



OENOLOGY CATALOGUE



PRODUCT

WINE YEAST



White wine

PM16 **NEW** NX16 **NEW** BV818

Rose wine

RV171 CEC01

Red wine

CEC01 CECA RV002 RV100 RV171

Sparkling wine

PM16 **NEW** BV818

Non *Saccharomyces*

CVE-7

NUTRIENTS AND PROTECTORS



Protector

Nutri-Rehyd **NEW**

Nutrients

NutriSafe **NEW** AROM-Guard NutrienFast

FN53 **NEW** FN502 FN301

FN401 FN405 FN408

CW101

SPECIFIC YEAST DERIVATIVES



Natural antioxidants

GH-3 FN401 GH FN502 GH

Mannoproteins

MP60

Functional Mannoproteins

OENO Soften **NEW** StabFresh **NEW**

Aroma promoter

AromPro CU200

WINEMAKING ENZYME



NEW Angel winemaking enzyme CLAR

NEW Angel winemaking enzyme MACER

Angel PM16

Saccharomyces cerevisiae bayanus for sparkling wines and difficult conditions.

An excellent choice for primary and secondary fermentation, this reliable strain yields elegant sparkling wines along with still white, rose, and red varieties.



NEW PRODUCT

Product Description

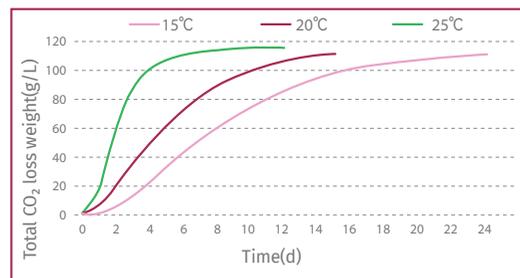
PM16 is a typical Prise de Mousse yeast from Champagne region (France). This yeast is robust, low-nutrient-requirement and high-alcohol-tolerance strain for white wine, sparkling wine, late-harvest wine, also cider and mead. The H₂S production of PM16 is low, and the fermentation is vigorous to produce a dry wine with clean and neutral aroma, especially for Chardonnay with subtle pear, citrus like flavors. PM16 has a good tolerance for SO₂ and high alcohol level, so it is very recommended for restarting stuck fermentation. With the good characteristic of fermenting in low temperature, it also used in sparkling secondary fermentation. PM16 has rapid fermentation rate with short lag time. PM16 has neutral contribution to wine's organoleptic profile (low production of esters), makes it ideal for producing different types of red, white and fruit wines.

Fermentation Characteristics

• Fermentation temperature range	10.0-30.0 °C
• Alcohol tolerance	around 18%vol
• Nitrogen requirement	low
• Fermentation speed	fast
• Production of volatile acidity	low
• High tolerance of SO ₂	
• Production of SO ₂	moderate
• Production of H ₂ S	low
• Production of foam	low
• Production of glycerol	moderate
• Flocculation	very good

Experiment Result

PM16 is highly versatile, offering minimal sensory influence and rapidly establishing dominance to manage native microflora effectively.



Fermentation kinetics of PM16 at different temperatures

Chemical and Biological Analysis

• Humidity	< 8%	• <i>Escherichia coli</i>	Absence/g
• Viable yeast	> 10 ¹⁰ CFU/g	• <i>Salmonella</i>	Absence/25g
• Aerobic plate count	< 10 ⁴ CFU/g	• <i>Staphylococci</i>	Absence/g
• Lactic acid bacteria	< 10 ⁵ CFU/g	• Lead	< 2 mg/kg
• Moulds	< 10 ³ CFU/g	• Mercury	< 1 mg/kg
• Yeast of different species	< 10 ⁵ CFU/g	• Arsenic	< 3 mg/kg
• Coliforms	< 10 ² CFU/g	• Cadmium	< 1 mg/kg

WINE YEAST



Angel PM16



Application

A wide range of applications for different types drinks, including wine, cider, mead and other fruits. Suitable for secondary fermentation for sparkling wine with short lag phase. Suitable for restarting fermentations, low temperature fermentations, and high clarified, low nitrogen and growth factors musts. A pure yeast selected for medium aromatic characters and robust fermentations. The fermentation kinetics of PM16 is complete and robust with clean varietal aromas without undesirable compounds. Good fermentation activity in the conditions of nutrient deficiency or high potential alcohol content. Low production of H₂S makes wine clean. Neutral sensory for wines to preserves the varietal properties.

Protocol for Use

Rehydration Without Yeast Nutrition

1. Rehydrate the yeast using water at 10 times its weight, with a temperature range of 35 °C to 40 °C.
2. Resuspend the yeast by gently stirring, and wait for 20 minutes.
3. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature.
4. Inoculate into the juice/must.

Rehydration with Nutri-Rehyd

In the situations of tough fermentation conditions (high potential alcohol, over clarified must, low temperature), rehydrating yeast with Nutri-Rehyd is recommended. Carry out the rehydration procedure according to the selected Nutri-Rehyd product's instructions.

Storage and Shelf Life

Store in original sealed packages, in a cool and dry environment. Shelf life at the recommended conditions is 42 months. After opening the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Package

Vacuum aluminum foil packaging, 500g/bags, 20bags/carton.

Dosage

Recommended dose: 20-30 g/hL
Sparkling wine: 30-40 g/hL
Restart fermentation: 30-50 g/hL

Tips

- The difference between the yeast and must temperatures should not exceed 10 °C during inoculation.
- Fermentations using active dry yeast can reduce the risk of contamination by wild yeast and harmful microorganisms.
- The rehydration process must not exceed 30 minutes.



Angel NX16

Saccharomyces cerevisiae for white wines with significant aromatic intensity.



NEW PRODUCT

Product Description

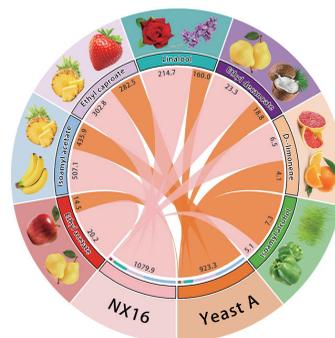
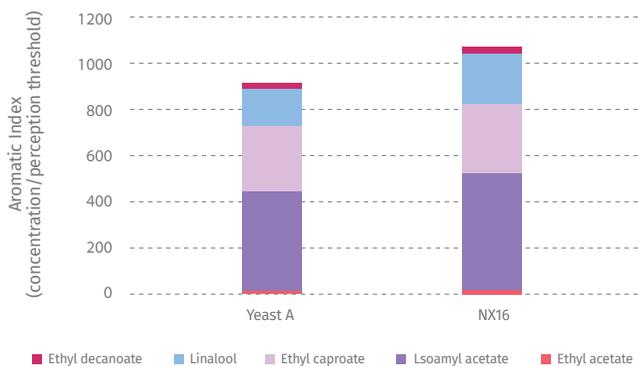
NX16 is isolated from Ningxia by the research group leading by Professor Yanlin Liu at Northwest A&F University in China. NX16 exhibits a short lag phase, excellent fermentation capacity, and robust tolerance to poor fermentation conditions, where it demonstrates smooth and stable performance during alcoholic fermentation. NX16 is recommended for classic white wines such as Chardonnay and Riesling. When used for vinification of neutral or aromatic grape varieties, NX16 produces white wines with high aromatic intensity.

Fermentation Characteristics

• Fermentation temperature range	10.0-32.0 °C	• Production of H ₂ S	low
• Alcohol tolerance	≥ 16% vol	• Production of foam	low
• Nitrogen requirement	moderate	• Competitive factor	negative
• Production of volatile acidity	low		

Aromatic Characteristics

NX16 enhances the volatile profile of white wines by increasing concentrations of compounds such as ethyl decanoate, ethyl caproate, isoamyl acetate, and linalool, leading to more robust and diverse fruity (e.g., apple, pineapple, pear) and floral (e.g., rose and violet) notes. In addition, NX16 effectively controls isoamyl alcohol, resulting in reduced vegetal and grassy notes. NX16 constantly demonstrates its ability to form a more elegant and refined aroma profile in white wines.



Note: The values shown in the figure are Aromatic Index

WINE YEAST



Angel NX16



Chemical and Biological Analysis

• Humidity	< 8%	• <i>Escherichia coli</i>	Absence/g
• Viable yeast	> 10 ¹⁰ CFU/g	• <i>Salmonella</i>	Absence/25g
• Aerobic plate count	< 10 ⁴ CFU/g	• <i>Staphylococci</i>	Absence/g
• Lactic acid bacteria	< 10 ⁵ CFU/g	• Lead	< 2 mg/kg
• Moulds	< 10 ³ CFU/g	• Mercury	< 1 mg/kg
• Yeast of different species	< 10 ⁵ CFU/g	• Arsenic	< 3 mg/kg
• Coliforms	< 10 ² CFU/g	• Cadmium	< 1 mg/kg

Protocol for Use

Rehydration Without Yeast Nutrition

Dosage: 20 to 40 g/hL

1. Rehydrate the yeast using water at 10 times its weight, with a temperature range of 35 °C to 40 °C.
2. Resuspend the yeast by gently stirring, and wait for 20 minutes.
3. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature.
4. Inoculate into the juice/must.

Rehydration with Nutri-Rehyd

In the situations of tough fermentation conditions (high potential alcohol, over clarified must, low temperature), rehydrating yeast with Nutri-Rehyd is recommended. Carry out the rehydration procedure according to the selected Nutri-Rehyd product's instructions.

Storage and Shelf Life

Store in original sealed packages, in a cool and dry environment. Shelf life at the recommended conditions is 42 months. After opening, the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Package

Vacuum aluminum foil packaging,
500 g/bags, 20 bags/carton.

Tips

- The difference between the yeast and must temperatures should not exceed 10 °C during inoculation.
- Fermentations using active dry yeast can reduce the risk of contamination by wild yeast and harmful microorganisms.
- The rehydration process must not exceed 30 minutes.

WINE YEAST



Angel BV818

Saccharomyces cerevisiae bayanus for a wide variety of applications, including wine, fruit wines and cider. Presenting a strong, reliable and neutral profile.



Product Description

BV818 was selected from natural wine fermentation with strong and reliable fermentation kinetics. Its sensory contribution is considered neutral because it makes very little contribution to the sensory characteristics of wine, thus highlighting the aroma characteristics of famous white grape varieties such as Italian Riesling, Chardonnay, and Sauvignon Blanc. It is widely used around the world in the production of white wine and secondary fermentation.

