

GOOD NEW

BY FERMENTIS: NEWS, ADVICE, PERSPECTIVES.

+

INSIDE,
GET YOUR POSTER

— & —

choose the yeast
you need!

N°05

JANUARY 2019

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SAVE TIME,
GET COMFORT,
ACT GREEN

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WHAT'S GOING ON IN CHINA
AND LATIN AMERICA?



THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION



Fermentis

LESAFFRE FOR BEVERAGES



Create

**Create the wine of your dreams,
work on originality, aroma elegance,
flavor intensity...**

Our yeasts and fermentation
solutions are key companions
to support your creativity
and guarantee your results.

MAKE YOUR CHOICE*

* Find out our solutions on pages 16 to 19



Dear friends,

Climate changes over the past years have been impacting agriculture significantly and more specifically also the winegrape crushes. Numerous vineyards in the world are hit by drought and extreme temperatures ; and eventually also by major fires as a result of those rough conditions. Others, sometimes the same, are suffering severe weather conditions, floods and other hail storms which may damage considerably the vineyards at any time.

Everywhere, the winemakers' job is made difficult by this unpredictability. How to maintain the good quality of the wine when the quantity and the quality of the winegrapes vary significantly from one year to the other ? This is a question you are more and more to ask yourselves. Hence our major investment in research efforts to find resistant yeast strains, develop new hybrids, characterisation products or activators which compensate deficiencies of the grape juices going into fermentation.

*How to continue
to produce
quality wines
despite
climate change?*

Our development policy has consistently been to make products and solutions available to you, supporting your creativity and your desire to satisfy consumers' dreams in terms of aromas, flavors, colors and all other sensory pleasures. This will remain our credo. However, given the environmental challenges faced around the world, our innovation is now meeting a double imperative.

The first being indeed to create a product portfolio allowing you to produce high quality and diversified wines given the climatic constraints. Even though they're only a handful at this stage, some winemakers move their production towards cooler and more temperate zones. We do need to have responses and solutions for all.

But the imperative becoming also to continuously improve our ecological impact for long term sustainability. These are not just words but concrete solutions which today do preserve natural resources, reduce pollution and energy consumption. Those solutions, amongst others, are illustrated by the Easy 2 Use (E2U™) product line, highlight of this *GoodNews* edition.

In the nature, thus also in the vineyards, the current and future challenges are significant and increasingly difficult. It is up to each one of us to contribute as much as we can to protect the environment. As far as we're concerned, we'll continue to do our part, humbly; but be certain, with determination and inventiveness.

Stéphane Meulemans
General manager, Fermentis

LET'S GET CLOSER

Proximity is not just a matter of geographical location: it is primarily about a relationship of trust between you, the customer, and our brand. Everything we do on a day-to-day basis is aiming at making you proud to choose Fermentis: proud because our products are reliable and effective, because you feel our support and enjoy talking to us, and finally because you feel that on both a professional and human level, we get on well. If we've increased communication and are introducing more opportunities for you to meet us, it is with one and the same aim: to get ever closer.

A GREAT NETWORK OF DISTRIBUTORS

There to help you - even in the most remote places

Our distributors are important partners. First of all, they ensure access to our products quickly, wherever you are. Then, thanks to their in-depth knowledge of the respective markets you're in, they help us understand your needs and ensure that we provide the right solutions. In recent years, we have consolidated our network based on common values and expectations. We have also strengthened our sales administration and supply chain team.

"SHARING DAYS" BY FERMENTIS ACADEMY

Moving forward together

Sharing Days are designed to inspire fresh ideas, and for learning how to improve fermentation control. They are also an opportunity to listen, share, exchange. We meet wine producers, brewers, scientists, and journalists. We talk technology, flavour, taste and aroma. We test, taste, and share know-how and experiences with a common desire to take things forward.

To take part in our Sharing Days, simply email us at: fermentisacademy@fermentis.lesaffre.com

CAMPAIGNS AND TOOLS

To help you choose

Our communications are like us: pragmatic. Designed to help you understand who we are and how our products and services work, they are managed as carefully as possible and kept as clear as possible so you find them both useful and pleasant at the same time.



SOME ONE HUNDRED TRADE FAIRS A YEAR

Because direct contacts count so much

In 2013, Fermentis took part in just three international trade fairs. In 2018, we were there to meet you in over one hundred towns, covering all the market segments we support: wine, beer, spirits, and cider. Why did we decide to do this? Because fairs are the place where we get a real idea of your needs and any difficulties you are experiencing. They're also the chance to have a great time with you.



