



IMPROVEMENT THROUGH BIOTECHNOLOGY

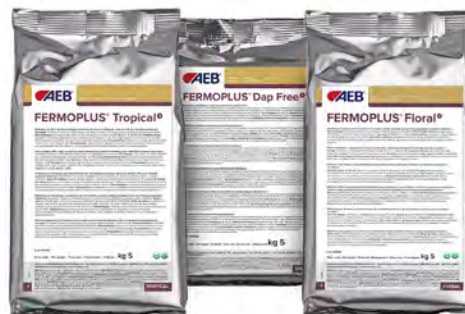
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Yeast Nutrients

Yeast Nutrients & Bio-regulators

Nutrient Additions:

In grape musts the nutrients available for yeasts have a major impact on the kinetics and aromas of fermentations. Nitrogen (N) is a particularly significant nutrient, because its availability determines the fermentation rate and to a large extent, the fermentation duration. The higher the starting sugar concentration the higher the nitrogen level will need to be to complete the fermentation. In fact, the initial nitrogen level should be evaluated. If a deficiency is identified nitrogen supplements can be used to increase the level of nitrogen, with inorganic N (diammonium phosphate DAP) or organic N (amino acids).



Also, juice deficiencies of micronutrients may impact fermentation. Vitamins and minerals are important catalysts and, if not available, critical biological activities may not be able to occur. *Saccharomyces* only requires vitamin biotin, but the presence of other micronutrients, such as vitamins B (thiamine, inositol, pantothenic acid), potassium, sterols and unsaturated fatty acids, stimulates both growth and ethanol tolerance.

AEB provides multiple tools to specifically target nutrition requirements with the proper supplementation for:

- **Fast start and vigorous fermentation**
- **High cell vitality and viability**
- **High ethanol tolerance**
- **De-novo biosynthesis of aromas**
- **Release of varietal aromas**

CHARACTERISTICS	YEAST (AND BACTERIA) NUTRIENTS	PPM OF YAN ADDED FOR 120 PPM ADDITION (1 LB/1,000 GALLONS)
ADDS A COMPONENT FOR TOXINS ADSORPTION PLUS FACILITATES NUCLEATION AND DISPERSION OF THE YEAST CELLS	CELLOFERM	0
DAP AND Vit. B1	ENOVIT P	25
ADDS A COMPONENT FOR TOXINS ADSORPTION PLUS FACILITATES NUCLEATION AND DISPERSION OF THE YEAST CELLS. ALSO PROVIDES HIGH YAN	FERMOCEL P	11
HIGH INCREASE OF YAN PAIRED WITH THE BENEFITS OF AN AMINO ACID ADDITION	FERMOPLUS BLANC VARIETAL	13
ADDS TO THE AMINO ACIDS CONTENT. GEARED TO A GENERIC BOOST OF AROMATICS AND TO PROMOTE A HEALTHY FERMENTATION	FERMOPLUS DAP FREE	8-10
ADDED DURING HYDRATION TO BOOST THE BIOMASS FROM 3 TO 6 FOLDS	FERMOPLUS ENERGY GLU 3.0	N/A
ADDS TO THE CISTEIN AND AMINO ACIDS CONTENTS. GEARED TO A BOOST OF FLORAL AROMATICS AND TO PROMOTE A HEALTHY FERMENTATION	FERMOPLUS FLORAL	8-10
HIGH INCREASE OF YAN PAIRED WITH THE BENEFITS OF AN AMINO ACID ADDITION	FERMOPLUS INTEGRATEUR	18
TO GIVE A BOOST OF NUTRITION TO LACTIC BACTERIA IN CO-INOCULATION OR ADDED TO HIGH ALCOHOL WINES WHERE NUTRIENTS HAVE BEEN DEPLETED BY THE YEAST.	FERMOPLUS MALOLACTIQUE	N/A
HIGH INCREASE OF YAN PAIRED WITH THE BENEFITS OF AN AMINO ACID ADDITION	FERMOPLUS PREMIER CRU	14
RICH IN AMMINOACID FOR YEAST GROWTH IT ALSO ADDS AND ADSORBING COMPONENT THAT PHYSICALLY REMOVES PYRAZYNES	 FERMOPLUS Pyr-Off	5-8
ADDS TO THE AMINO ACIDS CONTENTS. GEARED TO A BOOST OF TROPICAL AROMATICS AND TO PROMOTE A HEALTHY FERMENTATION	FERMOPLUS TROPICAL	8-10

How much YAN?

The YAN needed for a yeast to complete the fermentation is strictly related to the strain characteristics (mentioned in the introductory yeast chart) and the must Brix. YAN stands for Yeast Available Nitrogen. It is a measure of the amount of Nitrogen available to the yeast in the grape juice. It is composed by two fractions: Ammonia (NH_4 present in must and added with DAP) and free alpha-amino Nitrogen or FAN (from the amino-acidic fraction of must or nutrients). To target YAN and add nutrients properly winemakers need to know yeast characteristics and Brix. Brix measurement refers to the concentration of sugars in the must. The traditional method for measure Brix is by using the hydrometer, which will measure the density (specific gravity) of the grape juice in Brix. 1 Brix equals 10 g/L of sugars.