Fermentation Characteristics

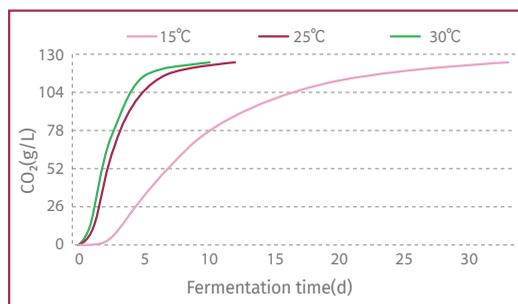
• Alcohol tolerance	up to 18%vol
• Fermentation temperature range	10 - 30 °C
• Nitrogen requirement	low
• Production of volatile acidity	low
• Sulfur dioxide resistance	good
• Production of H ₂ S	low
• Production of foam	low
• Competitive factor	active

Chemical and Biological Analysis

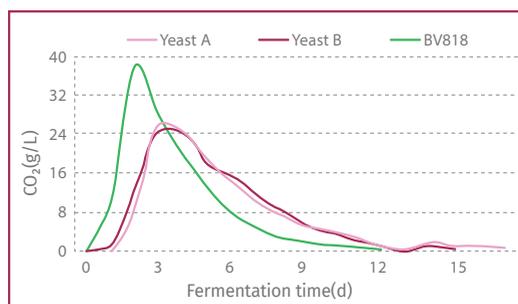
• Humidity	< 8%
• Viable yeast	> 10 ¹⁰ CFU/g
• Aerobic plate count	< 10 ⁴ CFU/g
• Lactic acid bacteria	< 10 ⁵ CFU/g
• Moulds	< 10 ³ CFU/g
• Yeast of different species	< 10 ⁵ CFU/g
• Coliforms	< 10 ² CFU/g
• <i>Escherichia coli</i>	Absence/g
• <i>Salmonella</i>	Absence/25g
• <i>Staphylococci</i>	Absence/g
• Lead	< 2 mg/kg
• Mercury	< 1 mg/kg
• Arsenic	< 3 mg/kg
• Cadmium	< 1 mg/kg

Experimental Result

BV818 is well-suited for a wide variety of applications. It exerts little effect on the sensory profile and implants quickly to effectively control the native microflora.



The fermentation kinetics of BV818 at different temperatures

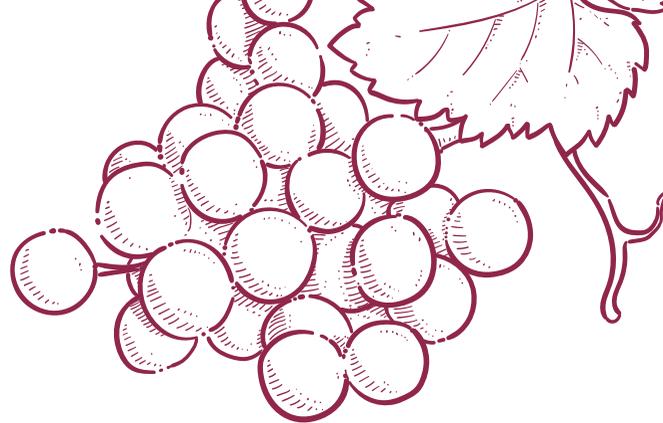


Comparison of fermentation kinetics between different yeasts strains at 25 °C

WINE YEAST



Angel BV818



Protocol for Use

Rehydration Without Yeast Nutrition

Dosage: 20 to 40 g/hL

1. Rehydrate the yeast using water at 10 times its weight, with a temperature range of 35 °C to 40 °C.
2. Resuspend the yeast by gently stirring, and wait for 20 minutes.
3. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature.
4. Inoculate into the juice/must.

Rehydration with Nutri-Rehyd

In the situations of tough fermentation conditions (high potential alcohol, over clarified must, low temperature), rehydrating yeast with Nutri-Rehyd is recommended. Carry out the rehydration procedure according to the selected Nutri-Rehyd product's instructions.

Dosage

20-40 g/hL

Reds	Rose	Whites	Sparklings	Ferm Speed	Nitrogen Need	Sensory Effect
★★	★★★	★★★★	★★★★	Fast	Low	EVC

Note: ★★★★★=Best Recommendation

EVC=Enhances Varietal Character

Notes

It has good performance in low temperature, high concentration of SO₂ or in the shortage of nutrient fermentation; enhance famous white grape aroma such as Italian Riesling, Chardonnay, Sauvignon Blanc. It can restart the end fermentation, and smooth sparkling wine second fermentation.

Storage and Shelf Life

Store in original sealed packages, in a cool and dry environment. Shelf life at the recommended conditions is 42 months. After opening the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Package

Vacuum aluminum foil packaging,
500 g/bags , 20 bags/carton.

Tips

- The difference between the yeast and must temperatures should not exceed 10 °C during inoculation.
- Fermentations using active dry yeast can reduce the risk of contamination by wild yeast and harmful microorganisms.
- The rehydration process must not exceed 30 minutes.



Angel RV171

Saccharomyces cerevisiae for young and fresh red, rose wine, presenting a high level esters, while metabolizing malic acid.



Product Description

RV171 was naturally isolated and chosen for its ability to produce large quantities of esters (like isoamyl esters), it can enhance the aromatic features of wines produced from neutral grape varieties. This particular yeast strain is capable of adsorbing polyphenolic compounds from its cell walls, thus lessening the tannic structure in young and fresh red wines. Grape juice inoculated with RV171 is likely to undergo malolactic fermentation since this yeast strain is able to metabolize malic acid during the primary fermentation stage. RV171 is the perfect option for making young, fresh, fruity and easily drinkable red, rosé and white wines, and also a fitting choice for late harvest wines.

Fermentation Characteristics

- It is particularly suited for high-acid grapes or varieties that will undergo acid adjustment.
- Fermentation temperature range 14.0 - 30.0 °C
- Alcohol tolerance up to 14%vol
- Production of volatile acidity low
- Production of H₂S moderate - high
- No harmful sulfide
- Competitive factor sensitive
- Glycerol production ≥7 g/L

Chemical and Biological Analysis

- Humidity < 8%
- Viable yeast > 10¹⁰ CFU/g
- Aerobic plate count < 10⁴ CFU/g
- Lactic acid bacteria < 10⁵ CFU/g
- Moulds < 10³ CFU/g
- Yeast of different species < 10⁵ CFU/g
- Coliforms < 10² CFU/g
- *Escherichia coli* Absence/g
- *Salmonella* Absence/25g
- *Staphylococci* Absence/g
- Lead < 2 mg/kg
- Mercury < 1 mg/kg
- Arsenic < 3 mg/kg
- Cadmium < 1 mg/kg

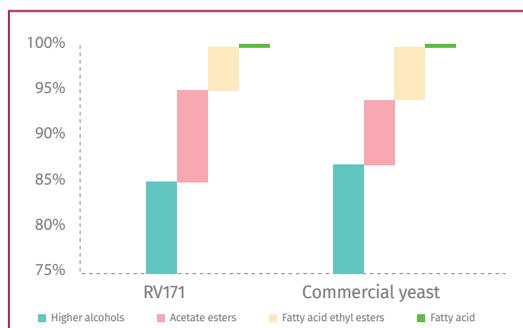
Experimental Result

RV171 has excellent ability to reduce malic acid.



Aroma Characteristic

It has a high level of ester production, which endows the wine with a distinctive fruity aroma. It is recommended to make fresh and fruity wines.



WINE YEAST



Angel RV171



Protocol for Use

Rehydration Without Yeast Nutrition

Dosage: 20 to 40 g/hL

1. Rehydrate the yeast using water at 10 times its weight, with a temperature range of 35 °C to 40 °C.
2. Resuspend the yeast by gently stirring, and wait for 20 minutes.
3. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature.
4. Inoculate into the juice/must.

Rehydration with a Yeast Nutrition

In the situations of tough fermentation conditions (high potential alcohol, over clarified must, low temperature), rehydrating yeast with Nutri-Rehyd is recommended. Carry out the rehydration procedure according to the selected Nutri-Rehyd product's instructions.

Dosage

20-40 g/hL

Reds	Rose	Whites	Ferm Speed	Nitrogen Need	Sensory Effect
★★★	★★★★	★★★	Moderate	Medium	EVC

Note: ★★★★★=Best Recommendation

EVC=Enhances Varietal Character

Package

Vacuum aluminum foil packaging,
500 g/bags , 20 bags/carton.

Storage and Shelf Life

Store in original sealed packages, in a cool and dry environment. Shelf life at the recommended conditions is 42 months. After opening the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Tips

- The difference between the yeast and must temperatures should not exceed 10 °C during inoculation.
- Fermentations using active dry yeast can reduce the risk of contamination by wild yeast and harmful microorganisms.
- The rehydration process must not exceed 30 minutes.



Angel CEC01

Saccharomyces cerevisiae for fresh red wine, showing elegance and complexity.



Product Description

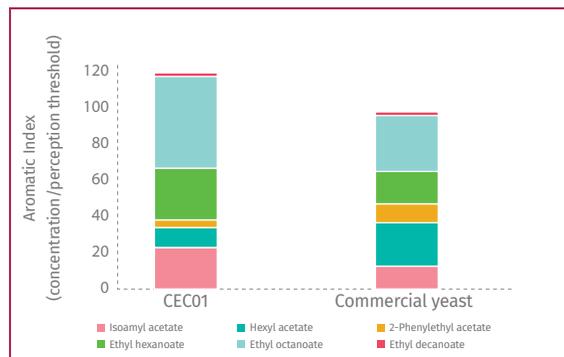
CEC01 was isolated by Enology college of Northwest A&F University from Merlot spontaneous fermentation in Xinjiang province, China. This yeast has a good tolerance to ethanol, a short lag phase and an excellent fermentation capacity. CEC01 enhances aromas complexity (especially ester aroma compounds expression) and varietal character of grapes, masks the green flavor compounds. Suitable for red grape varieties with elegant and complex aroma and round mouthfeel, such as Merlot, Pinot Noir, Cabernet Franc.