IN-HOUSE COACHING

Making our explanations increasingly 'clear'

Fermentis has many experts, scientists and researchers within its team. While their top-level expertise ensures the highest standards in their everyday work, they can sometimes feel challenged when required to speak at conferences in which we are increasingly invited to participate. To enable our teams to share their knowledge and the results of their research better, additional training in public speaking is being organised.



NEW APPOINTMENTS

More in line with customer needs and more available

This year, we have been joined by Gilles, Marie, David, Alexia, Nan, Vitaly, Hugo, and José to strengthen our teams in the United States, Russia, France, and China. Our brand is gaining ground and conquering new markets. Each new appointment strengthens our collective force and ensures we are close to our customers both in terms of our physical presence and cultural awareness.

MARKET EMERGING TRENDS IN LATIN AMERICA



BY SERGIO ALOISIO

Our Sales Manager in South America
(winemaker for 30 years!)

In Latin America, some winemakers are replanting their vineyards in higher areas or moving to mountainous regions to escape global warming. Some talk about a "race to the south". Is this a major trend?

Numerous studies show significant increases, not only in average and daytime temperatures, but also increases in the sugar content of berries at harvest time. Projecting ourselves in the future, we will for sure observe different maximum and minimum temperature increases for most of the wine regions by the year 2050. So yes, some winemakers are seriously considering planting new vineyards in cooler areas. For example, Argentina has seen an increase in average temperatures of 2° C and a decrease of 30% in annual rainfall over the last ten years, resulting in vineyards being planted and wines being produced in previously unthinkable areas such as Patagonia. These changes are also reported in Chile, Bolivia, Uruguay...

If climate has an impact, the profile of wines is also the result of the winemakers' work, right?

More sugar in the berries means more alcohol in the wine and less acidity, which are among the most striking variables. This makes it necessary to pay more attention to the variables involved: choosing the most suitable grape varieties, changing procedures and cultivation work in the vineyard. Harvesting at times when the temperature has less impact (even at night)

and, of course, choosing the best production techniques once the grapes have entered the cellar. Winemaking techniques and biotechnology play an important role: the type, time and temperatures of maceration and fermentation; enzymes, bacteria and yeasts are essential factors that contribute decisively to the qualitative perception of the final product. The role of Fermentis in this regard can mean a lot to the winemaker, providing guidance on the best forms of nutrition for the ferments and helping to choose specific yeast strains to obtain maximum expression.

In addition to climate, customers are also changing... How is consumption on the continent evolving?

Well... consumption per capita/year is very different: Argentina and Uruguay are the largest consumers at over 23 litres per person per year, followed by Chile at almost 18 litres, then Peru and Brazil at two litres. However, taking into account the total volume of wine consumed per country, Argentina, Brazil and Mexico report the highest consumption levels of wine in Latin America. The common denominator, in all cases, is the type of wine chosen. The current trend is to drink wines which are fruity in character, fresh and slightly acidic for whites and rosés, and slightly tannic, fruity and of medium structure with slight overtones of wood, in the case of red wines. Easy to drink wines, harmonious, which create the desire to have another glass, and at any time.

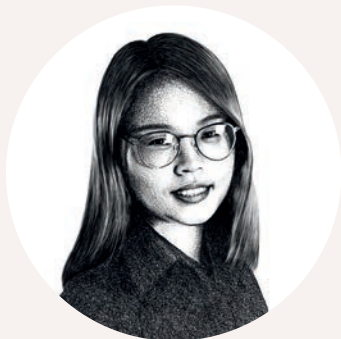
Sparkling wines are another matter, they are more and more consumed in all countries. Yesterday reserved for festive occasions, they are now drunk at any time, both as an aperitif and to celebrate weddings.

"Winemakers also need techniques and biotechnology to adapt themselves to global warming."

After two catastrophic years (drought, cyclones, torrential rains...), 2018 has been exceptional for South America. How can we help vine growers and winemakers cope with these huge variables?

In the case of high-end wines, annual variability can be a determining factor. So we have years where the "terroir" expresses itself in to the maximum and we have exceptional wines. However, this fraction of wine production represents less than 10% of total volume. The remainder of the grapes are destined for the production of lower and mid-range wines where it is of vital importance to maintain quality year after year. This can be a difficult task if you do not have the right tools to modify or adapt your work protocols according to the circumstances. Knowing how yeast responds to environmental stimuli (working temperatures, types and forms of nutrition, amount of biomass, etc.) is additional know-how that Fermentis can offer.

