



THE SOLUTION TO STUCK FERMENTATIONS

Description:

Some of the operations made to activate fermentation act on the yeast growth and the fermentation kinetic at its beginning only without acting on the yeast survival or the end of fermentation. The use of **SpringCell™ yeast hulls** helps acting on the yeast viability on a long term thanks to their must **detoxification properties and the supply in survival factors** for the yeast generations formed during the yeast growth phase.

Yeast cell hulls are performing fermentation aids that allow to act efficiently against stuck & sluggish fermentation. **SpringCell™ yeast hulls are the original cell hulls patented by the university of Bordeaux (Lafon-Lafourcade and al, 1984).**

Properties:

- **Adsorption of the compounds that are toxic for yeast:** inhibitive fatty acids, phyto sanitary products' residues, ochratoxin A, thanks to the presence of glucans & mannans that fix these compounds.
- **Richness in survival factors, sterols, unsaturated fatty acids, considered as oxygen substitutes.** These elements allow the protection of successive generations of active yeast from the first generation while maintaining the integrity of their **membrane** while increasing their resistance to ethanol.
- **Cellular multiplication rate increase.** SpringCell™ is the only activator allowing to reach a total consumption of sugars in a must whose fermentation is slow, without producing volatile acidity.
- **Support role in musts.** SpringCell™ is almost 100% insoluble and has a **support effect in highly clarified musts** by increasing their turbidity without the inconvenience of organoleptic deviations that can be caused by lees.
- **E2U™**



- **SpringCell™ has a micro granulated form making its dispersion better and securing its use. It's the reason why the product is certified E2U™.**

Applications:

SpringCell™ is used in prevention when

- **The concentration in reducing sugars is important**
- **The must is highly clarified** (i.e. absence of lees which contain unsaturated fatty acids that are necessary for the reconstitution of the yeast wall)

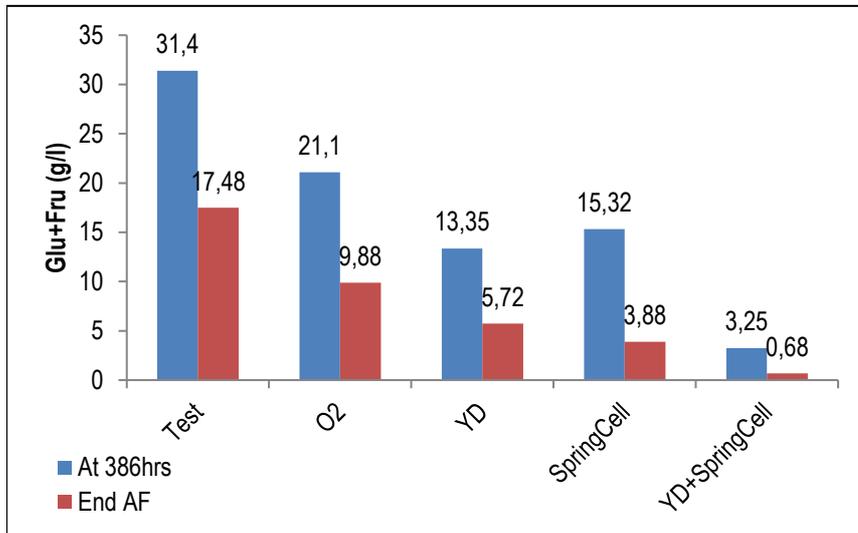
SpringCell™ is used as a **cure** when the fermentation is stuck to **detoxify the must** and for the **repitching of the yeast starter in good conditions.**

In this case the choice of yeast for the repitching of the stuck vessel is particularly important. We highly recommend the use of our strain **SafEno™ BC S103**, the most vigorous of the Fermentis® range.





Trial:



Gros Manseng must 2010, 13.5% v/v, initial YAN: 115ppm

The use of 30g/hl SpringCell™ cell hulls at third fermentation was more efficient than 10mg/l oxygen addition at maximum fermentation speed.

Combined with a yeast derivative (YD - organic nutrient source) that wasn't able to complete the fermentation by itself, it helped finishing it.

Dosage:

As prevention:

Dilute 20 to 30 g/hl in 10 times its volume of wine, add to the must between 35 and 45% of the sugars consumed and homogenize using a pumping-over. In red wine making, SpringCell™ addition should be done underneath the cap. In case of musts with a high settlement it is recommended to add SpringCell™ after the settling down, just before yeast inoculation.

As a cure, for stuck or sluggish fermentations:

Dilute 30 to 40 g/hl in 10 times its volume of wine then incorporate directly in the racked wine sulfited at a dose of 2 to 3 g/hl. Consult our restarting protocol.

Warning: Yeast hulls are subjected to usage limit of 40g/hl according to the European legislation and 3lbs/1000gal according to US (TTB) legislation.

Composition: in g%g of product (indicative values)

Dry matter:	> 94%	Lipids	18-22%
Total nitrogen:	12-18%	Mineral matters	3-5%
Total Polysaccharides:	55-59%		

Packaging:

Carton of 20 vacuum-packed sachets of 500g each (Full box net weight: 10 kg)

Carton of 1 vacuum-packed box of 10 Kg (Full box net weight: 10 kg)

25 kg sealed paper bags with polyethylene liner (only available in the US)

Guarantee:

SpringCell™'s richness in lipids makes it sensitive to oxidation. Fermentis® guarantees the products organoleptic properties by vacuum packing the product. Fermentis® guarantees an optimum storage of this product during 3 years in its original packaging at a temperature of maximum 20°C and in a dry place.

