

## PRIMARY FERMENTATION

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### YEAST NUTRIENTS

## Fermoplus® Energy Glu

Energy booster based on yeast cell walls rich in glutathione

As it is known, during rehydration yeast cells metabolize oxygen and sugar, produce energy and multiply. In order to increase the starting biomass, cells obligatorily need oxygen; this would cause a strong oxidation if glutathione, naturally present inside the micro-organism, does not intervene. A part of this compound is produced by the cell even during respiration, but glutathione is often not enough to grant the anti-oxidizing action, therefore oxygen attacks the amino acids such as methionine, histidine, tyrosine and tyroxine. Methionine is normally oxidized into methionine sulphonyde, which causes a series of chain reactions causing the formation of a protein with oxidizing characteristics, according to the under mentioned scheme:

The oxidation of these compounds induces an oxidative metabolism in the cells, which is handed down also in daughter cells, with the result to start some oxidative processes charged to the aromatic compounds.

The utilization of Fermoplus® Energy Glu grants that the yeast never remains without glutathione during the first multiplication stages, assuring the best conditions to obtain a fermentation at the highest level. This new nutrition frontier enables yeasts to fully express their characteristics, which are not normally reached because of metabolic alterations.

Fermoplus® Energy Glu, thanks to its particular formulation rich in amino acids and natural vitamins, enables to obtain a yeast displaying since the reactivation a vigour noticeably higher than usual, positively influencing its multiplication speed.

The utilization of Fermoplus® Energy Glu changes the production speed but not the quantity of energy produced: this is obtained by the complete demolition of a glucose molecule through the three different stages of cell respiration (glycolysis, Krebs cycle and chain of electronic transport) and which is ideally 36 molecules of ATP (38 molecules of ATP less two molecules consumed for the transport from the cytoplasm to the mitochondrial array of two molecules of

NADH+ + H+ produced during glycolysis).

Fermoplus® Energy Glu strengthens the yeast during the hydration stage, which is very delicate as it requires a large energetic expenditure: in fact the yeast must bring inside the cell the sugars which will be necessary for its multiplication, and at the same time it must spend energy to synthesize cellular structures.

Fermoplus® Energy Glu, directly supplying readily assimilable amino acids, saves the cell from synthesizing them, thus saving energy that can be turned to its multiplication.

Fermoplus® Energy Glu is the ideal energy booster for fermentations at low temperature, as it accelerates multiplication times and facilitates the prevalence over indigenous strains. The utilization of Fermoplus® Energy Glu is suggested for all rehydrations.

It is indispensable in the following cases:

- Fermentations at low temperatures
- Fermentations in reduction
- Fermentations of not very healthy grapes
- Fermentations of grapes with a high sugar content
- Yeast rehydration for all fermentations (pied de cuve)

#### DOSES OF UTILIZATION

1:4 of the yeast. For example, for the rehydration of 4 kg of yeast, it will be necessary to use 1 kg of Fermoplus® Energy Glu.

#### MODALITIES OF UTILIZATION

Directly dissolve in water together with the yeast.

#### COMPOSITION

Preparations based on yeast cell walls 99,4%, Vitamin B1 0,6%. 10 g/hL bring about 0,6 mg/L of Vitamin B1.

#### PACKAGING

500 g packs in 4 kg cartons. Prod. code 002837