Fermentation Characteristics

• Fermentation temperature range	10.0-35.0 °C
• Alcohol tolerance	up to 16%vol
• Nitrogen requirement	low
• Fermentation speed	moderate
• Production of volatile acidity	low
• Production of H ₂ S	low
• Production of foam	low
• Competitive factor	active
• Good tolerance	
• Flocculation	good
• Production of glycerol	moderate - high

Aroma characteristic

Contribution of CEC01 to ester compounds



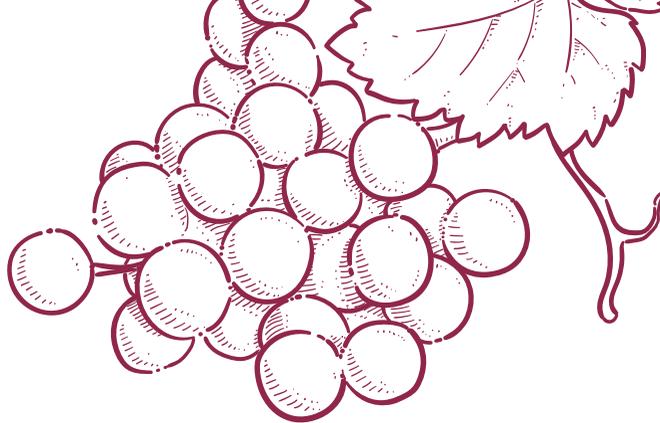
Chemical and Biological Analysis

• Humidity	< 8%	• <i>Escherichia coli</i>	Absence/g
• Viable yeast	> 10 ¹⁰ CFU/g	• <i>Salmonella</i>	Absence/25g
• Aerobic plate count	< 10 ⁴ CFU/g	• <i>Staphylococci</i>	Absence/g
• Lactic acid bacteria	< 10 ⁵ CFU/g	• Lead	< 2 mg/kg
• Moulds	< 10 ³ CFU/g	• Mercury	< 1 mg/kg
• Yeast of different species	< 10 ⁵ CFU/g	• Arsenic	< 3 mg/kg
• Coliforms	< 10 ² CFU/g	• Cadmium	< 1 mg/kg

WINE YEAST



Angel CEC01



Protocol for Use

Rehydration without yeast nutrition

Dosage: 20 to 40 g/hL

1. Rehydrate the yeast using water at 10 times its weight, with a temperature range of 35 °C to 40 °C.
2. Resuspend the yeast by gently stirring, and wait for 20 minutes.
3. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature.
4. Inoculate into the juice/must.

Rehydration with Nutri-Rehyd

In the situations of tough fermentation conditions (high potential alcohol, over clarified must, low temperature), rehydrating yeast with Nutri-Rehyd is recommended. Carry out the rehydration procedure according to the selected Nutri-Rehyd product's instructions.

Storage and Shelf Life

Store in original sealed packages, in a cool and dry environment. Shelf life at the recommended conditions is 42 months. After opening the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Package

Vacuum aluminum foil packaging,
500 g/bags, 20 bags/carton.

Tips

- The difference between the yeast and must temperatures should not exceed 10 °C during inoculation.
- Fermentations using active dry yeast can reduce the risk of contamination by wild yeast and harmful microorganisms.
- The rehydration process must not exceed 30 minutes.



Angel CECA

Saccharomyces cerevisiae for aged red wine, presenting fine tannins and complex aroma.



Product Description

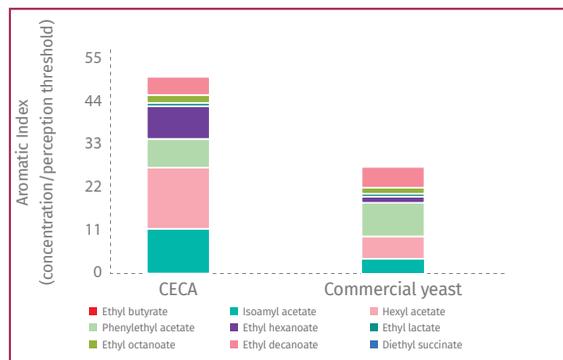
CECA was isolated by Enology college of Northwest A&F University from Cabernet Sauvignon spontaneous fermentation in Ningxia province, China. With short lag phase, excellent fermentation kinetics and high alcohol tolerance, CECA is in favor of wine color and structure expression with high quality tannin and strong wine body. It can be very good to excavate and express "authentic" typical characteristics of grape varieties. Wine fermented by CECA presents fine tannins and complex aroma, such as dark berries, spice and coffee. CECA is an excellent choice for making aged red wines, especially for Cabernet Sauvignon, Cabernet Franc, Syrah, Merlot.

Fermentation Characteristics

• Fermentation temperature range	10.0-35.0°C
• Alcohol tolerance	up to 16%vol
• Nitrogen requirement	low - moderate
• Fermentation speed	moderate
• Production of volatile acidity	low
• Production of H ₂ S	low
• Production of foam	low
• Competitive factor	negative
• Good tolerance	
• Flocculation	good
• Production of glycerol	moderate - high

Aroma Characteristic

Contribution of CECA to ester compounds



Chemical and Biological Analysis

• Humidity	< 8%	• <i>Escherichia coli</i>	Absence/g
• Viable yeast	> 10 ¹⁰ CFU/g	• <i>Salmonella</i>	Absence/25g
• Aerobic plate count	< 10 ⁴ CFU/g	• <i>Staphylococci</i>	Absence/g
• Lactic acid bacteria	< 10 ⁵ CFU/g	• Lead	< 2 mg/kg
• Moulds	< 10 ³ CFU/g	• Mercury	< 1 mg/kg
• Yeast of different species	< 10 ⁵ CFU/g	• Arsenic	< 3 mg/kg
• Coliforms	< 10 ² CFU/g	• Cadmium	< 1 mg/kg

WINE YEAST



Angel CECA



Protocol For Use

Rehydration Without Yeast Nutrition

Dosage: 20 to 40 g/hL

1. Rehydrate the yeast using water at 10 times its weight, with a temperature range of 35 °C to 40 °C.
2. Resuspend the yeast by gently stirring, and wait for 20 minutes.
3. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature.
4. Inoculate into the juice/must.

Rehydration with Nutri-Rehyd

In the situations of tough fermentation conditions (high potential alcohol, over clarified must, low temperature), rehydrating yeast with Nutri-Rehyd is recommended. Carry out the rehydration procedure according to the selected Nutri-Rehyd product's instructions.

Storage and Shelf Life

Store in original sealed packages, in a cool and dry environment. Shelf life at the recommended conditions is 42 months. After opening the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Package

Vacuum aluminum foil packaging,
500g/bags, 20bags/carton.

Tips

- The difference between the yeast and must temperatures should not exceed 10 °C during inoculation.
- Fermentations using active dry yeast can reduce the risk of contamination by wild yeast and harmful microorganisms.
- The rehydration process must not exceed 30 minutes.

WINE YEAST



Angel RV002

Saccharomyces cerevisiae for red wine, vigorous fermenter with a short lag time, creating enhanced mouthfeel and color stability due to polysaccharide-tannin complexing.



Product Description

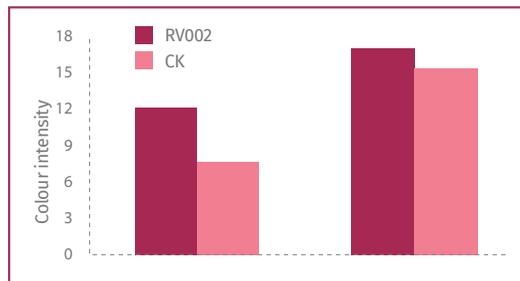
RV002 is a natural fermentation strain, this yeast demonstrates reliable safety, consistent performance and complete fermentation characteristics. It exhibits outstanding tannin and color extraction capacity while generating abundant polysaccharides. The strain significantly enhances wine coloration, particularly in red wines, contributing to well-structured, full-bodied wines with pronounced fruit expression, clean varietal character and harmonious palate. Its remarkable aroma-enhancing properties elevate diverse aromatic compounds. The yeast displays favorable flocculation behavior during late fermentation with stable pigment retention. The higher alcohols and amino acids released through autolysis provide optimal conditions for subsequent malolactic fermentation while minimizing exogenous interference.

Fermentation Characteristics

• Fermentation temperature range	10 - 35 °C
• Alcohol tolerance	up to 18%vol
• Nitrogen requirement	moderate
• Production of polysaccharides	high
• Production of volatile acidity	low
• Production of H ₂ S	low
• Potential for SO ₂ production	low
• Production of foam	low
• Competitive factor	neutral
• Glycerol production	≥ 8 g/L

Experimental Result

RV002 has a high extraction of anthocyanins and tannins.



Effect of the RV002 yeast on the color stability after 3 years in a Cabernet Sauvignon wine.

Chemical and Biological Analysis

• Humidity	< 8%	• <i>Escherichia coli</i>	Absence/g
• Viable yeast	> 10 ¹⁰ CFU/g	• <i>Salmonella</i>	Absence/25g
• Aerobic plate count	< 10 ⁴ CFU/g	• <i>Staphylococci</i>	Absence/g
• Lactic acid bacteria	< 10 ⁵ CFU/g	• Lead	< 2 mg/kg
• Moulds	< 10 ³ CFU/g	• Mercury	< 1 mg/kg
• Yeast of different species	< 10 ⁵ CFU/g	• Arsenic	< 3 mg/kg
• Coliforms	< 10 ² CFU/g	• Cadmium	< 1 mg/kg

WINE YEAST



Angel RV002



Application Features

This yeast can be used to produce high-quality red wine. It has killer activity and extraction of anthocyanins and tannins is high. It helps produce wines with typicality, intense aroma and stable pigment, especially the famous red grape varieties such as Cabernet Sauvignon, Cabernet Franc, Cabernet Sauvignon and Pinot Noir. It is a preferred strain in brewing of high-grade red wines.

Protocol for Use

Rehydration Without Yeast Nutrition

Dosage: 20 to 40 g/hL

1. Rehydrate the yeast using water at 10 times its weight, with a temperature range of 35 °C to 40 °C.
2. Resuspend the yeast by gently stirring, and wait for 20 minutes.
3. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature.
4. Inoculate into the juice/must.

Rehydration with Nutri-Rehyd

In the situations of tough fermentation conditions (high potential alcohol, over clarified must, low temperature), rehydrating yeast with Nutri-Rehyd is recommended. Carry out the rehydration procedure according to the selected Nutri-Rehyd product's instructions.

Dosage

20-40 g/hL

Reds	Rose	Whites	Sparklings	Ferm Speed	Nitrogen Need	Sensory Effect
★★★	★★★	★★★	★★★★	Moderate	Medium	EVC

Note: ★★★★★=Best Recommendation
EVC=Enhances Varietal Character

Storage and Shelf Life

Store in original sealed packages, in a cool and dry environment. Shelf life at the recommended conditions is 42 months. After opening the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Package

Vacuum aluminum foil packaging,
500 g/bags , 20 bags/carton.

Tips

- The difference between the yeast and must temperatures should not exceed 10 °C during inoculation.
- Fermentations using active dry yeast can reduce the risk of contamination by wild yeast and harmful microorganisms.
- The rehydration process must not exceed 30 minutes.



Angel RV100

Saccharomyces cerevisiae for red, rose and white wine, vigorous fermenter with a short lag time, stable and thorough fermentation process, presenting the wine a fresh and aromatic character, highlighting the fruity and alcoholic characteristics of the wine.