Fermentis® guarantees the product complies with the International Oenological Codex until its Best Before End Date in the storage conditions mentioned above. All our products are also fully authorized per TTB 27 CFR 24.246 prior to and during fermentation. Dosage limits may apply. Please contact your product specialist for more information.

Fermentis® fermentation aids and functional products are exclusively produced from natural yeast products. The Know-how of the Lesaffre group guarantees end users, high performing products as required by modern oenological applications.

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THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION



SpringCell™



FERMENTATION
AIDS

THE SOLUTION TO STUCK FERMENTATIONS

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- **Cellular multiplication rate increase.** SpringCell™ is the only activator allowing to reach a total consumption of sugars in a must whose fermentation is slow, without producing volatile acidity.
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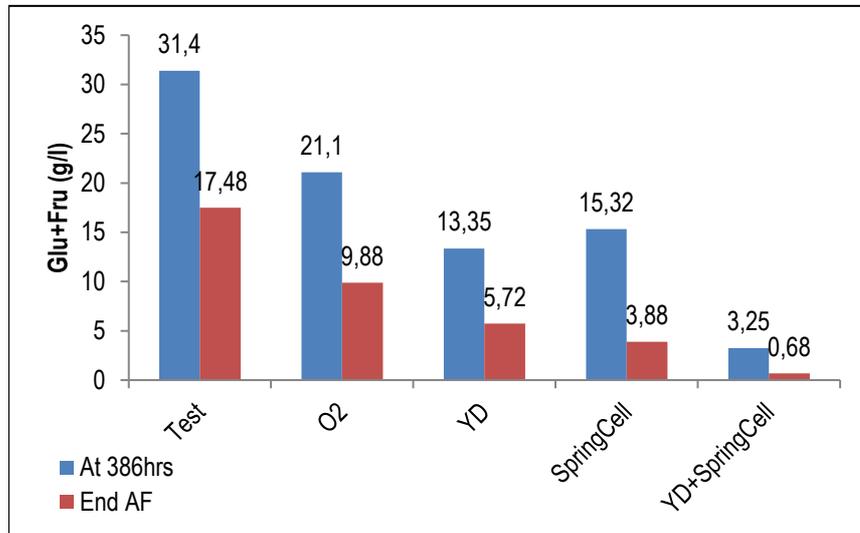
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Guarantee:

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SpringCell™ BIO



THE ORGANIC SOLUTION TO SLUGGISH AND STUCK FERMENTATIONS



SpringCell™ BIO yeast hulls are **certified organic** by ECOCERT FR-BIO-01 according to European regulations **EU 834/2007** and **889/2008**.

Yeast hulls were the first yeast derivatives authorized in organic winemaking.

Description:

Some of the operations made to activate fermentation act on the yeast growth and the fermentation kinetic at its beginning only without acting on the yeast survival or the end of fermentation. The use of **SpringCell™ BIO yeast hulls** helps acting on the yeast viability on a long term thanks to their must **detoxification properties and the supply in survival factors** for the yeast generations formed during the yeast growth phase.

Yeast cell walls are performing fermentation aids that allow acting efficiently against stuck & sluggish fermentation.

SpringCell™ BIO yeast hulls are issued from *Saccharomyces cerevisiae* yeasts specifically grown on organic certified substrate and processed accordingly to keep an organic certification.

Properties:

- **Adsorption of the compounds that are toxic for yeast:** inhibitive fatty acids, phyto sanitary products' residues, ochratoxin A, thanks to the presence of glucans & mannans that fix these compounds.
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- **The concentration in reducing sugars is important**
- **The must is highly clarified** (i.e. absence of lees which contain unsaturated fatty acids that are necessary for the reconstitution of the yeast wall)
- **There is a will to preserve wine essence by limiting additions of nutrients, especially inorganic.**

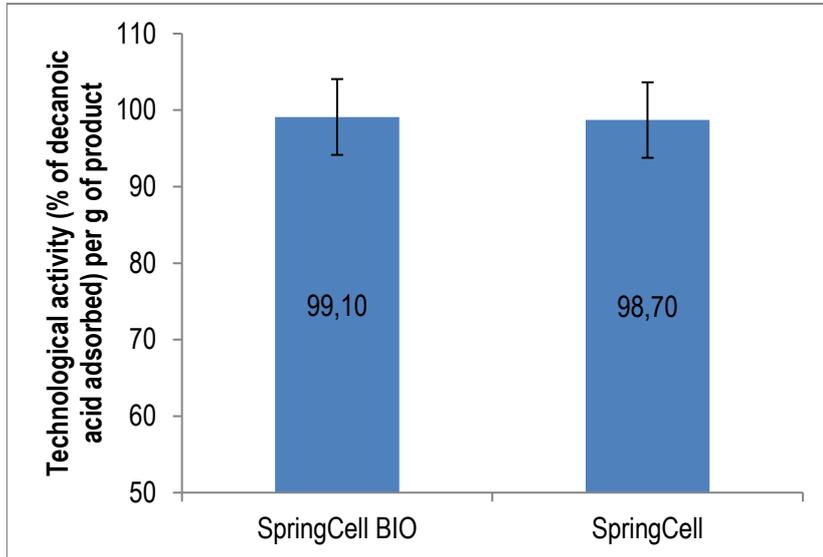
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THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION



Activity:



Decanoic acid adsorption test (RESOLUTION OIV-OENO 497-2013)

SpringCell™ BIO yeast hulls have totally similar adsorption capacities than conventional SpringCell™ towards the greatest yeast growth inhibitor, i.e. the decanoic acid. This ensures their quality as efficient fermentation aids.