TO CALCULATE TOTAL PPM OF YAN REQUIRED:

Total YAN to target for very low/ low YAN requiring strains = **Brix x 7.5**

Total YAN to target for medium YAN requiring strains = **Brix x 9**

Total YAN to target for high YAN requiring strains = **Brix x 12.5**

- Fermentations prolonged using low temperatures (<12 C) will need about 20% extra YAN.
- YAN addition will be equal to the target YAN minus the available YAN
- The quantity of YAN added for AEB nutrients is available in the chart at the beginning of this chapter.
- To improve nutrient efficiency, divide the additions in two, one at the beginning and one at 1/3 of the fermentation.

Yeast derived nutrients (not containing DAP):

The combination of yeast derived nutrients, provides nitrogenous compounds in the form of amino acids (10%) and ammonia (0.8%), carbon, sulfur, trace nutrients, vitamin B complex and other important growth factors, such as unsaturated fatty acids and sterols, which are essential for the growth of healthy yeast. Their best time of addition is between start and 1/3 of fermentation to maximize yeast health, biomass and aromatic production. These nutrients contain a large amount of amino acids, the building blocks for higher alcohol and acetate esters. Their addition results in a predictable increased production of these aromatic compounds, alongside supporting vigorous fermentation.



Fermoplus DAP Free: natural nutrient derived from yeast lysis containing amino-acids, B vitamins and yeast hulls. Add at the beginning of the fermentation and halfway through. Later additions are still effective but with less impact. High alcohol and high DAP concentration will diminish assimilation of the amino acids contained in this product, so use it separately from DAP additions.

Usage: Dissolve in must or wine and add to the tank. It is preferred to add Fermoplus DAP Free in two steps, but it is most important at the beginning of the fermentation.

Dosage: standard addition is 25-40 g/hl (2-3 pounds/1,000 Gallons).

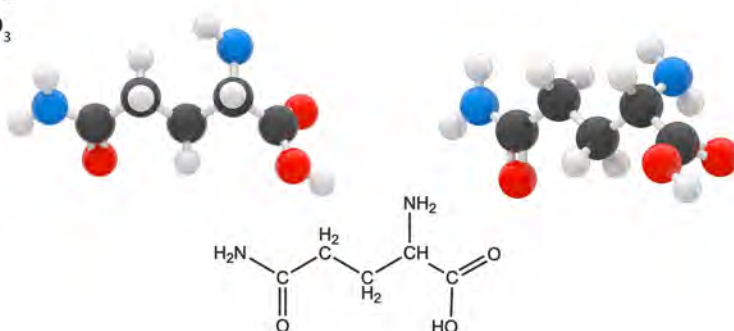
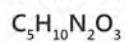
Shelf life and Storage: stable at room temperature for at least two years.

Packaging: 5, 10 and 25 kg bags.

Highlights:

- Rich in glutamine, a preferred nitrogen source, results in the short adaptation (lag phase) as well as a rapid exponential growth rate, large biomass formation and high aromatic expression.

Glutamine





Fermoplus Tropical: natural nutrient derived from yeast lysis containing amino-acids, vitamins and yeast hulls. Fermoplus Tropical is particularly rich in specific amino acids that are essential for the characterization of wines with an aromatic “tropical” profile. This nutrient allows to perceive more clearly these aromas, typical of varieties that naturally possess precursors, while its addition into different varieties facilitates the production of hints related to these notes. Add at the beginning of the fermentation and halfway through. Later additions are still effective but with less impact. High alcohol and high DAP concentration will diminish assimilation of the amino acids contained in this product, so use it separately from DAP additions.



Usage: dissolve in must or wine and add to the tank. It is preferred to add Fermoplus Tropical in two steps, but it is most important at the beginning of the fermentation.

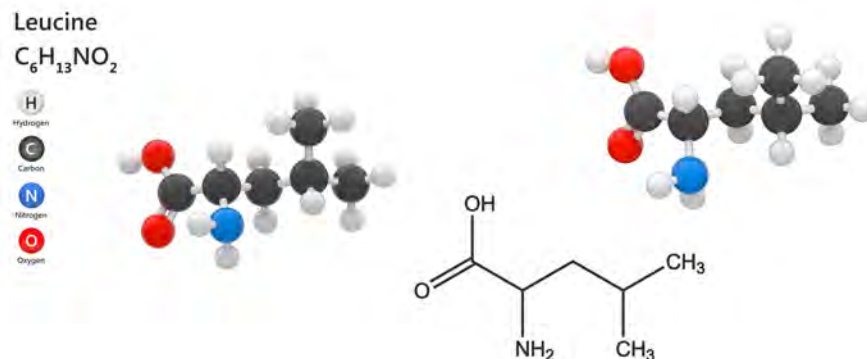
Dosage: standard addition is 25-40 g/hl (2-3 pounds/1,000 Gallons).

Shelf life and Storage: stable at room temperature for at least two years.