MARKET EMERGING TRENDS IN CHINA



BY NAN YANG

Our Regional Sales Manager Assistant,
Greater China

Millions of Chinese start drinking wine each year. What seduces them?

The first reason may be that the early academic articles and media propaganda on wine say that components of winegrape skin and seeds, such as resveratrol, have a positive effect on health. Moreover; wineries, winemakers and wines invite themselves in more and more movies and television shows, sometimes even being their central topic, and that is also a guide for the younger generation.

When Chinese are just getting in touch with import wines, they mostly hear about famous "Chateaux" of which quality and brand reputation are superior. Their preconceived impression is that wine is the symbol of nobleness and fame. But today, they gradually pay also more attention to wines from different countries and origins. Due to the diversity of its terroir characteristics and the richness of cultural stories, wine has become a good topic for discussion in the society and perfectly integrated into the Chinese table culture. For all these reasons also, China has ranked fourth country in the world of wine.

With 48 million regular consumers, do you manage to identify trends, taste preferences?

The most obvious trend is undoubtedly the increase of red wine consumption. Reds are dominant in terms of choice on the table and from the varieties in the vineyard. The Chinese even use the

name "red wine" to mean "wine". Affected by traditional Chinese alcoholic beverages (Baijiu), medium-to-high alcohol content is also one of the characteristics of alcoholic beverages required in the Chinese market. In addition, on the basis of ensuring the body of wine, with a richer flower and fruit fragrance, the wine will give consumers a better impression.

"Thanks to the new generation, wine enters increasingly in the Chinese lifestyle."

Among the new consumers, there are many young people. What does it change?

For older generation drinkers, wine is often consumed on business related occasions. At this time, they prefer red wine. It is a more acceptable and more secure choice than white wine. For young people, the occasion of drinking wine is not limited to business banquets. They enjoy it at friends' gatherings, daily dinners, etc... and they are more "open" than their elders: white, rosé, sparkling wine may be found on their table. Data shows that 40% of imported wines are consumed by groups aged 18 to 29. These young people don't choose high-priced wines, but their choice is varied. Plus, drinking from the younger age, they will get accustomed to drinking wine and their loyalty will be higher. So we can infer that, thanks to this new generation, wine will become an increasingly important choice in people's life.

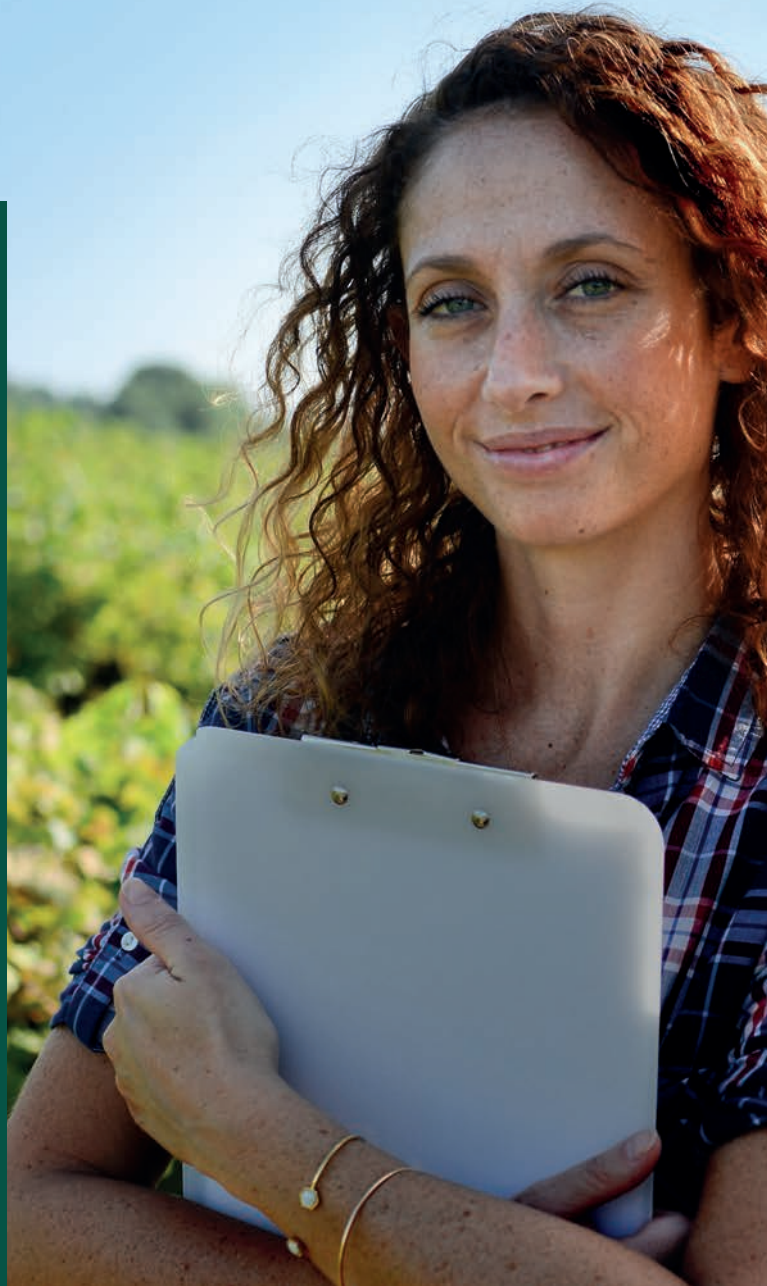
How do Chinese winemakers adapt? And what help, what fermentation solutions do they ask Fermentis?