In addition, SpringCell™ BIO doesn't show significant differences compared to SpringCell™ in terms of organoleptic impact.

Dosage:

As prevention:

Dilute 20 to 30 g/hl in 10 times its volume of wine, add to the must between 35 and 45% of the sugars consumed and homogenize using a pumping-over. In red wine making, SpringCell™ BIO addition should be done underneath the cap. In case of musts with a high settlement it is recommended to add SpringCell™ BIO after the settling down, just before yeast inoculation.

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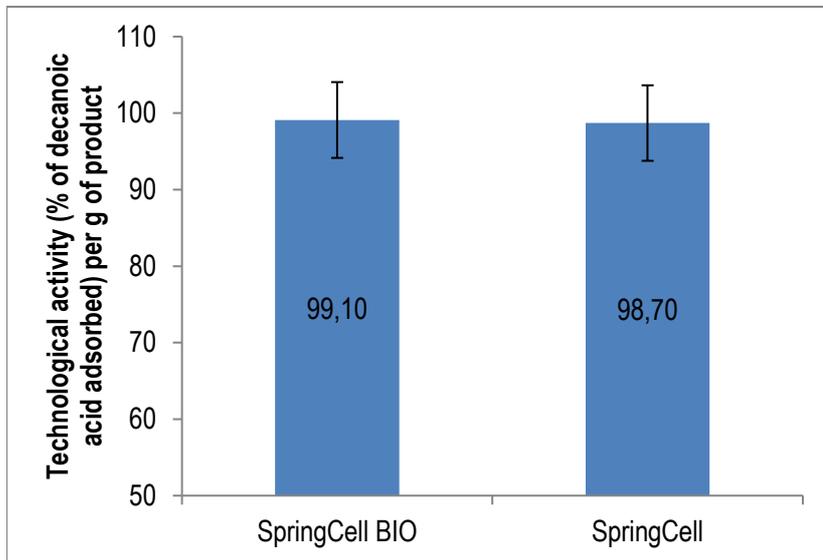
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SpringFerm™ Complete



FERMENTATION
AIDS

THE HEALTH PACKAGE FOR YOUR YEAST

Description:

SpringFerm™ Complete is a complex fermentation nutrient based on the complementary actions of both organic nutrients & mineral nitrogen. Its formula was specifically designed for North American winemakers' needs by allowing sequential additions during fermentation. Regular and complete nutrition is thus supplied to the yeast to prevent stuck or sluggish fermentations.

Properties:

COMPLEMENTARY AVAILABLE NITROGEN SOURCES

- Thanks to its richness in ammonium and free amino acids, **SpringFerm™ Complete** gives both direct and progressive power to the yeast which will be used at different stages of the fermentation. **SpringFerm™ Complete** supplies 21 ppm of available nitrogen for a product dosage of 2 lbs/1,000 gallons.
- **SpringFerm™ Complete** decreases organoleptic deviation risks (volatile acidity, H₂S) and helps the production of higher alcohols and their esters.

SURVIVAL & GROWTH FACTORS SUPPLY

- **SpringFerm™ Complete** is rich in fatty acids & sterols which are necessary for yeast viability especially at the end of the fermentation. This supply secures the integrity of the cell wall helping the yeast to face alcohol pressure.
- **SpringFerm™ Complete** helps improving yeast metabolism and accelerating sugar fermentation by supplying extra thiamine into the must (0.19 mg/l of thiamine hydrochloride for 2 lbs/1,000 gallons dosage).

SUPPORT & DETOXIFYING ROLE

- Rich in yeast hulls, **SpringFerm™ Complete** enables must detoxification from main growth and fermentation inhibitors. It also brings insoluble elements playing a support role on highly clarified musts and favoring yeast fermentation activity.

Applications:

SpringFerm™ Complete is suitable for all musts showing serious deficiencies in several categories of nutrients which can be of natural or manmade origin like nitrogen deficient vineyards, overripe grapes, very clarified musts, musts undergoing a stuck fermentation to be restarted...

SpringFerm™ Complete is recommended for multiple additions during the initial and middle phases of the alcoholic fermentation by bringing progressively to the yeast all the elements that are essential to its growth and metabolism.



THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION



Dosage:

SpringFerm™ Complete can be incorporated from yeast inoculation till the middle of the fermentation by supply of 1 to 2 lbs/1,000 gallons each time.

Warning: **SpringFerm™ Complete** must not be legally used over 6 lbs/1,000 gallons due to its content in thiamine according to TTB regulation. It also contains diammonium phosphate (DAP) and yeast hulls subjected as well to usage legal limits that must be taken into account for potential extra additions.