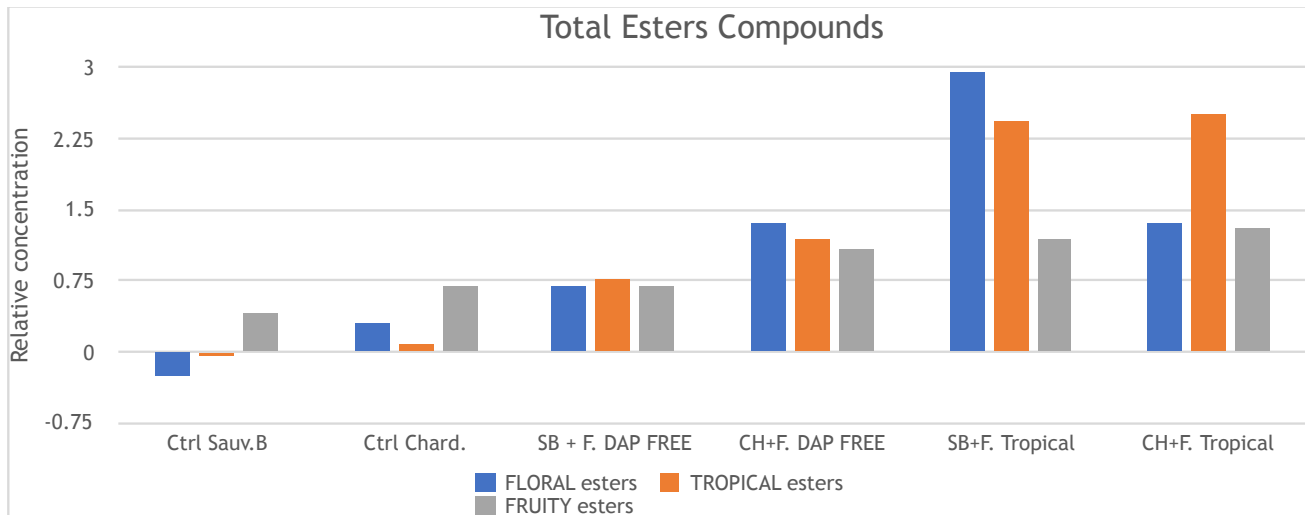
Highlights:

- Rich in Leucine and Isoleucine, low dose (2lbs/1000 gal) of Tropical already increases production of Isoamyl alcohol and Isoamyl acetate (banana), alongside ethyl propionate (apple) and ethyl butanoate (pineapple).
- It has been used very successfully to boost the fruity notes in “earthy” varieties like Shiraz and Nebbiolo.

Packaging: 5kg bags



AROMA	CTRL SAUV.B	CTRL CHARD.	SB + F. DAP FREE	CH+F. DAP FREE	SB+F. TROPICAL	CH+F. TROPICAL
FLORAL ESTERS	-0.24	0.3	0.7	1.35	2.94	1.35
TROPICAL ESTERS	-0.032	0.1	0.78	1.2	2.43	2.5
FRUITY ESTERS	0.41	0.7	0.69	1.1	1.19	1.3



Among the most important factors influencing wine quality is the presence of well-adjusted amounts of higher alcohols and esters. Yeast forms these aromatic compounds during fermentation. Graph shows relative concentration of esters and higher alcohol, grouped by aroma descriptors, of control wine/no addition, 3 lbs./1000 gal addition at the beginning of fermentation of Fermoplus DAP Free or Fermoplus Tropical, in Sauvignon Blanc and Chardonnay musts. Tondini et al. (2019). The Effects of Pre-fermentative Additions on Yeast Volatile Aromas and Thiols in Sauvignon Blanc and Chardonnay. Poster presentation ASEV/AWITC 2019.



Fermoplus Floral: natural nutrient derived from yeast lysis containing amino-acids, vitamins and yeast hulls. Fermoplus Floral was developed by studying the amino acidic composition of floral varieties like Grüner Veltliner. It's indicated for white and rosé fermentations to highlight the aromatic profile. This nutrient allows to perceive more clearly floral aromas, typical of varieties that naturally possess precursors, while its addition into different varieties facilitates the production of hints related to these notes.



Add at the beginning of the fermentation and halfway through. Later additions are still effective but with less impact. High alcohol and high DAP concentration will diminish assimilation of the amino acids contained in this product, so use it separately from DAP additions.

Usage: dissolve in must or wine and add to the tank. It is preferred to add Fermoplus Floral in two steps, but it is most important at the beginning of the fermentation.

Dosage: standard addition is 25-40 g/hl (2-3 pounds/1,000 Gallons).

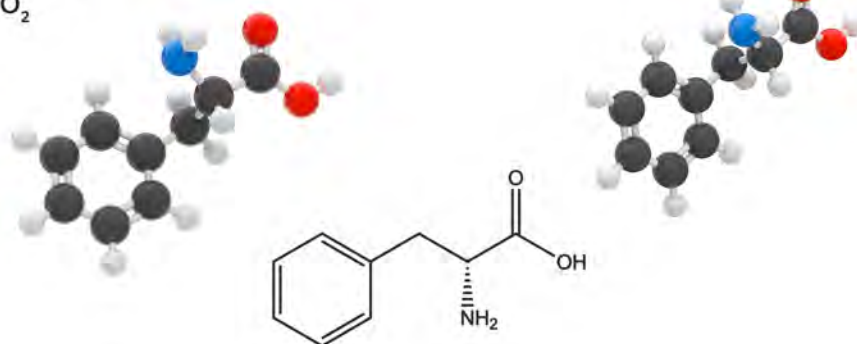
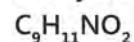
Shelf life and Storage: stable at room temperature for at least two years.

Highlights:

Rich in phenylalanine, low additions (200 ppm or 1.5 lbs/1000 gal) of Fermoplus Floral already increase production of 2-phenyl ethanol (roses, orange blossom) and 2 phenyl-ethyl acetate (honey scent) esters

Packaging: 5kg bags

Phenylalanine



NEW!