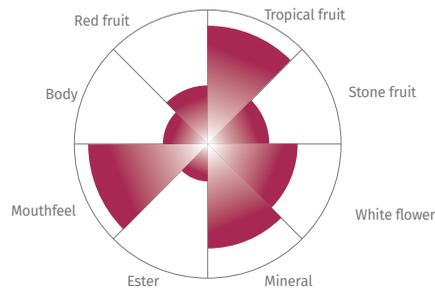
Product Description

RV100 is screened by natural fermentation. RV100 has low nutrient requirements and produces more esters, such as isoamyl acetate, hexyl acetate, and phenethyl acetate. These esters bring a fresh aroma to the mouth in neutral or high-yielding grapes. Among the high-ester producing strains, RV100 is the most resistant strain under fermentation conditions such as low turbidity, low temperature, and low fatty acid content. RV100 is also a mature strain for ice wine fermentation.

Fermentation Characteristics

• Fermentation temperature range	10 - 35 °C
• Alcohol resistance	up to 18%vol
• Fermentation speed	fast
• Production of volatile acidity	low
• Production of H ₂ S	moderate
• Production of foam	low
• Glycerol production	≥ 6 g/L

Experimental Result



Chemical and Biological Analysis

• Humidity	< 8%	• <i>Escherichia coli</i>	Absence/g
• Viable yeast	> 10 ¹⁰ CFU/g	• <i>Salmonella</i>	Absence/25g
• Aerobic plate count	< 10 ⁴ CFU/g	• <i>Staphylococci</i>	Absence/g
• Lactic acid bacteria	< 10 ⁵ CFU/g	• Lead	< 2 mg/kg
• Moulds	< 10 ³ CFU/g	• Mercury	< 1 mg/kg
• Yeast of different species	< 10 ³ CFU/g	• Arsenic	< 3 mg/kg
• Coliforms	< 10 ² CFU/g	• Cadmium	< 1 mg/kg

WINE YEAST



Angel RV100



Protocol for Use

Rehydration Without Yeast Nutrition

Dosage: 20 to 40 g/hL

1. Rehydrate the yeast using water at 10 times its weight, with a temperature range of 35 °C to 40 °C.
2. Resuspend the yeast by gently stirring, and wait for 20 minutes.
3. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature.
4. Inoculate into the juice/must.

Rehydration with Nutri-Rehyd

In the situations of tough fermentation conditions (high potential alcohol, over clarified must, low temperature), rehydrating yeast with Nutri-Rehyd is recommended. Carry out the rehydration procedure according to the selected Nutri-Rehyd product's instructions.

Dosage

20-40 g/hL

Reds	Rose	Whites	Sparklings	Ferm Speed	Nitrogen Need	Sensory Effect
★★★	★★★	★★★	★★★★	Moderate	Medium	EVC

Note: ★★★★★=Best Recommendation
EVC=Enhances Varietal Character

Package

Vacuum aluminum foil packaging,
500 g/bags , 20 bags/carton.

Implementation

It is high quality yeast strain, restraining wild yeast, good for most wines and fruit wines, especially apple, pear; strawberry, orange, waxberry, etc. producing balance and fragrant aroma.

Storage and Shelf Life

Store in original sealed packages, in a cool and dry environment. Shelf life at the recommended conditions is 42 months. After opening the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Tips

- The difference between the yeast and must temperatures should not exceed 10 °C during inoculation.
- Fermentations using active dry yeast can reduce the risk of contamination by wild yeast and harmful microorganisms.
- The rehydration process must not exceed 30 minutes.



Angel CVE-7

Lachancea thermotolerans

Non-*Saccharomyces* yeast helps re-equilibrate the acidity of wines, especially those from hot climate, thanks to a significant by-production of lactic acid.



Product Description

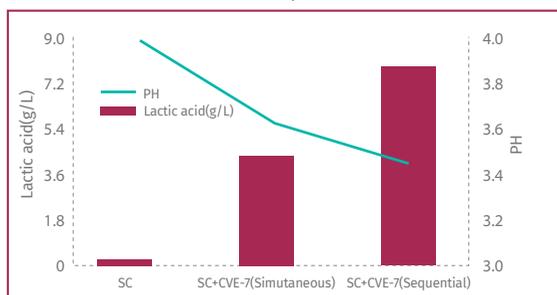
CVE-7 is a pure culture of *Lachancea thermotolerans*, selected from natural fermentation of grape juice by Angel and China Agricultural University, and can convert part of the sugar into lactic acid. It has good physiological tolerance, outstanding ability to start fermentation, and shows smoothness and stableness during alcohol fermentation. The yeast can complete alcohol fermentation independently, and ferment with *Saccharomyces cerevisiae* combination is recommended, which achieves perfect complementarity in aroma and taste, and can reduce the alcohol content of high-sugar fermentation raw materials appropriately. It contains typical aroma of tropical fruits such as grapefruit, pineapple, and mango, and can be used in various red and white wines and other alcoholic beverages.

Fermentation Characteristics

• Pure natural strain	
• Fermentation temperature range	12 - 35°C
• Alcohol tolerance	up to 15%vol
• Yield of lactic acid	2 - 7 g/L
• Nitrogen requirement	low
• pH reduction	0.2 - 0.5
• Foculation	strong

Experiment Result

Effect of different inoculation methods of CVE-7 on lactic acid and pH of wines



Dosage: 15 to 40 g/hL.

Chemical and Biological Analysis

• Humidity	< 8%	• <i>Salmonella</i>	Absence/25g
• Viable yeast	> 10 ¹⁰ CFU/g	• <i>Staphylococci</i>	Absence/g
• Lactic acid bacteria	< 10 ⁵ CFU/g	• Lead	< 2 mg/kg
• Moulds	< 10 ³ CFU/g	• Mercury	< 1 mg/kg
• Yeasts of a different genus, species or strain	< 5%	• Arsenic	< 3 mg/kg
• Coliforms	< 10 ² CFU/g	• Cadmium	< 1 mg/kg
• <i>Escherichia coli</i>	Absence/g		

WINE YEAST



Angel CVE-7



Inoculation

Simultaneous Inoculation

Simultaneous inoculation of CVE-7 and *Saccharomyces cerevisiae* in a 1:1 ratio for fermentation. Rehydrate the yeast using water at 10 times its weight, with a temperature range of 35 °C to 40 °C. Gently stir the yeast to resuspend it, then allow it to stand for 20 minutes. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature. Inoculate into the must.

Sequential Inoculation

1st: INOCULATION: CVE-7

Inoculate at 15-40 g/hL: rehydrate the yeast using water at 10 times its weight, with a temperature range of 20 °C to 30 °C. After 15 minutes, stir very gently. Blend the rehydrated yeast with a bit of juice/must, gradually acclimating the yeast suspension temperature to within 5-10 °C of the juice/must temperature. Inoculate into the must. Total rehydration time should not exceed 45 minutes.

2nd: INOCULATION: *Saccharomyces cerevisiae*

After 24 hours to 48 hours, proceed to the 2nd inoculation of selected *Saccharomyces cerevisiae* yeast at 15-40 g/hL, using Nutri-Rehyd during the rehydration following recommended protocol.

Storage and Shelf Life

Store in original sealed packages, in a cool and dry environment. Shelf life at the recommended conditions is 42 months. After opening the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Package

Vacuum aluminum foil packaging, 500 g/bags, 20 bags/carton.



Nutri-Rehyd

A combination nutrient to protect yeast during rehydration

Description

Nutri-Rehyd is a specific inactive yeast nutrient for dry yeast rehydration to provide organic nitrogen, vitamins, minerals, and survival factor (free unsaturated fatty acid and ergosterol), avoid fermentation problems, such as sluggish and stuck fermentations and reduce the production of off-flavors.

Characteristic

- Nutri-Rehyd is produced through a specific autolysis process in order to obtain high levels of free unsaturated fatty acids and sterols. Unsaturated fatty acids and sterols play an essential role in the stability of membranes, by affecting fluidity and permeability. They are the key factors in the yeast resistance to high ethanol.
- Nutri-Rehyd provides minerals which are essential enzyme cofactors in yeast metabolism, such as Mg, Mn, Zn. Mg^{2+} plays a fundamental role in the growth and metabolism of yeast and is required as a cofactor by over 300 enzymes, including the activity of glycolytic, alcoholic and fatty acid biosynthesis. When magnesium in the growth medium becomes limiting, cells not only cease to grow but actually die.
- Nutri-Rehyd can help yeast to reduce the harm of inorganic salts and sugar in high gravity.

Product characteristics

Aspect	Powder
Colour	Brown
Moisture	< 6.0%
Amino acid nitrogen	≥ 1.5%
Protein	≥ 30.0%

Heavy metal characteristics

Lead	< 2 mg/kg
Mercury	< 1 mg/kg
Arsenic	< 3 mg/kg
Cadmium	< 1 mg/kg

Microbial characteristics

Yeast	≤ 10 ² CFU/g
Lactic bacteria	< 10 ³ CFU/g
Moulds	≤ 10 ² CFU/g
Aerobic plate count	≤ 10 ⁴ CFU/g
Coliforms	≤ 10 ² CFU/g
<i>Salmonella</i>	Absence/25 g
<i>Escherichia coli</i>	Absence/25 g
<i>Staphylococci</i>	Absence/25 g

Instructions for Use

- Recommended dosage: 0.3-0.5 g/L.
- Adding Nutri-rehyd into the rehydration water before the addition of dry yeast. Suspend Nutri-rehyd in 10-15 times water about 40 °C, then add the active dry yeasts to rehydrate yeast at 35-40 °C for 20-30 mins.

PROTECTOR



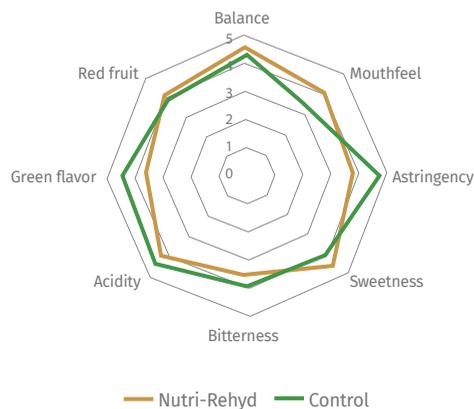
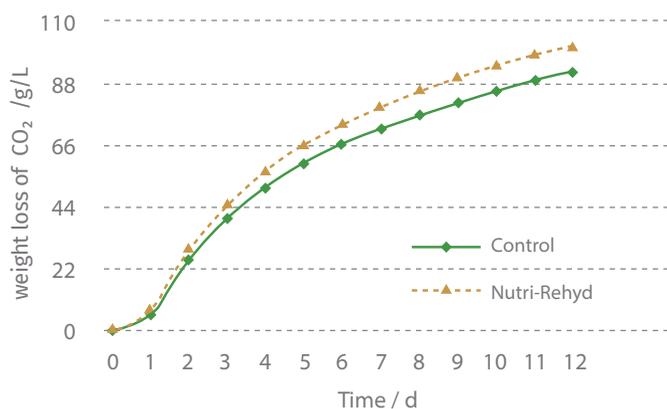
NEW PRODUCT

Nutri-Rehyd

A combination nutrient to protect yeast during rehydration

Experimental Results

Nutri-Rehyd can improve activity of wine yeast during yeast rehydration and improve wine fermentation. At the same time, it can release free polysaccharide and improve the taste of wine, making wine balance with soft tinnins, roundness and sweetness with low green flavor.