When using **SpringFerm™ Complete** at medium dosage (i.e. 3 lbs/1,000 gallons), usual dosages of DAP (3 lbs/1,000 gallons) and yeast hulls (1.5 lbs/1,000 gallons) can be complemented. For all other usage, contact your product specialist.

Composition:

Yeast hulls, yeast autolyzates, Diammonium phosphate, Thiamine hydrochloride.

Packaging:

25 Kg (55 lbs) paper kraft bags

Guarantee:

SpringFerm™ Complete contains yeast hulls and is thus subjected to possible organoleptic deviations due to oxidation.

Fermentis® guarantees an optimum storage of this product during 3 years in its original packaging at a temperature of maximum 20°C and in a dry place.

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SpringFerm™

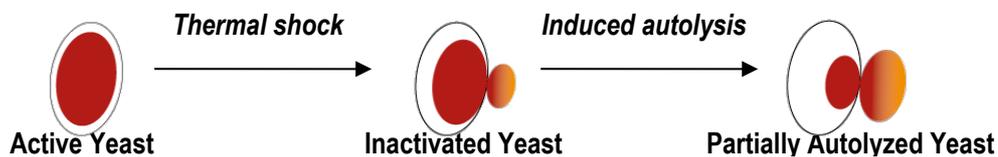


FERMENTATION
AIDS

MULTI-PURPOSE FERMENTATION BOOSTER

Description: « yeast... for yeasts! »

SpringFerm™ is a fermentation activator based on partially autolyzed yeasts, around 2 times richer in available nitrogen than basic inactivated yeast. Directly issued from yeast, it brings amino acids, sterols, minerals & vitamins. Absence of these compounds can be harmful for a complete fermentation.



Properties:

MASTERING OF ORGANIC NITROGEN LEVEL

- SpringFerm™ is an activator 100% of natural origin and as such, represents an amino nitrogen source that allows the wine maker to master the balance between organic and mineral nitrogen in the must. Its richness in both nucleotides & essential amino acids (Glutamic acid, Asparagine, Leucine, Lysine, Serine), is crucial for the synthesis of proteins.

SYNERGETIC EFFECT BETWEEN MINERAL AND ORGANIC NITROGEN

- Organic nitrogen improving the ammonium assimilation, with a SpringFerm™ supply in addition to a mineral nitrogen source (diammonium phosphate DAP), yeast nutrition is optimized.

VITAMINS SUPPLY

- SpringFerm™ naturally contains up to 600 mg/kg of Thiamine. A sufficient dose to cover the yeasts' needs and avoid the production of high levels of SO₂ and acetic acid. Additionally, SpringFerm™ is rich in folic acid, calcium pantothenate and niacin.

SUPPORT EFFECT

- The insoluble part of SpringFerm™ plays a supporting role in case of too much clarified musts. Turbidity increases without facing organoleptic deviations caused by heavy lees.

RICHNESS IN SURVIVAL FACTORS (ERGOSTEROLS)

- SpringFerm™ contains 20% yeast cell walls that are rich in lipids and notably ergosterols, which are considered as oxygen substitutes in strict anaerobic conditions. They are necessary to ensure the resistance to ethanol of the membrane and its permeability to carbohydrates.

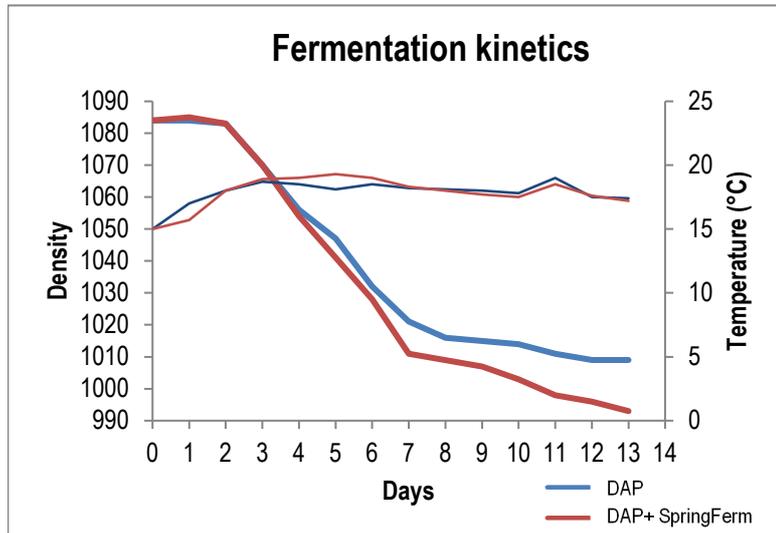


THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION



Trial:

Carignan must 2012, 12.8% v/v, initial YAN: 102ppm, free/total SO₂: 36/70ppm



At yeast inoculation: DAP 24g/hl (blue) or DAP 24g/hl + SpringFerm 20g/hl (red)
At 1,055: DAP 24g/hl (blue) or DAP 24g/hl + SpringFerm 20g/hl (red)

SpringFerm™ supply in comparison to "DAP only" allowed securing the fermentation in difficult conditions.

Dosage:

It is recommended to calculate the **optimum amount of nitrogen** to be added during the fermentation depending on the **yeast chosen and the quantity of available nitrogen in the must**.