Fermoplus PyrOff: Methoxypyrazines (MPs) are compounds with very low sensory thresholds. They give the wine a “herbal” and “green pepper” character, resembling unripe grapes of Cabernet Franc/ Cabernet Sauvignon where it is naturally present in greater quantities.

Fermoplus PyrOff is made by yeast auto lysate and yeast cell wall with high adsorption capacity towards MPs. Its function is



based on the interaction between the lysate and the cell wall. The cell wall is essential for the adsorption and falling out of solution of MPs. Other than this added benefit, Fermoplus PyrOff provides organic nitrogen and therefore contributes to pleasant fermentative aromas increasing aromatic esters compounds.

Highlights:

The use of Fermoplus PyrOff right after pectolytic enzymes have finished their activity, causes the methoxypyrazines released from the skins to be immediately adsorbed and subsequently eliminated.

Available in 5 and 20 kg bags.

Complex nutrients:

Formulations that blend DAP, organic nutrients and thiamine hydrochloride to obtain the balance between high nitrogen addition and micronutrients (free amino acids, yeast hulls, unsaturated fatty acids, sterols, and micronutrients). Balanced nutrition produces stronger and healthier cells, while adding only nitrogen results in less aromas, faster cell death and higher risk of stuck fermentation.

Highlights:

Time of addition: complex nutrient can be used from the start and all the way through the 3/4 of the fermentation.

Why adding thiamine? Although *S. cerevisiae* can synthesize thiamin de novo, lack of exogenous thiamin in the medium leads to slow fermentation and may lead to sluggish or stuck fermentation.

PRODUCT	PERCENTAGE VIT B1	MAX LEVEL OF DOSAGE
FERMOPLUS INTEGRATEUR	0.06%	8.3 LBS/1,000 GALLONS (100G/HL)
FERMOPLUS PREMIER CRU	0.06%	8.3 LBS/1,000 GALLONS (100G/HL)
FERMOPLUS BLANC VARIETAL	0.06%	8.3 LBS/1,000 GALLONS (100G/HL)
FERMOPLUS ENERGY GLU 3.0	0.3%	1.6 LBS/1,000 GALLONS (20G/HL)
FERMOCEL P	0.1%	5 LBS/1,000 GALLONS (60G/HL)
ENOVIT P	0.2%	2.5 LBS/1,000 GALLONS (30G/HL)

Thiamine hydrochloride: According to TTB, Thiamine hydrochloride is used as a yeast nutrient to facilitate fermentation of wine. The amount used shall not exceed 0.005 lb./1000 gals. (0.6 mg/L) of wine or juice. 21 CFR 184.1875 (GRAS). The values in the chart are our suggestions. AEB cannot be accounted responsible for violating TTB rules.



Fermoplus Integrateur: complex nutrient based on DAP and yeast lysate.

It has a

high NH₄ content to quickly increase the YAN. It also has all the benefits of yeast

extract, including a boost in aromatics given by the amino acidic content, vitamins, micro elements and sterols to keep the yeast healthy. It also contains 0.06% thiamine hydrochloride*

Usage: Dissolve in must or wine and add to the tank. It is preferred to add Fermoplus Integrateur in three steps, but it is most important at the beginning of the fermentation.

Dosage: an addition of 120 ppm (12g/hl or 1lb/1000 Gallons) yields about 18 ppm of YAN. We recommend 2 lbs./1,000 gallons divided in 2-3 additions.

Shelf life and storage: stable at room temperature for at least two years.

Highlights:

It helps exploit yeast performance and aroma characteristics in every fermentation, even the most critical.

Packaging: 1kg vacuum-sealed packs, 5 and 20 kg bags.

Fermoplus Blanc Varietal: an upgraded version of Fermoplus Integrateur geared for enhancing the varietal qualities of white wines. It is rich in both amino acidic and mineral N and it also contains specific components like casein, natural antioxidants and amino acids in order to guarantee the development of enhanced aromatics during fermentation. Like all the Fermoplus line it also contains thiamine (0.06%) *.

Usage: Dissolve in must or wine and add to the tank. It is preferred to add Fermoplus Blanc Varietal in three steps, but it is most important at the beginning of the fermentation.

Dosage: an addition of 120 ppm (1lb/1000 Gallons) yields about 13 ppm of YAN. We recommend 2lb/1,000 gallons divided in 2-3 additions.

Packaging: 5 kg bags.

Shelf life and storage: stable at room temperature for at least two years.

Fermoplus Premier Cru: an upgraded version of Fermoplus Integrateur geared for enhancing the varietal qualities of red wines. Rich in ammonia and natural amino acids, like the all Fermoplus line it also contains thiamine, natural mannoproteins, and B vitamins.

Usage: Dissolve in must or wine and add to the tank. It is preferred to add Fermoplus Premier Cru in three steps, but it is most important at the beginning of the fermentation.

