100% yeast autolysate, OMRI listed, natural with no additives. Smoother and cleaner ferments when compared to DAP.

APPLICATION

Lallemand spent many years determining the best combination of yeast autolysates composed of amino acids, peptides and micronutrients that gave the best kinetic and sensory outcomes during alcoholic fermentation. After many years of research and trials FERMAID®O was developed.

FERMAID®O contains 100% natural yeast derived components rich in organic nitrogen and essential vitamins and minerals. It does not contain any inorganic nitrogen (e.g. no DAP).

FERMAID®O has the highest level of YAN (mg/g) permitted by the OIV monograph for yeast autolysates (OIV-OENO-496-2013). Any higher and it would not conform to OIV and hence FSANZ.

FERMAID®O is OMRI Listed. For market specific organic compliance, please contact your organic certifier.

Lallemand emphasises that YAN is not the only answer for smooth and complete alcoholic fermentations. Lipid content (from rehydration products), high quality YAN, vitamins and minerals are key factors that are provided by FERMAID®O.

FERMAID®O supplies well-balanced nutrients for yeast:

- Highly bio-available amino acids and peptides. The speed and uptake of most amino acids is slower compared to NH₄⁺ salts. It is postulated that these amino acids are stored within the cell and used later in fermentation, hence reducing the tailing off of fermentation rate at the end of fermentation.

- Micronutrients, naturally present in FERMAID®O, such as vitamins (thiamine, biotin, pantothenic acid) and minerals (magnesium and zinc) all contribute to cleaner and more reliable fermentations.

- Organic nitrogen has a tremendous impact on the organoleptic qualities of wine where it increases the expression of some aromatic fruity esters.

- High ammonium (DAP) concentrations inhibit the uptake of amino acids by inhibition of specific transport systems, reducing the influx of the valuable amino acids and potentially decreasing the entry of thiol precursors into the yeast cell. Hence for aromatic white varieties the use of FERMAID®O is highly desirable.
KEY NOTES ON NUTRIENT DOSING FOR EFFICIENT ALCOHOLIC FERMENTATION

Initial YAN is an indicator of the nutritional composition of the must, but other factors need to be taken into consideration that also dictate the quantity of nutrient that is needed to ensure complete fermentation.

Factors affecting nitrogen utilization and requirements

- **pH**: Active transport systems are affected at low pH. High pH optimum for ammonium transport.
- **Ethanol toxicity**: Active transport process such as amino acid accumulation is inhibited in the presence of alcohol.
- **Temperature**: the rate of accumulation of amino acids is reduced at low temperatures.
- **Plasma membrane composition**: low sterols will reduce the efficiency of nitrogen transport.
- **Yeast strain**: different yeast strains have different nitrogen requirements and rates of assimilation; refer to the datasheet for the yeast to be used.
- **Wild yeast**: will provide competition for nitrogen sources.
- **Yeast Dose rate**: The use of DAP can lead to a yeast biomass higher than required, hence leading to a higher nitrogen demand than initially anticipated.

GUIDELINES FOR USE

Re-suspend Fermaid™ O in 10x its weight in water. Ensure it is well dispersed with no lumps, then add immediately to the tank.

**Dose Rate of Fermaid O – Refer to table below.**

A 20g/hL dose of Fermaid O will give 8.6mg/L of actual* YAN (a YAN equivalent** of 20mg/L). For Low YANs, Fermaid AT is the recommended product. A 20g/hL dose of Fermaid AT provides 24mg/L of actual* YAN.

<table>
<thead>
<tr>
<th>Juice/Must YAN</th>
<th>Yeast Rehydration</th>
<th>Start AF</th>
<th>1/3rd AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;200 mg/L</td>
<td>Go-Ferm® Protect Evolution – 30g/hL.</td>
<td>Fermaid®O – 20g/hL</td>
<td></td>
</tr>
<tr>
<td>125-200 mg/L</td>
<td>Go-Ferm® Protect Evolution – 30g/hL.</td>
<td>Fermaid®O – 20g/hL</td>
<td>Fermaid®O – 20g/hL</td>
</tr>
<tr>
<td>70 - 125 mg/L</td>
<td>Go-Ferm® Protect Evolution – 30g/hL.</td>
<td>Fermaid®O – 40g/hL</td>
<td>Fermaid®AT – 20g/hL</td>
</tr>
<tr>
<td>&lt;70 mg/L</td>
<td>Go-Ferm® Protect Evolution – 30g/hL.</td>
<td>Fermaid®AT – 30g/hL</td>
<td>Fermaid®AT – 30g/hL</td>
</tr>
</tbody>
</table>

Actual YAN verses ‘YAN Equivalent’ requires a special mention.

- **Actual YAN** is how much Yeast Assimilable Nitrogen is present in the product (mg/g) or present for a given dose of a product mg/L. A 20g/hL dose of Fermaid O provides 8.6mg/L of YAN.
- In many trials it has been demonstrated that organic YAN is approximately 2.5 times more efficient than inorganic YAN on a per mg basis. Given this, many suppliers quote a YAN equivalent. Hence a 20g/hL dose of Fermaid O has a YAN equivalent (to inorganic) of 24mg/L. This concept needs to be linked to a defined method of evaluation: using a MS70 synthetic medium with reference yeast and a 40 g / hL NH₄⁺ addition compared to various concentrations of the product to be evaluated and then measuring their effect on dCO₂/dt before it is a value / concept that can be used to compare products.

Circumstances such as fruit quality, variety, winemaking practice, must parameters, yeast nutrient demand and cellar conditions are infinitely variable and impact on yeast performance.

PACKAGING AND STORAGE

- Available in 2.5 kg and 10 kg bags.
- Store in a cool (below 25°C) and dry environment away from direct sunlight and strong odours.
- Shelf-life at the recommended storage temperature is 4 years from production time.

The information herein is true and accurate to the best of our knowledge; however, this data sheet is not to be considered as a guarantee, expressed or implied, or as a condition of sale of this product.