In order to have a complete nutrition, it is recommended to **supply SpringFerm™ (usual dosage of 20g/hl) in combination or not with DAP at third-mid fermentation if the must is initially slightly deficient in YAN**.

In case of highly clarified must, the addition of SpringFerm™ should be done at yeast inoculation and renewed at third-mid fermentation

**20g/hl of SpringFerm™ for an equivalent supply
of 10 ppm of Yeast Available Nitrogen**

Composition: in g%g of product (indicative values)

Dry matter	> 94%	Vitamins (in ppm)	
Total nitrogen	9-10%	Thiamine	400-600
Total Polysaccharides	17-21%	Calcium pantothenate	50-170
Lipids	6-8%	Niacin	200-300
Mineral Matter	5-9%	Folic acid	20-40

Packaging:

Carton of 10 sachets of 1Kg each (Full box net weight: 10 kg)

10 kg sealed paper bags with polyethylene liner

25 kg sealed paper bags with polyethylene liner

Guarantee:

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THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION



SpringFerm™ Equilibre



FERMENTATION
AIDS

THE HEALTH PACKAGE FOR YOUR YEAST

Description:

SpringFerm™ Equilibre is a complex fermentation activator based on the synergies of organic & mineral nitrogen. Its formula was specifically studied to optimize its effects on yeast growth & yeast survival, making it a nutritional defence of choice against stuck or sluggish fermentations.

Properties:

IMPROVED ASSIMILATION OF NITROGEN COMPOUNDS

- With its diammonium phosphate (DAP) content making it rich in mineral nitrogen and its amino acid content that makes it rich in organic nitrogen, the special formula of SpringFerm™ Equilibre improves the assimilation of mineral nitrogen compared to using DAP on its own. SpringFerm™ Equilibre supplies 17mg/L of assimilable mineral nitrogen for a product dosage of 20g/hl.
- SpringFerm™ Equilibre decreases organoleptic deviation risks (volatile acidity, H₂S) and helps the production of secondary alcohols and their esters.

SURVIVAL FACTORS SUPPLY

- SpringFerm™ Equilibre is rich in fatty acids & sterols which are necessary for yeast survival. One dose of 20g/hl supplies up to 13 mg/L of lipidic substance for the reconstitution of the cell membrane. This supply secures the integrity of the cell wall during the most stressful fermentations: high alcohol degree, rarity of nutrients during the fermentation process....
- SpringFerm™ Equilibre naturally contains 0.6 mg/L of Thiamine for a supply of 20g/hl, being sufficient to increase by 20% the viable population and accelerate the fermentation of sugars.

SUPPORT & DETOXIFYING ROLE

- Rich in Springcell yeast cells hulls, SpringFerm™ Equilibre enables must detoxification and plays a support role on highly clarified musts.

Applications:

SpringFerm™ Equilibre is perfectly convenient to achieve a complete fermentation of all musts that are difficult to vinify: musts with a strong alcohol potential, highly clarified musts, during sluggish fermentations or at restart of fermentation.

SpringFerm™ Equilibre is very easy to use, and recommended for wineries that do not want to fraction their nutrient supply: a single supply brings all the elements that are essential to the yeast's metabolism.



THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION



Dosage:

SpringFerm™ Equilibre is usually incorporated at yeast inoculation to play its nutrient role at a dosage of 15 to 20 g/hl.

Warning: **SpringFerm™ Equilibre** must not be legally used over 20g/hl due to its high content in thiamine. It also contains diammonium phosphate and yeast hulls subjected as well to usage legal limits that must be taken into account for potential extra supplies.

Diammonium phosphate can be added (10-30g/hl) simultaneously to SpringFerm™ Equilibre in case of nitrogen deficient must (<180mg/l).

In case of difficult fermentation, diammonium phosphate and/or yeast hulls, within 10-20g/hl, can also be added between third and mid-fermentation (density 1,050-1,040). For all other usage, contact Fermentis.

Think of checking the legal limits applicable in your country while taking into account your own product usage conditions.

Composition:

SpringCell yeast cell hulls, Partial yeast autolyzates, Diammonium phosphate, Thiamine hydrochloride.

Packaging:

Carton of 20 vacuum-packed sachets of 500g each (Full box net weight: 10 kg)

25 kg sealed paper bags with polyethylene liner

Guarantee:

SpringFerm™ Equilibre contains Springcell yeast cell walls and is thus vacuum packed to avoid possible organoleptic deviations due to oxidation.

Fermentis® guarantees an optimum storage of this product during 3 years in its original packaging at a temperature of maximum 20°C and in a dry place.

Fermentis® guarantees the product complies with the International Oenological Codex until its Best Before End Date in the storage conditions mentioned above. All our products are also fully authorized per TTB 27 CFR 24.246 prior to and during fermentation.