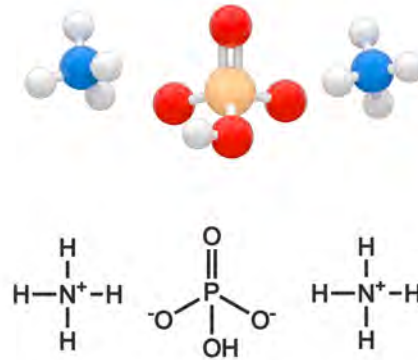
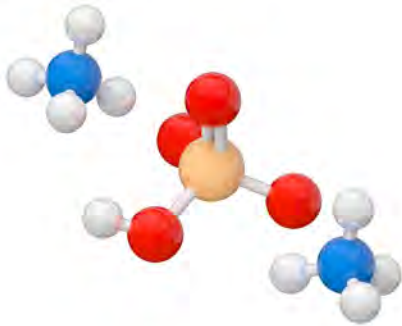
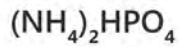
Dosage: an addition of 120 ppm (1lb/1000 Gallons) yields about 14 ppm of YAN. We recommend 2lb/1,000 gallons divided in 2-3 additions.

Packaging: 5 kg bags.

Shelf life and storage: stable at room temperature for at least two years.

Inorganic nutrients:

Diammonium phosphate (DAP)



Blend of DAP & thiamine hydrochloride, pure cellulose or DAP & thiamine hydrochloride & cellulose, to provide nitrogen supply or/and detoxify the must/wine.

Time of addition: inorganic nutrients can be used from the start of fermentation to 8° Brix.

Enovit P: Mainly composed of nitrogen salts of DAP with added Thiamin. It brings a large amount of ammonia (NH₄) for a quick boost of the YAN (yeast available nitrogen). Utilized at 30 g/hl (300 ppm) it brings 60 ppm of YAN (about 20%). The added Thiamine helps to promote a shorter lag-phase and to avoid the formation of ketonic acids that can combine SO₂ and diminish its efficiency. The average YAN yield for a 120 ppm (1lb/1000 Gallons) addition of Enovit P is 24 ppm.

Dosage: standard additions are in the range of 12-36 g/hl (1-3 pounds/1,000 Gallons).

Packaging: 25 kg bags.

Shelf life and storage: Stable at room temperature for at least two years.

Highlights:

Staggered nitrogen additions at the beginning and 1/3 fermentation proven to be useful for faster fermentation.

Fermocel P: nutrient/bio-regulator widely used in Europe in white and rosé wine juice fining is pushed to the extreme and musts need some haze to ferment properly. The cellulose contained in Fermocel P helps with yeast nucleation, adsorption of toxins and long chain fatty acids. Nitrogen salts (DAP) bring a large amount of ammonia nitrogen that immediately raises the YAN level. It creates the perfect environment for fermentation of juices that are extremely clarified, like white musts, fruit wines, ciders or meads. The neutral dispersing agents in the mix provide support for the yeast cells to be homogeneous in the all fermentation vessel. The average YAN yield for a 120 ppm addition (12g/hl or 1lb/1000 Gallons) is about 12 ppm.

It also contains thiamine hydrochloride.

Dosage: standard addition is 12-36 g/hl (1-3 pounds/1,000 Gallons)

Packaging: 25 kg bags.

Shelf life and storage: stable at room temperature for at least two years.

Celloferm: a bio-regulator in powdery form, based on very pure celluloses with long polysaccharide chains. It absorbs the substances inhibiting or slowing down the yeast activity and rapidly activates fermentations.

The addition of Celloferm to the clear must facilitates the yeast in the lag-phase, especially in musts where the sugar concentration is very high, or where environmental conditions are very difficult. It acts on the must by binding to the residues of plant protection products, such as fungicides, acaricides, and copper-based products. The composition of Celloferm enables the interaction with positive metal ions, as the cellulose is negatively charged and binds with positive ions, such as Fe^{+++} and Cu^{++} . Under this aspect, it contributes to reduce the oxidative effects caused by these elements.

Furthermore, the long-chained celluloses carry out an adsorption action towards metabolites yielded by the yeasts during fermentation and fix toxic fatty acids and their ethyl esters, granting a regular and constant run. Celloferm has a high support action during fermentation, as it facilitates the homogeneous dispersion of the yeasts in the mass.

Utilization: make a slurry in 20 parts of must or stuck wine and add to the tank right after having pitched the yeast.

Dosage: 120-240 ppm (12-24 g/hL or 1-2 lb./1,000 gallons).

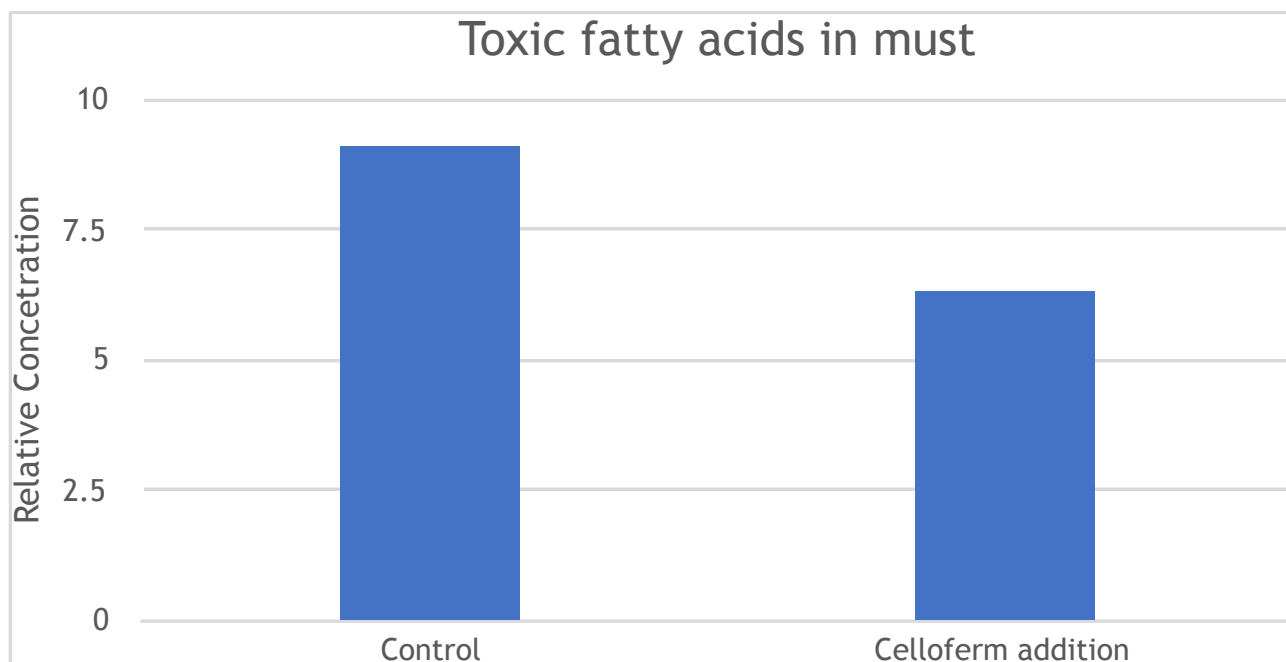
Shelf life and storage: sealed containers will last for 2 years stored at room temperature in a non-humid environment.

