



RAPIDASE

HIGH SPEED ENZYMES SINCE 1922 REVELATION AROMA

PROTOCOL AND TRIAL FOLLOW UP

THE FOLLOWING PROTOCOL REQUIRES 6 WEEKS.
IT'S AN EASY TOOL TO EVALUATE THE IMPACT OF THE ENZYME

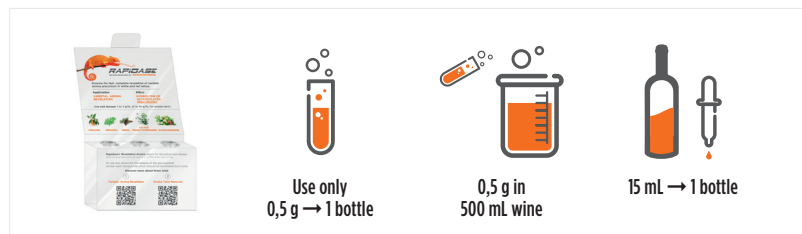
1. PREPARE 7 BOTTLES OF 750 mL

One bottle will be saved for the control, no enzyme added.

2. PREPARE THE ENZYME SOLUTION TO ADD 2 g/hL OF ENZYME

Rapidade® Revelation Aroma can be dispersed into wine or water prior to addition. For this trial we will prepare our enzymatic solution with the wine to be tested in order to avoid any dilution of our sample.

- In a volumetric flask dilute 0,5 grams of enzyme in 500 mL of wine.
- Every week prepare a new solution.
- 15 mL of the solution will be used in one 750 mL bottle each week.



Enzyme dilution to add 2 g/hL of enzyme.

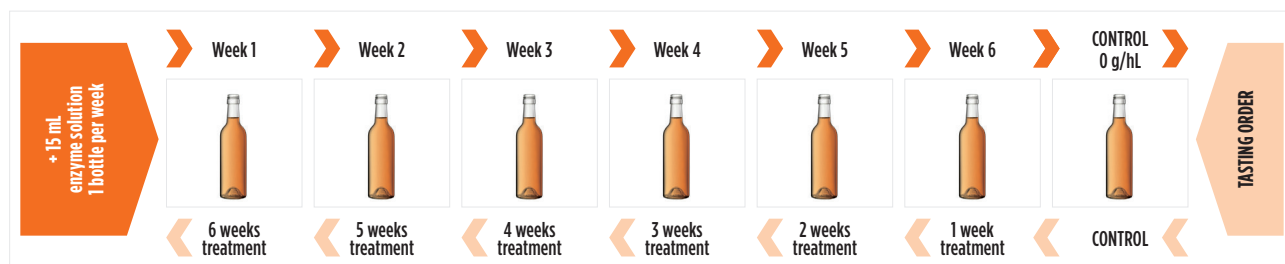
RECOMMENDED USE

- Grape varieties: any white, rosé or red wine
- Dose: 2-3 g/hL
- Temperature: above 13 °C
- Reaction time: 3-6 weeks, however strongly correlated to temperature and wine conditions.
- At the end of the process, it is necessary to treat the wine with 5-10 g/hL of bentonite, in order to remove the enzyme and stop the activity of the enzyme.

N.B. a simple preliminary test is recommended to check the impact of the enzyme on the specific wine and to define the treatment time. The test is described in details in the below figure.

3. ENZYME ADDITION FOR 6 WEEKS

- Add 15 mL of enzyme solution in the corresponding bottle.
- Close the bottle.
- Store the bottle with the others away from light at cellar T^a.
- Repeat the operation every week for 6 weeks.



4. TASTING

The tasting evaluation will take place one week after the last bottle treatment.

CONTROL WINE (NO ENZYME)

Color: Mouth:
 Nose: Observations:

WINE WEEK 1

Color:
 Nose:
 Mouth:
 Observations:

WINE WEEK 4

Color:
 Nose:
 Mouth:
 Observations:

WINE WEEK 2

Color:
 Nose:
 Mouth:
 Observations:

WINE WEEK 5

Color:
 Nose:
 Mouth:
 Observations:

WINE WEEK 3

Color:
 Nose:
 Mouth:
 Observations:

WINE WEEK 6

Color:
 Nose:
 Mouth:
 Observations:



HIGH SPEED / SIMPLE AND FOCUSED
TESTED AND VALIDATED / TRUSTED

VARIETAL AROMA REVELATION WITH RAPIDASE REVELATION AROMA

Rapidase Revelation Aroma, an unique β -D-glycosidase enzyme formulation to maximise aroma intensity and complexity, or efficiently decrease smoke taint risk. **Rapidase Revelation Aroma** is an enzymatic formulation manufactured by DSM from a selected strain of *Aspergillus sp.* It contains the complete spectrum of glycosidase activities for a highly targeted and effective action. A research program conducted at INRA Montpellier (now INRAE) for DSM Food Specialties has highlighted the sequential reactions that hydrolyse aroma glycoconjugates precursors, and lead to a full revelation of the wine aroma potential (figure 1).