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SpringFerm™ Xtrem

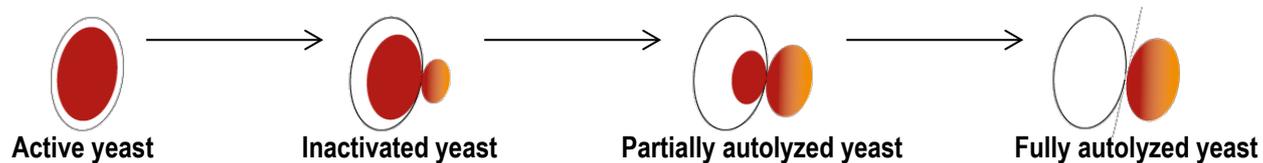


FERMENTATION
AIDS

POWERFUL FERMENTATION ACTIVATOR FOR DIFFICULT CONDITIONS

Description: « yeast... for yeasts! »

SpringFerm™ Xtrem is a fermentation activator 100% based on fully autolyzed yeasts, 4 times richer in available nitrogen than a basic inactivated yeast. It is adapted to musts coming from over ripe grapes that are often very poor in nitrogen (<150 mg/L) and rich in fermentable sugars (potential alcohol > 13.5%) which represents a favourable environment for stuck or sluggish fermentations.



Properties:

IMPROVED ASSIMILATION OF NITROGEN COMPOUNDS

- Richer in amino acids than SpringFerm™, SpringFerm™ Xtrem was specifically formulated to allow yeasts and lactic bacteria to face stressful conditions and avoid the most frequent causes of stuck or sluggish fermentations.

SUPPLY OF AVAILABLE ORGANIC NITROGEN TO BOOST FERMENTATION KINETICS

- SpringFerm™ Xtrem contains the micro peptides and amino acids that are the best assimilated to supply the yeast with the necessary nitrogen for the synthesis of its own proteins. Added between third and mid fermentation this pool of concentrated peptides & amino acids is totally bio available as soon as it is added, allowing the yeast immediate assimilation. When added before malolactic fermentation its micro peptide pool is particularly interesting for the growth and the performance of lactic bacteria.

VITAMIN SUPPLY

- SpringFerm™ Xtrem contains growth factors of interest for stressful fermentations (Thiamine, Calcium Pantothenate, Folic acid, Niacin).

ORGANOLEPTIC IMPROVEMENT

- The supply of amino acids is essential during the fermentation for the development of aromas. Indeed, higher alcohols from which esters derive are formed by the deamination of amino acids. Supplying SpringFerm™ Xtrem in the second part of fermentation brings finesse and aromatic intensity compared to wines treated only with ammonium sources.
- The organoleptic profile is improved even more when SpringFerm™ Xtrem is combined with SpringFerm™ at the beginning of fermentation.

E2U™



- SpringFerm™ Xtrem has a micro granulated form making its dispersion better and securing its use. It's the reason why the product is certified E2U™.

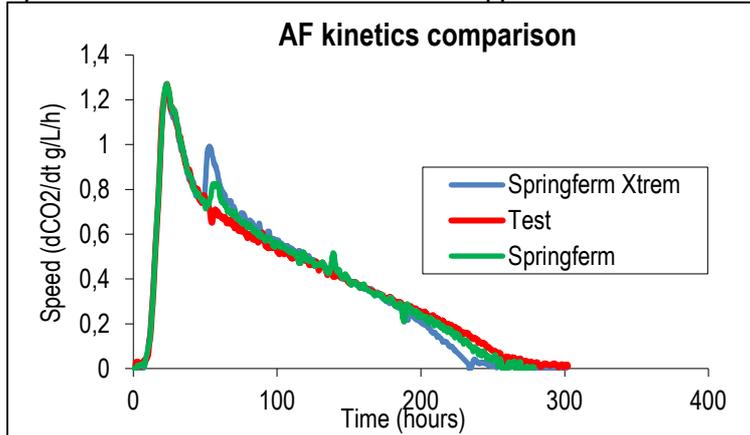


THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION



Trial:

Synthetic must, 15% v/v, initial YAN: 170ppm, SafEno™ STG S101



SpringFerm™ Xtrem has a strong effect at third-mid fermentation to help accelerating and/or finishing fermentation compared to less autolyzed yeast as SpringFerm™.

Dosage:

In difficult wine making conditions, it is recommended to use 20 to 40g/hl of SpringFerm™ Xtrem between the third and mid-fermentation because of its very strong nutritional potential.

- Must with a high potential degree of alcohol, or very rich in polyphenols, etc...,
- In case of musts very poor in nitrogen,
- To restart a stuck fermentation,

As a malolactic fermentation (MLF) activator: 10 to 20g/hl before inoculating lactic bacteria depending on the alcohol content.

20g/hl of SpringFerm™ Xtrem for an equivalent supply of
20 ppm of Yeast Available Nitrogen

Composition: in g%g of product (indicative values)

Dry matter	> 94%	Vitamins (in ppm)	
Total nitrogen	9.2-10.9%	<i>Thiamine</i>	130-257
Total Polysaccharides	13.3-19.3%	<i>Calcium pantothenate</i>	157-331
Lipids	1.2-2.4%	<i>Niacin</i>	480-805
Mineral Matter	9.2-13.6%	<i>Folic acid</i>	16-54

Packaging:

Carton of 10 sachets of 1Kg each (Full box net weight: 10 kg)

10 kg sealed paper bags with polyethylene liner

20 kg sealed paper bags with polyethylene liner

Guarantee:

Fermentis® guarantees an optimum storage of this product during 3 years in its original packaging at a temperature of maximum 20°C and in a dry place.

