



ENDOZYM[®] TMO

Pectolitic enzyme for the clarification of musts and red wines



→ TECHNICAL DESCRIPTION

Endozym TMO is a purified and concentrated enzymatic preparation, extremely useful for clarification treatments of musts and red wines obtained by means of warm vinifications, such as thermo-flash and thermo-vinification.

In these processings it is essential to accelerate the clarification stage, in order to make the technological process stable and to preserve the positive characteristics present in musts and wines and which derive from the utilization of coloured fruit types.

Endozym TMO is characterized by strong secondary activities, able to intervene on pectic chains present in the skin. These molecules heavily interfere with the brightness of the processed liquid and are usually refractory to degradation.

The action of this enzyme grants the removal of molecular complexes determining evident difficulties in the correct development of the transformation process to the detriment of the final yield and the product quality. **Endozym TMO** displays an optimal concentration in pectolitic units and is ideal to remove clogging polysaccharides. In fact this enzyme degrades them, bringing about a marked improvement of must qualities and supporting yields during pressing.

The product should be used immediately after the thermal treatment and after temperature has lowered under 40°C.

→ COMPOSITION AND TECHNICAL CHARACTERISTICS

Enzymatic activity	Activity/g
PL (U/g)	12,500
PE (U/g)	550
PG (U/g)	5,500
ARA (U/g)	220
CMC (U/g)	350
Total UP (U/g)	18,550

The value is approximate and is not a specification.

PL (Pectinlyase): breaks down both the esterified and non-esterified pectins. This is a fundamental activity of the AEB enzymes, since it produces a very rapid clarification speed.

PE (Pectinesterase): it supports the PG in breaking down pectin.

PG (Polygalacturonase): breaks down only the non-esterified pectins. Its enzymatic activity works in synergy with the PL activity and performs a very important role in determining must clarity and wine filterability.

ARA (Rhamnosidase-Arabinosidase): they act synergically with PL and CTC and are responsible for the breaking down of very ramified pectins, not allowing a quick sedimentation.

CMC (Cellulase): represents several enzymatic activities which in synergy with pectinase, release colouring matter, tannins and aromatic precursors from the grape skin.





ENDOZYM® TMO

The total measure of enzyme activity, which is indicated for each preparation, can be expressed as: **Total UP** (U/g), which is the measure of enzyme activity resulting from the sum of PL, PG, PE activities measured individually.

Endozym TMO is purified by the following activities:

CE (Cinnamyl Esterase): is an activity found in unpurified enzymes, which causes the formation of volatile phenols, compounds which lend unpleasant aromatic nuances to the wine, which, if present in high concentrations, are reminiscent of horse sweat.

Anthocyanase: is a secondary enzymatic activity which causes a partial breakdown of the anthocyanins with a consequent increase of orange hues in the wines. AEB enzymes are obtained from *Aspergillus niger* strains, which do not produce anthocyanase.

→ DOSAGE

From 2 to 4 mL/100 kg of crushed grapes or per hL of must. Contact times vary according to temperature and SO₂.

The recommended dosage varies according to the temperature of the must or crushed grapes. By using higher dosages, the unfavourable influence of low temperatures can be rectified.

→ INSTRUCTIONS FOR USE

Dilute directly in 20-30 parts of must to which no sulphur has been added or demineralized water alternatively, add directly onto the grapes, crushed grapes or must. Use at the start or while filling up the tanks.

→ ADDITIONAL INFORMATION

INFLUENCE OF SO₂

Enzymes are resistant to SO₂ levels normally used in winemaking, however it is good practice not to put them in direct contact with sulfur solutions.

ACTIVITY CONTROL

There are various methods for evaluating enzymatic activity. A system utilized by AEB is a method of direct measure, directly linked to the concentration of the PL, PG and PE; the total of the three activities yields the Total UP per gram unity. The determination methods of pectolitic units together with the relative activity diagrams are made available to all technical personnel by AEB.

→ STORAGE AND PACKAGING

Keep **Endozym TMO** in the original sealed packaging away from light, and in a cool, dry, odour-free place at a temperature below 20°C. Do not freeze. Observe the expiry date on the packaging. Use promptly after opening.

1 kg net bottles in 4 kg net boxes.