Grape variety: Cabernet Sauvignon

Sugar: 250 g/L

YAN: 150 mg/L

Yeast: Angel RV002

Rehydration nutrition: 0.3 g/L

Storage and Package

Store in a cool and dry place. After opening the yeast must be used as soon as possible. Avoiding long-term storage at temperature above 30 °C.

Shelf life: 36 months.

Package: 5 kg/bag, 5 kg*2/box.

PROTECTOR



NutriSafe

NEW PRODUCT

Description

NutriSafe is a Sulphate-free complex nutrient. It is rich in amino acids and specific peptides, which can provide rich and balanced nitrogen sources and survival factors for yeast during alcoholic fermentation, optimize the alcohol fermentation performance and avoids a stuck or sluggish fermentation, especially suited for nitrogen deficiency in the middle or late stage of alcoholic fermentation.

Characteristic

- NutriSafe is a complex nutrient that contains all the nutrients needed by the yeasts during the alcoholic fermentation.
- Yeast hulls can absorb short-chain fatty acids and fermentation toxins produced by yeasts themselves to activate them and make them recover health again.
- Supply amino acids which are assimilated by the yeast to resynthesize sugar transporter proteins and thus reactivate AF.
- Provide minerals for yeast metabolism, which enables the synthesis of sterols necessary to the yeast in order to ensure good membrane resistance against ethanol increases in the medium.
- Provides survival factors, stimulates alcohol fermentation and malolactic fermentation, and facilitate to restart or reprocess the fermentation.

Storage and Package

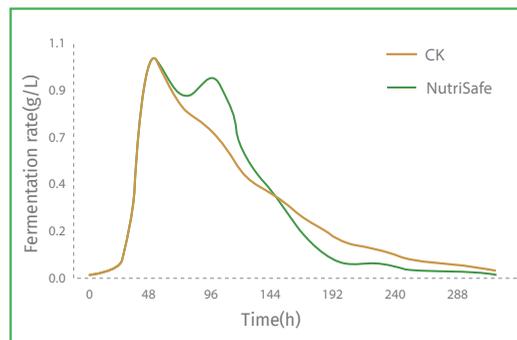
Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 36 months at the recommended storage conditions.

Package: 5 kg/bag, 5 kg*2/box.

Experimental Results

Impact of NutriSafe on Fermentation kinetics



Adding nutrients at about mid fermentation of alcoholic fermentation is effective.

Dosage and Usage

Recommended dosage: 0.2-0.4 g/L or 20-40 g/hL.

Dissolve the product in 10 times its weight of must or warm water, and suspend it well with no lumps and then directly add it to the tank to mix through pump-over.

Using stage: it is recommended at the mid-fermentation, after the yeast multiplication phase.

NUTRIENTS



AROM-Guard

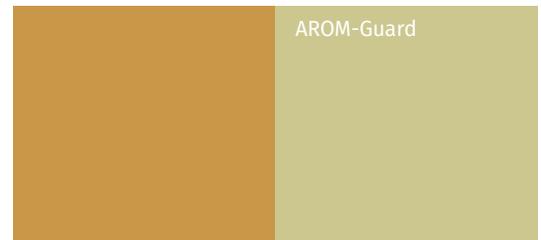
Description

AROM-Guard is a specific product of yeast derivatives with high glutathione, cellulose and vitamins. Glutathione has a high potential antioxidation to preserve aroma and color of white and rose wine. This product provides nutrients to yeast growth, supports yeast in over-clarified juice and increases the fermentability of wine yeast.

Characteristic

- Glutathione >3%.
- Prevents grape juice browning and protects wine color.
- Preserves wine aroma, prolongs white and rose wine shelf-life.
- Provides nutrients, growth factors and vitamins.
- Supports yeast in over-clarified juice.
- Absorbs medium chain fatty acids.

Protect Wine Color



Instructions for Use

- Dosage: 20-50 g/hL.
- Dissolve the product in 10 times its weight of water or must, add to the fermentation container, and mix up.
- Adding-time: before fermentation to prevent browning; during fermentation to provide nutrients for yeast; at the end of fermentation to prolong wine shelf-life.

OD420(Browning Degree)



OD420 indicates the degree of color browning, the higher test value of OD420, the more serious wine color browning.

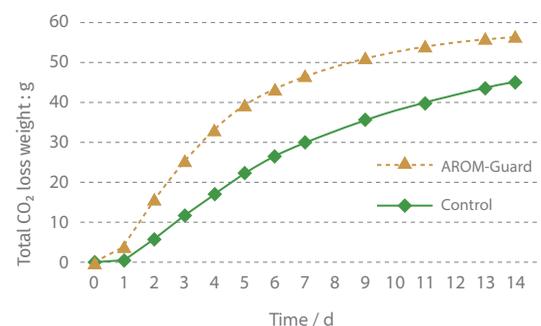
Storage and Package

Store in a cool, dry, odour-free place. Use up as soon as possible once open.

Shelf life: 2 years.

Package: 1 kg/bag, 1 kg*10/box.

Promotes over-clarified juice fermentation



NutrienFast

Description

NutrienFast is a complex yeast nutrient with DAP, inactive yeast, and thiamine, developed to prevent stuck or sluggish fermentations. It supplies nitrogen, amino acids, VB1, sterols and long chain fatty acids to promote yeast metabolism and prevent the production of undesirable compounds.

Characteristic

- Provides 13-14 mg N/ 100mg.
- Provides inorganic nitrogen and alpha amino acids to help alcohol fermentation completely. Provides nitrogen, sterols, long-chain fatty acids and vitamins to promote yeast growth.
- Reduce the occurrence of sluggish and stuck fermentations.

Applications

- YAN (Yeast Available Nitrogen) <150 ppm
- Over-clarification juice, turbidity <50 NTU
- Sugar concentration >250 g/L

Dosage and Usage

Dosage: 20-40 g/hL

Dissolve it in 10 times its weight of water or must, add to the fermentation container, and mix up. Use at 25%~45% sugar consumption of alcoholic fermentation, after adding yeast.

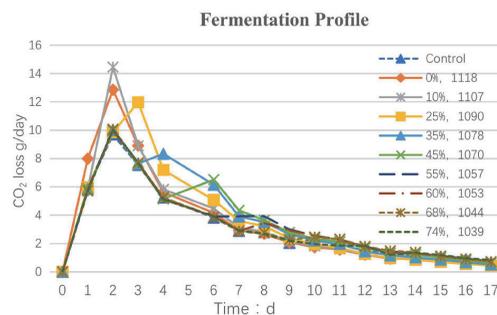
Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

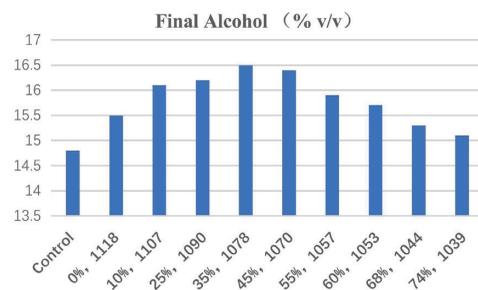
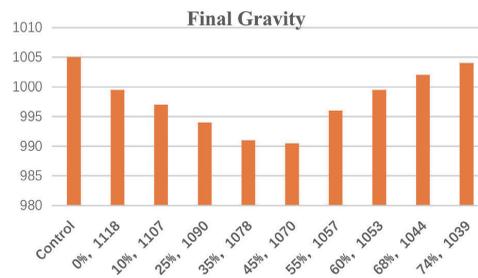
Shelf life is 36 months at the recommended storage conditions.

Package: 5 kg/bag, 5 kg*2/box.

Experimental Results



Grape juice: sugar, 280 g/L; gravity, 1118, pH3.36, Fermentation temperature, 25 °C, NutrienFast, 0.4 g/L at different fermentation phases.



Adding nutrients at about 25%-45% sugar consumption of alcoholic fermentation is effective. When the alcohol reaches more than 10%v/v, yeast no longer absorbs nutrients.

NUTRIENTS



NEW PRODUCT

Yeast Nutrient FN53

Description

Yeast nutrient FN53 is an organic ingredient derived from cells and used for high quality alcoholic fermentations. It is rich in vitamins, minerals, free amino acids and small peptides. Amino acids are used as nutrients for yeast growth and aromatic precursors. This yeast derivative provides natural nitrogen for yeast to face the stressful conditions (high sugars, lack of nutrition) and avoid stuck or sluggish fermentations. It also provides vitamins and minerals to improve yeast cell growth and multiplication.

Applications

- Supply nutrients (free amino acids, small peptides, vitamins and minerals) to stimulate yeast multiplication and growth.
- Improve the viability and the metabolism of yeast during wine fermentation.
- Provide aromatic precursors to synthesize higher alcohols, acetates and esters.
- Inhibit the production of negative sulfur compounds (H₂S).

Dosage and Usage

Dosage: 0.2-0.4 g/L or 20-40 g/hL.

Dissolve the product in 10 times its weight of must or warm water, and suspend it well with no lumps and then directly add it to the tank to mix through pump-over.

Using stage: it is recommended at the beginning of fermentation or at the fermentation of 1/3.

FN53 is particularly recommended in the following cases:

- Over-ripping grape with high potential alcohol and poor nitrogen.
- Restart the stuck or sluggish fermentations.
- Nitrogen deficiency (YAN <200 mg N/L).

Characteristic

Product characteristics

Appearance	powder
Colour	light yellow to brown
Total nitrogen	≥ 10.0%
Amino nitrogen	≥ 5.3%
Humidity	≤ 7.0%
pH	5.0-7.0

Microbial characteristics

Yeast	< 10 ² CFU/g
Lactic bacteria	< 10 ³ CFU/g
Moulds	< 10 ³ CFU/g
Aerobic plate count	< 10 ⁴ CFU/g
Coliforms	< 10 ² CFU/g
Salmonella	Absence/25 g
Escherichia coli	Absence/1 g
Staphylococci	Absence/1 g

Heavy metal characteristics

Lead	< 2 mg/kg
Mercury	< 1 mg/kg
Arsenic	< 3 mg/kg
Cadmium	< 1 mg/kg

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 36 months at the recommended storage conditions.

Package: 20 kg/bag.

NUTRIENTS



Yeast Nutrient FN502

Description

Yeast nutrient FN502 is an organic ingredient derived from cells and used for high quality alcoholic fermentations. During the alcohol fermentation process, it can reasonably improve yeast nutrition, avoiding fermentation risks such as sluggish, stuck, or restart; prevent odor defects related to nutrition deficiency; contribute to the reduction of volatile acid production; increase the content of aromatic substances; ensure the optimization of wine fermentation quality and flavor.

Applications

- Prevents sluggish or stuck fermentation caused by premature yeast aging.
- Enhances fermentation efficiency, contributing to a fresh and well-balanced flavor profile in the wine.
- Optimizes yeast metabolic conditions to minimize the production of undesirable byproducts such as fatty acids and higher alcohols.
- Compensates for nutritional deficiencies (particularly nitrogen sources) during fermentation, promoting yeast population growth and maintaining stable metabolic activity.
- Even under stressful conditions such as low temperature, high osmotic pressure, or nutrient deficiency, the use of this fermentation nutrient also facilitates the initiation of malolactic fermentation.

Dosage and Usage

Dosage: 0.2-0.4 g/L or 20-40 g/hL.

Recommendation usage condition:

- Potential alcohol: >13%vol.
- Turbidity <50NTU.
- Fermentation temperature: <18 °C.
- Sugar concentration: >250 g/L.
- pH: <3.3.
- YAN (Yeast Available Nitrogen) <0.2 g/L.

Dissolve the product in 10 times its weight of must or warm water, and suspend it well with no lumps and then directly add it to the tank to mix through pump-over.

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 24 months at the recommended storage conditions.

Package: 5 kg*2/box, 20 kg/bag.

Characteristic

Product characteristics

Appearance	powder
Colour	light yellow
Total nitrogen	≥10.0%
Amino nitrogen	≥4.0%
Humidity	<7.0%

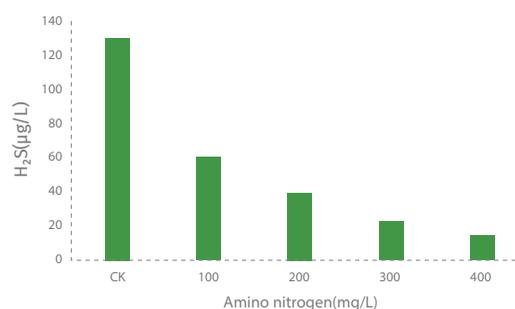
Microbial characteristics

Yeast	< 10 ² CFU/g
Lactic bacteria	< 10 ³ CFU/g
Moulds	< 50 CFU/g
Aerobic plate count	< 10 ⁴ CFU/g
Coliforms	< 10 ² CFU/g
Salmonella	Absence/25 g
Escherichia coli	Absence/1 g
Staphylococci	Absence/1 g

Heavy metal characteristics

Lead	< 2 mg/kg
Mercury	< 1 mg/kg
Arsenic	< 3 mg/kg
Cadmium	< 1 mg/kg

Effect of amino nitrogen content on H₂S production



NUTRIENTS



Yeast Autolysates FN301

Description

This product contains all the functional components of yeast and is suitable for providing a rich and balanced nitrogen source as well as survival factors during alcohol fermentation, preventing potential risks of sluggish or stuck fermentation. When signs of slow fermentation appear, it not only supplies the nutrients required for yeast growth but also possesses the appropriate capacity to adsorb harmful metabolites. Additionally, it contributes abundant flavor precursors to the wine, achieving effects similar to lees aging during the maturation stage.

Applications

- Provides organic nitrogen for yeast alcohol fermentation, promoting yeast growth.
- Contains survival factors and mineral elements to enhance yeast viability.
- Adsorbs harmful medium-chain fatty acids and other metabolic inhibitors produced by yeast.
- Improve yeast viability in the late fermentation stage, preventing sluggish or stuck fermentation.
- Contains abundant aroma precursors, which yeast metabolizes to produce aromatic compounds.
- Releases polysaccharides and polypeptides that enhance the wine's mouthfeel and drinking comfort.

Dosage and Usage

Recommended dosage: 0.2-0.4 g/L or 20-40 g/hL.

Dissolve the product in 10 times its weight of must or warm water, and suspend it well with no lumps and then directly add it to the tank to mix through pump-over.

Using stage: it is recommended at the beginning of fermentation, at the fermentation of 1/3 stage.

Characteristic

Product characteristics

Appearance	powder
Colour	yellow to brown
Total nitrogen	7%-12%
Humidity	< 7.0%

Microbial characteristics

Yeast	< 10 ² CFU/g
Lactic bacteria	< 10 ³ CFU/g
Moulds	< 10 ³ CFU/g
Aerobic plate count	< 10 ⁴ CFU/g
Coliforms	< 10 ² CFU/g
<i>Salmonella</i>	Absence/25 g
<i>Escherichia coli</i>	Absence/1 g
<i>Staphylococci</i>	Absence/1 g

Heavy metal characteristics

Lead	< 2 mg/kg
Mercury	< 1 mg/kg
Arsenic	< 3 mg/kg
Cadmium	< 1 mg/kg

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 36 months at the recommended storage conditions.

Package: 5 kg*2/box, 20 kg/bag, 25 kg/bag.



Inactivated Yeast

Description

Inactivated yeast preparations are manufactured from thermal inactivation of *Saccharomyces cerevisiae*. It is 100% organic nutrient and was mainly used to improve alcoholic, malolactic fermentations and enhance the wine sensory characteristics.

Applications

- Provide nutrients (amino acids, vitamins, minerals and micronutrients) for yeasts multiplication and growth during alcoholic fermentations.
- Help yeast survival at the end of fermentation.
- Enhance alcoholic fermentation, avoid sluggish and stuck fermentations.
- Improve wine organoleptic characteristics; reduce the off-flavour of wine.
- Remove toxic compounds from must and wines.
- Release polysaccharides and increase volume and mouth-feel.

Dosage and Usage

Recommended dosage: 0.2-0.4 g/L or 20-40 g/hL.

Dissolve the product in 10 times its weight of must or warm water, and suspend it well with no lumps and then directly add it to the tank to mix through pump-over.

Using stage: it is recommended at the beginning of fermentation, at the fermentation of 1/3 or during in MLF.

The dosage is according to the initial assimilable nitrogen of the must, its gravity, turbidity and the yeast strain chosen by winemaker.

Characteristic

Product characteristics

	FN401	FN405	FN408
Appearance	powder		
Colour	light yellow to brown		
Protein	≥ 40%	≥ 48%	≥ 75%
Humidity	< 7.0%		

Microbial characteristics

Yeast	< 10 ² CFU/g
Coliforms	< 10 ² CFU/g
Lactic bacteria	< 10 ³ CFU/g
Moulds	< 10 ³ CFU/g
Aerobic plate count	< 10 ⁴ CFU/g
Salmonella	Absence/25 g
Escherichia coli	Absence/1 g
Staphylococci	Absence/1 g

Heavy metal characteristics

Lead	< 2 mg/kg
Mercury	< 1 mg/kg
Arsenic	< 3 mg/kg
Cadmium	< 1 mg/kg

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 24 months at the recommended storage conditions.

Package: 5 kg*2/box, 20 kg/bag.



Yeast Wall CW101

Description

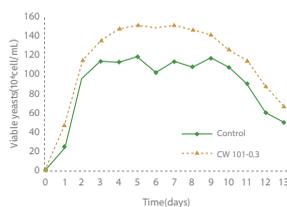
Yeast Wall CW101, obtained from, stimulates the stuck or sluggish fermentations with adsorption capacity of the toxic compounds (hexanoic, octanoic and decanoic acids) and provides ergosterol and unsaturated fatty acids that used by yeast for membrane synthesis.

Applications

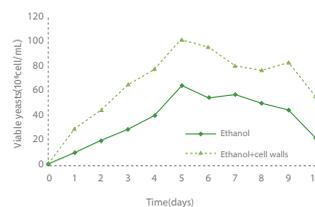
- Absorbs short-chain fatty acids and fermentation toxins produced by yeasts themselves to activate them and make them recover health again.
- Optimize the alcohol fermentation performance and avoids a stuck or sluggish fermentation.
- Absorbs pesticide residues, optimizes fermentation environments.
- Provides survival factors, stimulates alcohol fermentation and malolactic fermentation, and facilitate to restart or reprocess the fermentation.
- Improves wine quality and structure of the wine.

Experimental Results

Yeast wall has an effect to eliminate inhibition compounds in wine must. The richness of (unsaturated fatty acids) and sterols in cell wall preparation promotes the synthesis of yeast membranes and increase cell viability and wine fermentation. Addition of yeast cell wall preparations CW101 in alcohol-adjusted grape juice increases yeasts growth and promote wine fermentation.



Cell viability in 24 °Brix fermentations inoculated at 1×10^6 cells/mL.



Cell viability in alcohol-adjusted must fermentations inoculated at 1×10^6 cells/mL.

Characteristic

CW101 has a large surface area with the ability to absorb residual chemicals and other toxic substances, such as medium-chain fatty acids. The richness of (unsaturated fatty acids, UFA) and sterols in CW101 promotes the synthesis of yeast membranes and increase cell viability and wine fermentation.

Product characteristics

Appearance	powder
Colour	yellow to gray
Polysaccharide	$\geq 40\%$
Protein	15-30%
Humidity	$\leq 7.0\%$
pH	5.0-7.0

Microbial characteristics

Yeast	$< 10^2$ CFU/g
Lactic bacteria	$< 10^3$ CFU/g
Moulds	$< 10^3$ CFU/g
Aerobic plate count	$< 10^4$ CFU/g
Coliforms	$< 10^2$ CFU/g
Salmonella	Absence/25 g
Escherichia coli	Absence/1 g
Staphylococci	Absence/1 g

Heavy metal characteristics

Lead	< 2 mg/kg
Mercury	< 1 mg/kg
Arsenic	< 3 mg/kg
Cadmium	< 1 mg/kg

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 24 months at the recommended storage conditions.

Package: 5 kg*2/box.



Inactivated yeast(glutathione)

Description

Inactivated yeast with guaranteed glutathione is a special inactivated yeast product, which is rich in glutathione (GSH). GSH, a tripeptide consisting of glutamate, cysteine and glycine, is a natural antioxidant, inhibit the oxidation and browning, protect wine aroma. Inactivated yeast with guaranteed glutathione is an important nutrient source for wine fermentation, such as nitrogen nutrients, vitamins, minerals and trace element that promotes alcoholic fermentation and yeast multiplication and growth, avoids stuck or sluggish fermentations. Inactivated yeast with guaranteed glutathione also releases polysaccharides and increases volume and mouthfeel.

Applications

- Release antioxidant peptides into the grape juice and wine.
- Inhibit the oxidation and browning of grape juice and wine.
- Protect aromatic compounds and significantly delay the aroma oxidation.
- Prolong the white and rose wines shelf life.
- Keep aroma freshness and color stability in white and rose wines.
- Provide yeast nutrients for cell growth.
- Enhance yeast metabolism and promote yeast growth.
- Improve the sensory quality of wines.

Dosage and Usage

Recommended dosage: 0.2-0.4 g/L or 20-40 g/hL.

Dissolve the product in 10 times its weight of must or warm water, and suspend it well with no lumps and then directly add it to the tank to mix through pump-over.

Using stage: it is recommended before fermentation in grape juice, at the beginning of fermentation, at the fermentation of 1/3 or after wine fermentation.

As a nutrient, the dosage and usage are according to the initial assimilable nitrogen of the must, its gravity, turbidity and the yeast strain chosen by winemaker.

As a protective agent, the using stage is in grape juice during grape pressing or before wine aging. Using after wine fermentation prolongs wine shelf life.

Characteristic

Product characteristics

	FN401 GH	GH-3
Appearance	powder	
Colour	light yellow to brown	
Protein	≥ 40%	≥ 45%
Reduced glutathione	≥ 4%	2.5-3.0%
Humidity	<7.0%	

Microbial characteristics

Yeast	< 10 ² CFU/g
Coliforms	< 10 ² CFU/g
Lactic acid bacteria	< 10 ³ CFU/g
Moulds	< 10 ³ CFU/g
Aerobic plate count	< 10 ⁴ CFU/g
Salmonella	Absence/25 g
Escherichia coli	Absence/1 g
Staphylococci	Absence/1 g

Heavy metal characteristics

Lead	< 2 mg/kg
Mercury	< 1 mg/kg
Arsenic	< 3 mg/kg
Cadmium	< 1 mg/kg

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 24 months at the recommended storage conditions.

Package: 5 kg*2/box, 20 kg/bag.





Yeast Nutrient FN502-GH

Description

Yeast nutrient FN502-GH is an organic yeast derivative and naturally rich in glutathione, free amino acids, minerals and trace elements that protects grape must and wine from oxidation, promotes cellular multiplication and optimizes wines' organoleptic qualities. Glutathione (GSH) is a tripeptide of L-glutamate, L-cysteine and glycine. It is a common component of yeast with a protective effect against wine oxidation. Yeast nutrient FN 502-GH also provides a plenty of free amino acids that are natural source of nitrogen and aroma precursors.

Applications

- Exert a protective effect on desirable aromas of wine.
- Prevent the oxidation of phenolic compounds in wine.
- Limit the formation of browning pigments.
- Prolong the white and rose wines shelf life.
- Reduce the doses of sulfur dioxide (SO₂).
- Provide nutrients for yeast growth and multiplication.
- Increase yeasts resistance to difficult conditions.
- Supply amino acids as precursors of aromatic compounds.

Dosage and Usage

Recommended dosage: 0.2-0.4 g/L or 20-40 g/hL.

Dissolve the product in 10 times its weight of must or warm water, and suspend it well with no lumps and then directly add it to the tank to mix through pump-over.

Using stage: it is recommended before fermentation in grape juice, at the beginning of fermentation, at the fermentation of 1/3 or after wine fermentation during aging.

As a nutrient, the dosage and usage are according to the initial assimilable nitrogen of the must, its gravity, turbidity and the yeast strain chosen by winemaker.

As a protective agent, the using stage is in grape juice during grape pressing or before wine aging. Using after wine fermentation prolongs wine shelf life.

Characteristic

Product characteristics

Appearance	powder
Colour	light yellow to brown
Protein	≥ 50.0%
Reduced glutathione	≥ 7.0%
Amino nitrogen	≥ 2.0%
Humidity	≤ 7.0%

Microbial characteristics

Yeast	< 10 ² CFU/g
Lactic bacteria	< 10 ³ CFU/g
Moulds	< 10 ³ CFU/g
Aerobic plate count	< 10 ⁴ CFU/g
Coliforms	< 10 ² CFU/g
<i>Salmonella</i>	Absence/25 g
<i>Escherichia coli</i>	Absence/1 g
<i>Staphylococci</i>	Absence/1 g

Heavy metal characteristics

Lead	< 2 mg/kg
Mercury	< 1 mg/kg
Arsenic	< 3 mg/kg
Cadmium	< 1 mg/kg

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 24 months at the recommended storage conditions.

Package: 5 kg*2/box, 20 kg/bag.

Mannoprotein MP60

Description

Yeast mannoproteins are natural yeast polysaccharids existed in yeast cell wall and are extracted by modern biological enzymatical technology. The enological positive functions of mannoprotein contain reduction of bitterness and astringency, promotion of red wine sensorial properties, inhibition of tartrate salt crystallization, prevention of protein haze, and stabilization of red wine color. It can use to improve color, tartaric and protein stability, enhance flavor profiles, increase the roundness and mouthful of wine.

Applications

- High purity to make more outstanding contribution.
- Total dissolvable, easy to filter and no membrane plugging.
- Quick release of mannoprotein to wine.
- Improve the sensory characteristics of wine.
- Reduce the astringent taste of wine.
- Make the taste rich and soft.
- Keep wine color stable and durable.
- Improve the stability of tartaric acid and protein.

Dosage and Usage

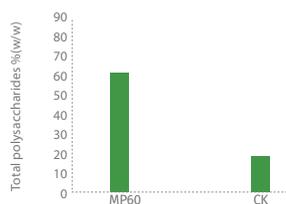
Dosage: 0.1-0.3 g/L or 10-30 g/hL.

Dissolve the product in 10 times its weight of must or warm water, and suspend it well with no lumps and then directly add it to the tank to mix through pump-over.

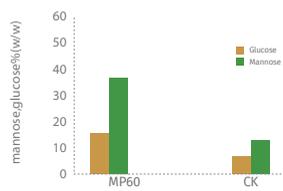
Using stage: it is recommended at the end of the fermentation, during MLF, during wine aging before bottling.

Experimental Results

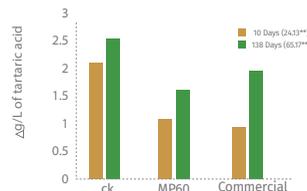
MP60 is characterised by a high content of polysaccharide, at the same time, showed a higher percentage of mannose and glucose. Mannoprotein are used in oenology to stabilise proteins and tartaric acid in wine. MP60 was able to have a significant positive impact on the wine stability in terms of tartaric, protein and colour stability.



Total polysaccharides content expressed as a percent (w/w) of dry powder of the MP60 and commercial mannoprotein.



Glucose and mannose content expressed as a percent (w/w) of dry powder of the MP60 and commercial mannoprotein.



Differences of tartaric acid content (ΔH_2T), evaluated before and after cold treatment. ck: Trebbiano wine without mannoproteins addition.

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 24 months at the recommended storage conditions.

Package: 5 kg*2/box, 20 kg/bag.

Characteristic

Product characteristics

Appearance	powder
Colour	yellow to brown
Total polysaccharide	$\geq 60\%$
Mannoprotein	$\geq 40\%$
Total nitrogen	3.0-7.5%
Humidity	$< 15\%$
Ash	$\leq 8\%$
Solubility	soluble in water

Microbial characteristics

Yeast	$< 10^2$ CFU/g
Lactic bacteria	$< 10^4$ CFU/g
Moulds	< 50 CFU/g
Aerobic plate count	$< 10^4$ CFU/g
Coliforms	< 10 CFU/g
Salmonella	Absence/25 g
Escherichia coli	Absence/1 g
Staphylococci	Absence/1 g

Heavy metal characteristics

Lead	< 5 mg/kg
Mercury	< 0.15 mg/kg
Arsenic	< 1 mg/kg
Cadmium	< 0.5 mg/kg

MANNOPROTEINS



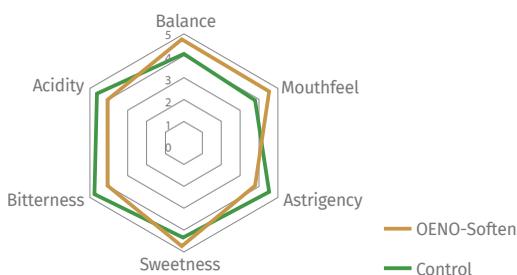
OENO-Soften

Description

OENO-Soften, a specific yeast derivative, is rich in mannoproteins and low-molecular-mass peptides, which improves mouthfeel, balances acidity and bitterness of wine and influences the organoleptic characteristics. OENO-Soften is produced by a special autolysis and enzymolysis process of yeast. Mannoproteins, amino acids, and peptides can affect wine body, soften the aggressive tannins, stabilize foam in sparkling wines, as well as increase tartaric and colloidal stability.

Applications

- Suitable for red wines, sparkling, highly recommended for strong body wine.
- Contributes to stabilization of tartrates and colloids in wine.
- Improves mouthfeel and roundness of wines. Soften the astringency of rough tannins.
- Balance the acidity and bitterness of wine.



Sensory profile of Merlot wine with 0.15 g/L CU200

Dosage and Usage

Dosage: 0.1-0.25 g/L or 10-25 g/hL.

Dissolve the product in 10 times its weight of wine or warm water, and suspend it well with no lumps and then directly add it to the tank to mix up.

Using stage: it is recommended at the end of the fermentation, during MLF, during wine aging before bottling.

Characteristic

Product characteristics

Appearance	powder
Colour	beige
Total polysaccharide	≥30%
Total nitrogen	≥ 6.0%
Humidity	≤ 7.0%
Solubility	Soluble in water

Microbial characteristics

Yeast	< 10 ² CFU/g
Lactic bacteria	< 10 ⁴ CFU/g
Mould	< 50 CFU/g
<i>Salmonella</i>	Absence/25 g
<i>Escherichia col</i>	Absence/1 g
<i>Staphylococci</i>	Absence/1 g
Coliforms	< 10 CFU/g

Heavy metal characteristics

Lead	< 5.0 mg/kg
Mercury	< 0.15 mg/kg
Arsenic	< 1.0 mg/kg
Cadmium	< 0.5 mg/kg

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 24 months at the recommended storage conditions.

Package: 5 kg*2/box.



StabFresh

NEW PRODUCT

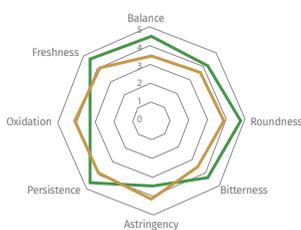
Description

StabFresh is a new selected specific mannoprotein preparation with high antioxidant polypeptides from for protection against oxidation and stabilisation of tartaric and colloidal in wines. StabFresh is designed for fresh and fruity white, rose and red wines.

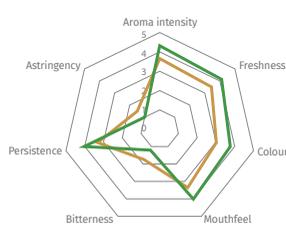
The mannoprotein in StabFresh has an excellent ability to modify and stabilize the wines colloidal balance, to preserves and ensures the tartaric stabilisation capacity, and antioxidant polypeptides in StabFresh, naturally coming from yeast, protects wines against oxidation.

Applications

- Suitable for white, rose and red wines, highly recommended for white and rose wine.
- Comes form yeast, and naturally present in wine.
- Contributes to stabilisation of tartrates and colloids in wine.
- Protects wines against oxidation during transport, storage and aging, promote fruity aroma and freshness of wine.
- Improves the organoleptical quality of wines, such as structure, mouthfeel and roundness.



Sensory profile of Pinot Noir wine with 0.15 g/L StabFresh



Sensory profile of Chardonnay wine with 0.20 g/L StabFresh

Dosage and Usage

Dosage: 0.1-0.3 g/L or 10-30 g/hL.

Dissolve the product in 10 times its weight of must or warm water, and suspend it well with no lumps and then directly add it to the tank to mix through pump-over.

Using stage: it is recommended at the end of the fermentation, during MLF, during wine aging before bottling.

Characteristic

Product characteristics

Appearance	powder
Colour	light beige
Total polysaccharide	≥ 50%
Mannoprotein	45-60%
Antioxidant polypeptides	1-3%
Total nitrogen	2.0-6.5%
Humidity	≤ 7.0%
Solubility	Soluble in water

Microbial characteristics

Yeast	< 10 ² CFU/g
Lactic bacteria	< 10 ⁴ CFU/g
Mould	< 50 CFU/g
<i>Salmonella</i>	Absence/25 g
<i>Escherichia col</i>	Absence/1 g
<i>Staphylococci</i>	Absence/1 g
Coliforms	< 10 CFU/g

Heavy metal characteristics

Lead	< 5.0 mg/kg
Mercury	< 0.15 mg/kg
Arsenic	< 1.0 mg/kg
Cadmium	< 0.5 mg/kg

Storage and Package

Store in a cool, dry and odorless place. Use up as soon as possible once open.

Shelf life is 24 months at the recommended storage conditions.

Package: 5 kg*2/box.

FUNCTIONAL MANNOPROTEINS



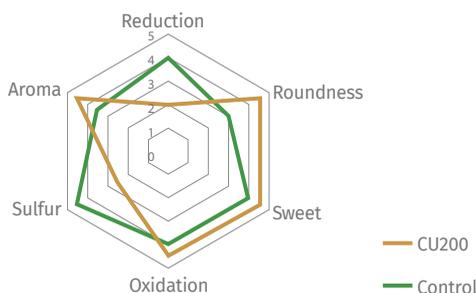
AromPro CU200

Description

CU200 is an inactivated yeast product to reduce the damage of sulfur off flavor compounds, such as H₂S and dimethyl sulfide. H₂S, a colorless chemical compound with the unpleasant odor of rotten eggs is produced by wine yeast during the process of wine making. It is highly reactive and can combine with other wine components to form related volatile sulfur compounds in wine. Those volatile sulfur compounds are not easily removed from wine. CU200 has an ability to combine the off-flavor sulfur compounds that mask wine aroma. CU200 can make wine fruitier and fresher with round mouthfeel due to the polysaccharides and peptides from the inactive yeast.

Applications

- Suitable for white wine, rose wine and red wine, highly recommended for varieties with high probability of producing hydrogen sulfide.
- Release polysaccharides, peptides, proteins, cellular contents to wine enhance the wine sensory.
- Reduce sulphur compound off-flavours.
- Clean the wine aroma.
- Improves mouthfeel and roundness of wines.



Sensory profile of Merlot wine with 0.15 g/L CU200

Instructions for Use

- Recommended dosage: 0.05-0.25 g/L, depending on the wine condition of off-flavor sulfur compounds.
- Before addition, it is recommended to do a test to determine the best dosage. Dissolve CU200 in 10 times its weight water or wine, mix up without dumps, then directly add it to the tank to mix well. After 3-5 days, filter off the lees with bentonite.
- Using stage: after fermentation for absorbing unpleasant sulfur compounds.

Characteristic

Product characteristics

Appearance	powder
Colour	light yellow to brown
Protein	≥ 35%
Copper	≥ 200 ppm
Humidity	≤ 7.0%

Microbial characteristics

Yeast	< 10 ² CFU/g
Coliforms	< 10 ² CFU/g
Lactic bacteria	< 10 ³ CFU/g
Mould	< 10 ³ CFU/g
Aerobic plate count	< 10 ⁴ CFU/g
<i>Salmonella</i>	Absence/25 g
<i>Escherichia coli</i>	Absence/1 g
<i>Staphylococci</i>	Absence/1 g

Heavy metal characteristics

Lead	< 2 mg/kg
Mercury	< 1 mg/kg
Arsenic	< 3 mg/kg
Cadmium	< 1 mg/kg

Storage and Package

Store in a cool, dry, odour-free place. Use up as soon as possible once open.
Shelf life: 2 years.
Package: 1 kg/bag, 1 kg*10/box.



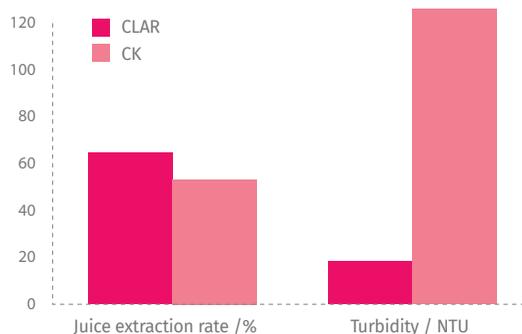
Angel winemaking enzyme CLAR

Angel winemaking enzyme CLAR has a variety of enzyme activities. Through a balanced combination, it has excellent clarification, which can effectively improve the juice yield of grape berries, reduce the turbidity of grape juice, and is suitable for all white grape varieties.

Description and Application

- Angel winemaking enzyme CLAR was obtained by fermentation, extraction and refining of *Aspergillus niger*, and the appearance was powdery microparticles.
- It contains highly active pectinase, which can effectively decompose pectin and cellulose in grape skin tissue, releasing more flavor substances.
- Improves free-run juice or wine yield.
- Angel winemaking enzyme CLAR also has excellent clarification effect, which can improve the filtration of juice and wine.

Experimental Results



Angel winemaking enzyme CLAR can effectively improve juice yield, reduce turbidity.

Protocol for Use

- Angel winemaking enzyme CLAR is added to the grapes in the crusher or grape juice in fermentation tank.
- Angel winemaking enzyme CLAR is not sensitive to normal SO₂ addition, but it should avoid direct contact with SO₂ solution, so as not to affect its enzyme activity.
- Bentonite will have a negative impact on Angel winemaking enzyme CLAR, so it is necessary to avoid the simultaneous use of Angel winemaking enzyme CLAR and bentonite.
- **Dosage:** 2.0 to 3.0 g/100 kg of grapes.
- **Addition method:** Dissolve with water or grape juice 10 times the weight of Angel winemaking enzyme CLAR and add to the must.

Packaging and Storage

- 500 kg*20/box.
- Stock in a cool and dry place. Use up as soon as possible once open.
- Shelf life is 36 months at the recommended storage conditions.



NEW PRODUCT

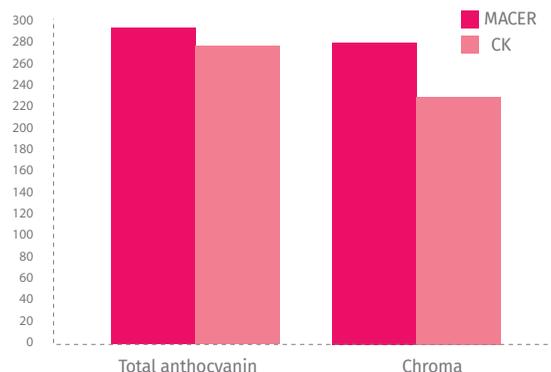
Angel winemaking enzyme MACER

Angel winemaking enzyme MACER has a variety of enzyme activities. Through a balanced combination, it has excellent maceration ability, which can effectively improve the free-run wine yield, better extract phenols and flavor substances from grape skin tissues, and is suitable for all red grape varieties.

Description and Application

- Angel winemaking enzyme MACER was obtained by fermentation, extraction and refining of *Aspergillus niger*, and the appearance was powdery microparticles.
- It contains highly active pectinase and is balanced with cellulase and other enzyme activities, which can effectively decompose pectin and cellulose in grape skin tissue, thereby releasing more phenols and flavor substances and improving the color, aroma and taste of wine.
- Improves free-run wine yield.

Experimental Results



Angel winemaking enzyme MACER can effectively increase total anthocyanin content and chroma.

Protocol for Use

- Angel winemaking enzyme MACER is added on the grapes in the crusher.
- Angel winemaking enzyme MACER is not sensitive to normal SO₂ addition, but it should avoid direct contact with SO₂ solution, so as not to affect its enzyme activity.
- Bentonite will have a negative impact on Angel winemaking enzyme MACER, so it is necessary to avoid the simultaneous use of Angel winemaking enzyme MACER and bentonite.
- **Dosage:** 2.0 to 3.0 g/100 kg of grapes.
- **Addition method:** Dissolve with water or grape juice 10 times the weight of Angel winemaking enzyme MACER and add to the must.

Packaging and Storage

- 500 kg*20/box.
- Stock in a cool and dry place. Use up as soon as possible once open.
- Shelf life is 36 months at the recommended storage conditions.

WINEMAKING ENZYME





ANGEL YEAST CO., LTD.

Add:168 Chengdong Avenue, Yichang, Hubei, P.R.China
Tel: +86-717-6369 520 Fax: +86-717-6370 680
E-mail: niangzao@angelyeast.com <https://www.angelyeast.com>