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THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION

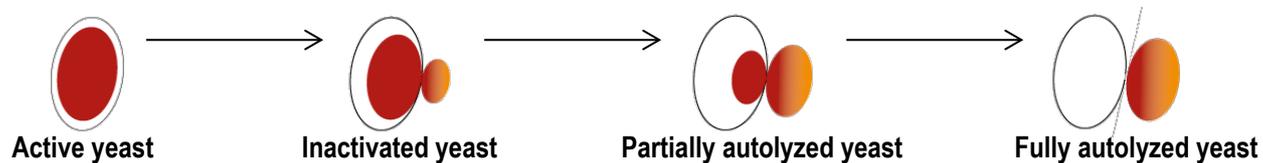


SpringFerm™ Xtrem

POWERFUL FERMENTATION ACTIVATOR FOR DIFFICULT CONDITIONS

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Properties:

IMPROVED ASSIMILATION OF NITROGEN COMPOUNDS

- Richer in amino acids than SpringFerm™, SpringFerm™ Xtrem was specifically formulated to allow yeasts and lactic bacteria to face stressful conditions and avoid the most frequent causes of stuck or sluggish fermentations.

SUPPLY OF AVAILABLE ORGANIC NITROGEN TO BOOST FERMENTATION KINETICS

- SpringFerm™ Xtrem contains the micro peptides and amino acids that are the best assimilated to supply the yeast with the necessary nitrogen for the synthesis of its own proteins. Added between third and mid fermentation this pool of concentrated peptides & amino acids is totally bio available as soon as it is added, allowing the yeast immediate assimilation. When added before malolactic fermentation its micro peptide pool is particularly interesting for the growth and the performance of lactic bacteria.

VITAMIN SUPPLY

- SpringFerm™ Xtrem contains growth factors of interest for stressful fermentations (Thiamine, Calcium Pantothenate, Folic acid, Niacin).

ORGANOLEPTIC IMPROVEMENT

- The supply of amino acids is essential during the fermentation for the development of aromas. Indeed, higher alcohols from which esters derive are formed by the deamination of amino acids. Supplying SpringFerm™ Xtrem in the second part of fermentation brings finesse and aromatic intensity compared to wines treated only with ammonium sources.
- The organoleptic profile is improved even more when SpringFerm™ Xtrem is combined with SpringFerm™ at the beginning of fermentation.

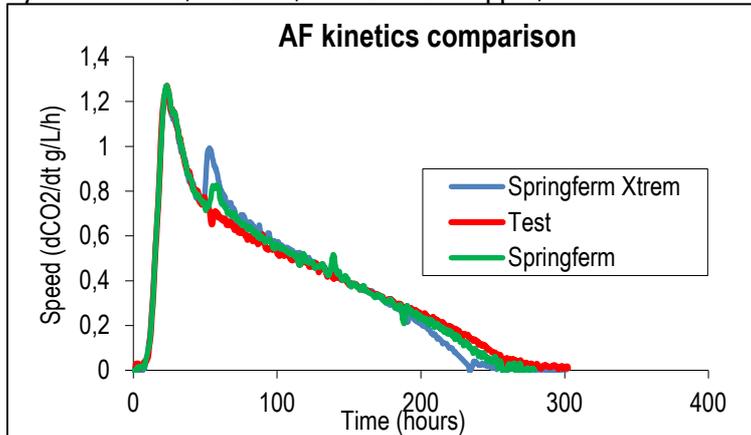




FERMENTATION
AIDS

Trial:

Synthetic must, 15% v/v, initial YAN: 170ppm, SafEno™ STG S101



SpringFer™ Xtrem has a strong effect at third-mid fermentation to help accelerating and/or finishing fermentation compared to less autolyzed yeast as SpringFer™.

Dosage:

In difficult wine making conditions, it is recommended to use 20 to 40g/hl of SpringFer™ Xtrem between the third and mid-fermentation because of its very strong nutritional potential.

- Must with a high potential degree of alcohol, or very rich in polyphenols, etc...,
- In case of musts very poor in nitrogen,
- To restart a stuck fermentation,

As a malolactic fermentation (MLF) activator: 10 to 20g/hl before inoculating lactic bacteria depending on the alcohol content.

**20g/hl of SpringFer™ Xtrem for an equivalent supply of
20 ppm of Yeast Available Nitrogen**

Composition: in g%g of product (indicative values)

Dry matter	> 94%	Vitamins (in ppm)	
Total nitrogen	9.2-10.9%	<i>Thiamine</i>	130-257
Total Polysaccharides	13.3-19.3%	<i>Calcium pantothenate</i>	157-331
Lipids	1.2-2.4%	<i>Niacin</i>	480-805
Mineral Matter	9.2-13.6%	<i>Folic acid</i>	16-54

Packaging:

Carton of 10 sachets of 1Kg each (Full box net weight: 10 kg)

10 kg sealed paper bags with polyethylene liner

20 kg sealed paper bags with polyethylene liner

Guarantee:

Fermentis® guarantees an optimum storage of this product during 3 years in its original packaging at a temperature of maximum 20°C and in a dry place.