Highlights:

To improve fermentation kinetics by adsorbing toxins and long chain fatty acids that inhibit the yeast during fermentation. Also, the cellulose is going to work as a nucleation media: a “boat” for the yeast cells so they can stay well suspended in the fermenting must. This is crucial especially in cold fermentation, when the activity is quite slow and there is little CO₂. In these conditions certain yeast can flocculate, and bacteria take over in the upper part of the tank, causing VA production and sluggish fermentation.

Packaging: 10 kg bags.

	CONTROL	CELLOFERM ADDITION
SHORT CHAIN FATTY ACIDS	9.1	6.3



Inhibiting toxic compounds, such as short and medium chain fatty acids (SMCFA) or pesticides residues (fungicide, herbicide, insecticide) have been widely investigated for their inhibition of alcoholic fermentation. Recent studies also showed that they can negatively impact the production of aromas (namely esters) and the wines fruit character (Noguerol-Pato et al., 2014). Graph shows relative concentration of SMCFA with no addition/control or after addition of 1 lb/1000 gal of cellulose at the end of AF.

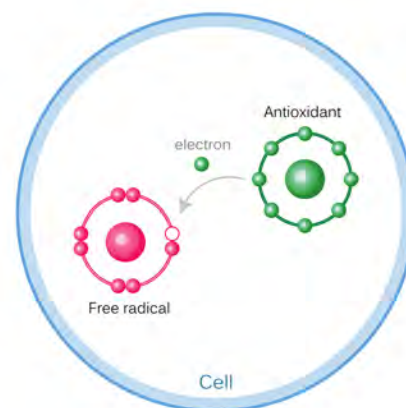
Rehydration nutrient:

Proper yeast rehydration is one of the most important steps to help ensure a strong and healthy fermentation. During rehydration the cell tends to absorb water rapidly. At first water diffusion can damage the intracellular structures, compromising the cell machinery and possibly leading to cell death. A severe rehydration process can result in a total loss of viability. Addition of nutrients in the rehydration phase shows positive effect to counteract the osmotic stress, decreasing the permeability of the cytoplasmic membrane. Nutrients are quickly metabolized inside the cell, stimulating the production of protein to repair the intracellular organelles, ensuring the fermentation starts faster and with an increased number of cells. Initial water temperature between 95-100° F/35-38° C is the optimal target for the rehydration of *Saccharomyces cerevisiae* dry yeast. Ask your AEB specialist about Reactivateur, an automated vessel for the rehydration and acclimation of dry yeast.



Fermoplus Energy Glu 3.0: booster for the yeast biomass, to be added in the rehydration tub. It accelerates multiplication speed improving the biomass. This ultimately facilitates dominance of the selected yeast strain. Ammonia (NH_4^+) and amino-acids, are the predominant nitrogen-containing compounds that are utilized by the *Saccharomyces*. GAP (General Amino Acid Permease) transports several amino acids inside the yeast cell but is inhibited by NH_4^+ .

It is therefore active when the must is depleted of ammonium ions, or before the yeast is inoculated into the must. For this reason, it is important to feed amino acids in the rehydration tub, in absence of NH_4 , using Fermoplus Energy Glu 3.0. The purity of the extract in terms of amino acids it's geared to be immediately and fully absorbed by the yeast cell, resulting in an addition rate much lower than the most re-hydration nutrients available.





Scan the code to learn more about AEB rehydration nutrient and how it can help you to improve your fermentation.

Usage: dissolve directly in the rehydration water along with the yeast.

Dosage: 1:4 compared to yeast inoculum. i.e. 25 grams/hL of yeast will need 6 grams/hL of Fermoplus Energy Glu. 2lb/1000 Gallons of yeast will need 1/2 lb. of Fermoplus Energy Glu.

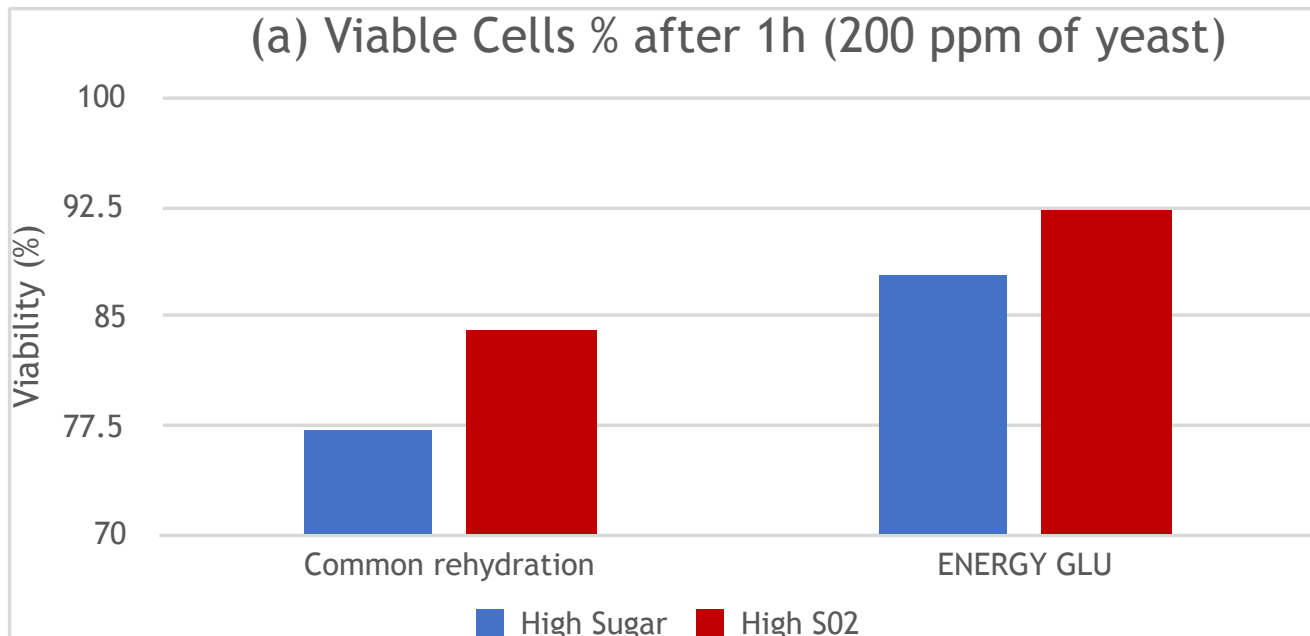
Packaging: 1kg, 5 kg & 20 kg bags.

Shelf life and storage: Fermoplus Energy Glu is stable at room temperature for at least two years.

Highlights:

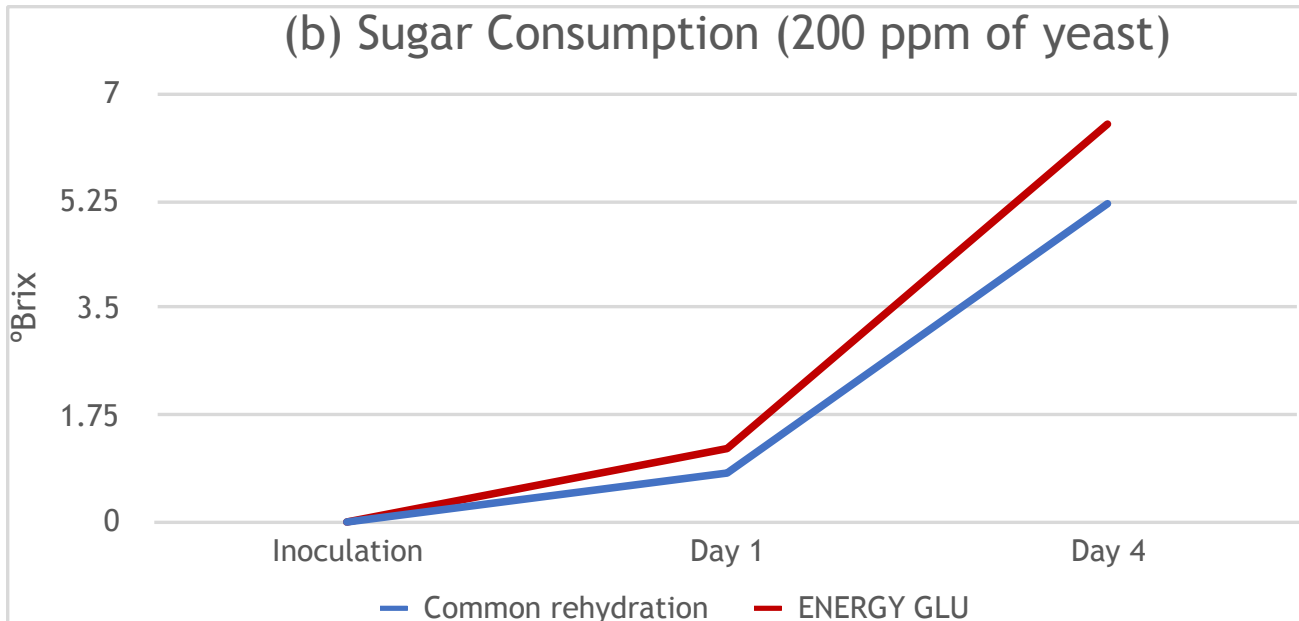
- Why Glutathione during rehydration? Glutathione is a natural antioxidant that the yeast uses to protect its organs from free radicals and to ensure that yeast cells are not damaged by the high oxidative activity existing during rehydration. When cells are dry, they don't have an immediate availability of glutathione and therefore they can benefit from the addition supplied with Fermoplus Energy Glu 3.0.

DAYS	COMMON REHYDRATION	ENERGY GLU
INOCULATION	0	0
DAY 1	0.8	1.2
DAY 4	5.2	6.5



(a.) Cell viability after 1h rehydration procedure, control versus AEB protocol with Energy Glu, in two different musts (inoculated at 200 ppm of dry yeast).

CONDITION	COMMON REHYDRATION	ENERGY GLU
HIGH SUGAR	77.2	87.9
HIGH S02	84.1	92.3

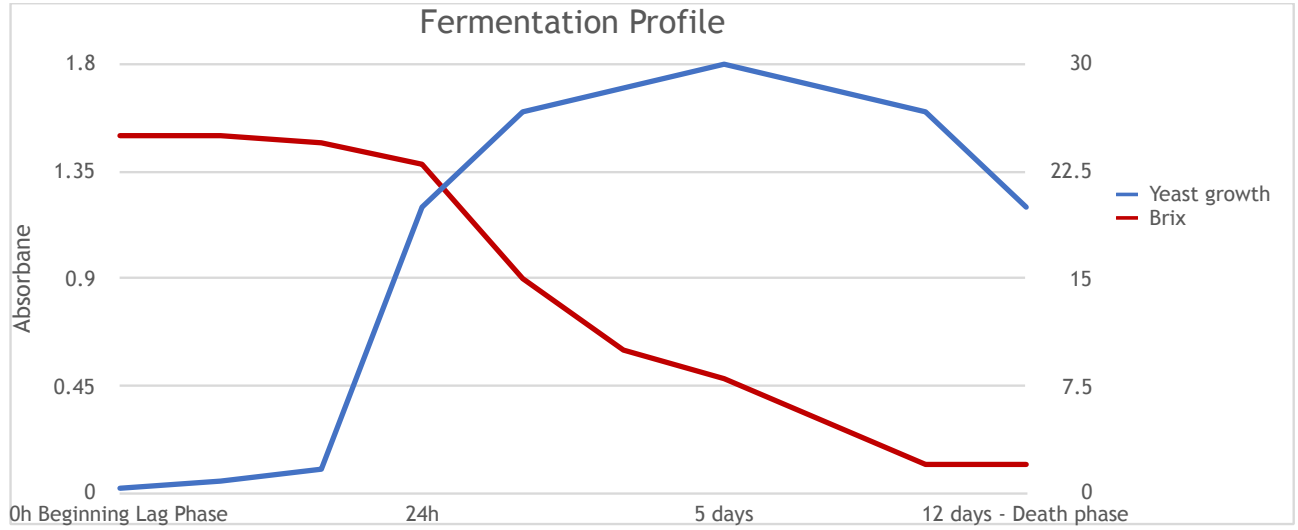


(b.) Cell vitality, measured by sugar consumption, in must (250 g/L sugars, 50 ppm S02, 200 ppm of yeast).

Healthy fermentations have a lower risk of getting stuck

During fermentation, yeast take up and metabolize amino acids and other nutrients to support growth and to produce biomass. In the process, a range of volatile aroma compounds, including esters, higher alcohols, volatile fatty acids, carbonyls and sulfur compounds are produced. The production of many of these aroma impact compounds is directly dependent on the nitrogen sources that are present during fermentation. Latest scientific investigation showed yeast needs more than nitrogen in order to conduct a healthy and a complete fermentation. In particular, the nutrient addition needs to be tailored to the yeast physiological state: lag phase, exponential phase, stationary phase, death phase. The final aim is to promote a vigorous and aromatic fermentation and avoid early death phase which correlates with sluggish and stuck fermentation.

TIME	YEAST GROWTH	BRIX
0H BEGINNING LAG PHASE	0.02	25
6H	0.05	25
12H BEGINNING LOG PHASE	0.1	24.5
24H	1.2	23
36H BEGINNING STATIONARY	1.6	15
48H	1.7	10
5 DAYS	1.8	8
7 DAYS	1.7	5
10 DAYS	1.6	2
12 DAYS - DEATH PHASE	1.2	2



Yeast growth and sugar consumption during fermentation.

1. Lag phase: is a phase during which the yeast become acclimatized to the must and prepare to bud and consume sugars. We recommend Energy Glu 3.0 in rehydration in order to insure yeast performance during this phase.

2. Log/exponential phase: is a time of exponential growth of the yeast culture. Nitrogen, amino acids, nutrients, and sugar are consumed while the cells are reproducing. Many of the significant aromatic and flavor compounds are by-products of this cell growth and are produced at this stage. We recommend 20-30 grams of DAP free nutrients (DAP Free, Tropical, Floral or Pyr-Off), right after inoculation.

3. Stationary phase: is the last stage where the yeast population reaches maximum density and the remaining sugars are consumed. As the available sugar and Nitrogen decreases, the yeast begin to prepare for a period where there is a lack of food.

We recommend targeting your YAN with DAP containing nutrients early on (e.g. Fermoplus Integrateur, Fermocel and Envois P), in one or two staggered additions at 1/4 fermentation and 1/2 of the fermentation.