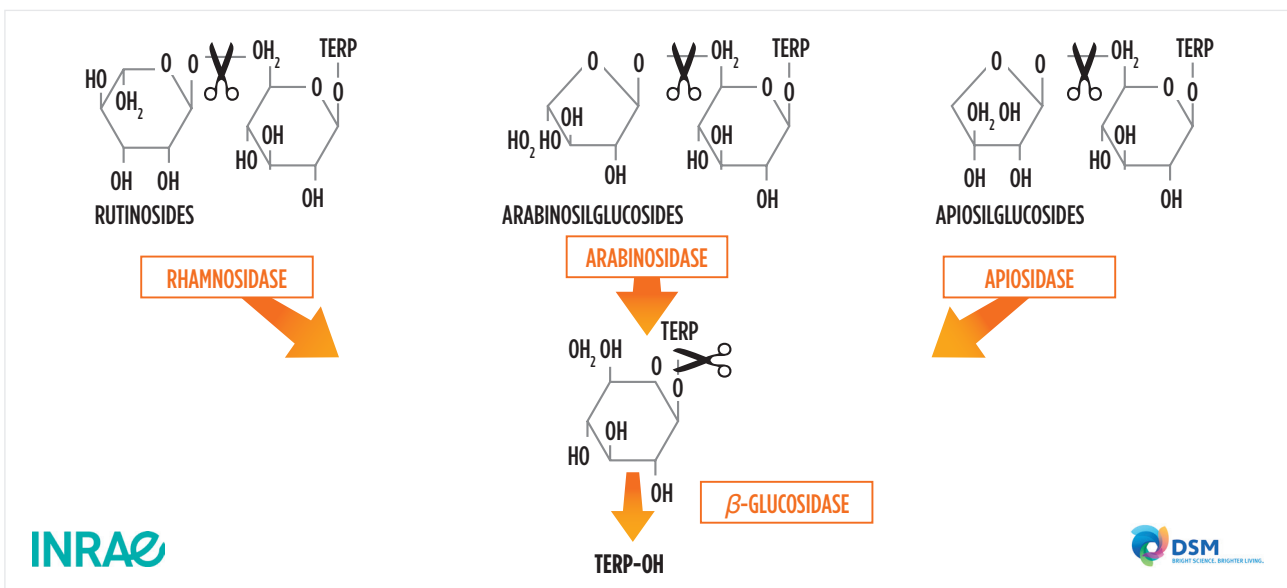


Figure 1. Mechanism of action of Rapidase Revelation Aroma.

Non-volatile aroma precursors in the grape berry can be chemically or biochemically cleaved during fermentation and wine ageing, but this mechanism is slow and limited. Terpenes and C13-norisoprenoids are the most abundant and consequential families in both white or red grapes and their proportion depends on grape varieties and pedoclimatic conditions. These glycoconjugates are always presents in grapes and musts at much higher levels than the corresponding free aroma, representing a very interesting aroma buffer that can quickly be released using the appropriate enzyme formulation.

Due to the complex structure of aroma glycoconjugates (figure 2), the use of an enzyme formulation such as **Rapidase Revelation Aroma**, with a balanced content of arabinofuranosidase, rhamnosidase, apiosidase, and β -D-glycosidase, is necessary to efficiently release the aromas compounds. Facilitating and enhancing the release of the aroma glycoconjugates in white wine is not only interesting for Muscat, Traminer or Riesling, but also for other "non-terpene" cultivars such us Sauvignon Blanc, Chardonnay, Verdejo, Pinot Gris, and Viognier.

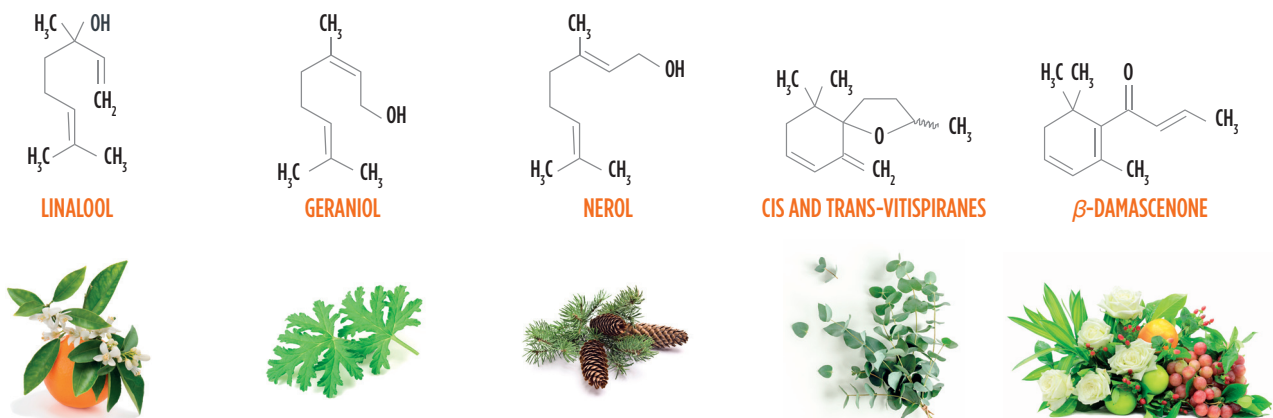


Figure 2. The most common aromas released in wine after hydrolysis of the glycoconjugates.