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THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION



ViniLiquid™

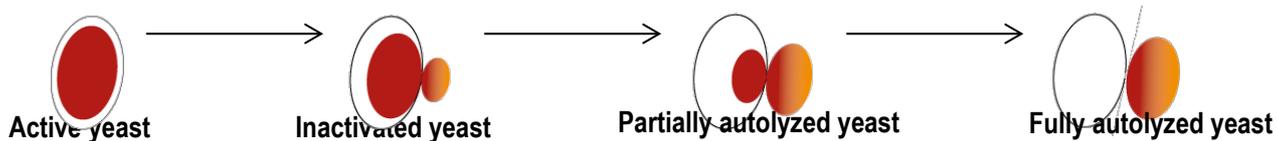


FERMENTATION
AIDS

INNOVATIVE LIQUID FERMENTATION AID COMBINING EFFICIENCY, EASE AND SECURITY

Description:

ViniLiquid™ is an efficient fermentation activator manufactured in order to benefit from the **optimized synergy between both soluble and insoluble parts of highly degraded autolyzed yeasts**. Its **innovating liquid form makes winemakers' work easier**. It is particularly adapted for wineries facing **operational time reduction issues** and/or **difficult fermentable musts** i.e. with low available nitrogen, poor vitamins composition, survival factors deficiency, etc... and rich in fermentable sugars (high potential alcohol).



Properties:

FERMENTATIVE EFFICIENCY

Fermentis' works showed that both soluble and insoluble parts of a fully autolyzed yeast are respectively of great interest regarding fermentation activation.

- The soluble part containing a concentrated pool of free amino acids has a much stronger fermentative power than sole ammonium source helping winemakers reaching faster and more complete fermentations.
- The insoluble part (i.e. yeast hulls) has an important kinetic impact alone and improves the fermentative efficiency of the initial nitrogen supplement.

Based on these results, ViniLiquid™ has been developed to combine these synergetic effects.

Thanks to its liquid form, the direct effect of ViniLiquid™ on the yeasts creates a spectacular fermentation speed increase when added between 1/3 and 1/2 fermentation. Its supply leads to an important cellular regrowth and viability maintenance allowing a fast and clean fermentation achievement, especially in combination with an initial oxygen supply.

When added before malolactic fermentation its micro peptide pool is particularly interesting for the growth and the performance of lactic bacteria.

E2U™



- **Direct use** in the must without prior dissolution,
- **Total dispersibility into the must** without any homogenization problems,
- **Pumpable and homogenous**, ready to inject manually or via **automatized systems**.

SECURITY

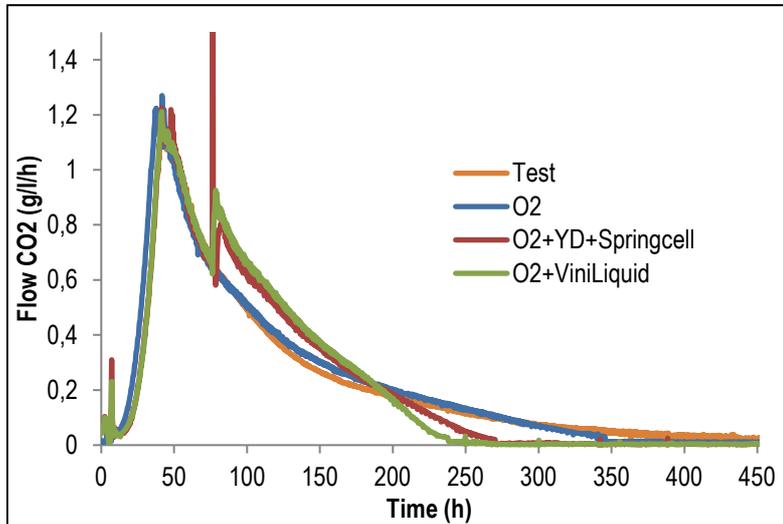
ViniLiquid™ liquid form eliminates the risk of inhalation related to highly dusty products.



THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION

Trial:

Chardonnay must 2011, 12.7% v/v, initial YAN: 188ppm



FERMENTATION
AIDS

The use of ViniLiquid™ in comparison with the totally equivalent dry recombined product (Yeast derivative YD + SpringCell™ yeast hulls) showed better performances in terms of fermentation completion due to a direct assimilation of the nutrients allowed by its liquid form.

Dosage:

Due to its strong fermentation power, Fermentis® recommends using:

**50 ml/hl of ViniLiquid™ for an equivalent supply of
20 mg/l of Yeast Available Nitrogen**

For a maximum efficiency, use ViniLiquid™ **between third and mid-fermentation** and combine its addition with:

- Oxygen addition 24-48hrs after yeast inoculation,
- DAP and/or Springferm™ addition at yeast inoculation when initial YAN and/or turbidity is not sufficient,
- An extra addition of DAP at the same addition time in case of musts very poor in nitrogen.

To restart a stuck fermentation: 50ml/hl in the yeast starter

As a malolactic fermentation (MLF) activator: 25 to 50ml/hl before MLF depending on the alcohol content.

Composition:

Saccharomyces cerevisiae autolyzed yeasts; D,L Malic acid (E296); Potassium metabisulfite (E224)

Packaging:

6kg and 12kg PEHD jerry can

210kg PEBDL big bag in Easyliquid packaging

Guarantee:

Fermentis® guarantees an optimum storage of this product during 2 years in its original packaging at a temperature of maximum 20°C and in a dry place.

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THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION