20 - 30
	LAFAZYM™ 600 XL ^{ICE} * (mL/hL)	1 - 2	2	2 - 3

* Purified enzymes selected for their ability to not produce vinyl phenols, important as these can mask fruit.

Cool juice to 10°C, then add:

	U/mL	2 - 5	5 - 10	>10
or	POLYLACT™ (ppm)	50 - 70	100 - 200	300 - 500
	POLYMUST™ PRESS (ppm)	100 - 200	300	400 - 500
	Supplementary addition in case of excess oxidation: CASEI PLUS			250 - 300

Recommended racking after minimum of 6 hours.

STEP 5 // Fermentation

Rehydrate the wine yeast (250 ppm) with SUPERSTART™ BLANC at 300 ppm to ensure a strong fermentation finish.

Compensate for nitrogen deficiency in the juice, if necessary, by adding THIAZOTE™ PH, or NUTRISTART™ range. Use nutrient online tool (LAFFORT® Website).

Recommended yeast: ZYMAFLORE™ CX9, ZYMAFLORE™ X5, ZYMAFLORE™ X16 or ACTIFLORE™ BO213.

It is recommended to carry out a secondary fining during fermentation to remove the residual oxidized and / or oxidizable phenolic compounds.

	U/mL	2 - 5	5 - 10	> 10
or	POLYLACT™ (ppm)	50 - 70	100 - 200	300 - 500
	POLYMUST™ PRESS (ppm)	100 - 200	200	200 - 300

To improve the spectrum of elimination of oxidized and / or oxidizable phenolic compounds, it is advised to alternate the fining products according to what was carried out on the must.

The recommended doses are determined for the application of a double fining on the must and during fermentation. If only one fining will be performed, the doses can be increased.

Maintain anaerobic conditions until all laccase activity has disappeared. Press wines will have a higher laccase activity resulting in a low filterability index due to a high colloidal content. Treatment with an enzyme preparation of pectinase / β-glucanase such as EXTRALYSE™ at 100 ppm in the last 1/3 of alcoholic fermentation will help to improve the filterability of the wine.