The degree of specialization of Chinese winemakers is gradually increasing. At the initial stage of development, Chinese wines were firstly imitations, especially of the wine styles from the Bordeaux region. But now, with the diversification of consumer demand and the professionalism of winemakers, winemakers are increasingly aware of the creation of personalized wines. In addition, in China's wine industry, there is a group of experts who leads the development, guiding Chinese wines to look for the characteristics of each producing area, and hope to fix these characteristics. From the perspective of raw materials, China's grape varieties are relatively concentrated, and it is not easy to distinguish the various producing areas, but different terroir characteristics, and different fermentation processes, are effective ways to help diversification.

As a provider of yeasts and fermentation solutions, Fermentis is already involved in China. Providing a variety of yeast options to shape the diverse flavor characteristics of the wine is our driving force in this expanding market. For Chinese winemakers also we believe we can be the obvious choice.

SAVE TIME. GET COMFORT. ACT GREEN.

Fermentis' E2U™ products make life easier. This is their primary function (they are 'EASY 2 USE'): easier to handle, and easier to use, they allow you to save time. A characteristic that both appeals to and pleases many producers around the world. In addition, E2U™ products impact positively the environment, the economy and users' health. This is our way of innovating in the right direction and playing our part, modestly, in the struggle to protect our planet.



PROPERTY No. 1

Fermentation is easier

The first characteristic of our active dry yeasts which are certified and labelled E2U™ - is that they no longer have to be rehydrated prior to pitching. You can pitch them directly into the must, the quality of your fermentation will not change. Tests were carried out over more than a year on each of these strains to demonstrate that, without rehydration, all expected results were achieved: fermentation performance, delivery of flavors and aromas, expected colour, and desired degree of alcohol. Whether you rehydrate or not is no longer a matter of efficiency, it's now a matter of preference. Some winemakers were quick to go for direct pitch: all too happy to be able to make their everyday life easier and save time. Others, attached to certain customs or traditions, still prefer to maintain a preparation step. Anyway, E2U™ gives you the option to simplify the fermentation stage.

PROPERTY No. 2

Less water and energy are consumed

If all active dry yeast users (that is 75% of winemakers) decided not to rehydrate, 600,000 hl of water could be saved each year. This amount represents an annual water supply for a family of four in the United States for 162 years, or 274 years in France, and 548 years in Latin America. This would also result in energy savings since it would no longer be necessary to heat the rehydration water, as is the practice more often than not. In this respect, using E2U™ products would mean using less electricity or gas and cutting CO₂ emissions by 240 tons every year. With the same aim of reducing energy consumption, Fermentis has made product storage at room temperature a priority for the future.



PROPERTY No. 3

Pollution is reduced

It is estimated that tens of tons of pure detergent are used every year to clean the equipment needed to prepare 2.15 million oenological leavens. Detergents are very difficult to biodegrade and remain active for a long time. Discharged into sewers, they end up in the environment via watercourses and seepage, contaminating rivers and water tables, affecting aquatic plants and animals. Anything limiting the use of detergent is therefore positive.

"Many winemakers feel relieved. Work is easier and they get more safety for their teams and families."

PROPERTY No. 4

You get greater safety and convenience

In recent years, and in partnership with several laboratories, Fermentis has been tackling the problem of yeast particle inhalation during handling. Firstly on production sites for its own teams, but also for its customers of course. Several solutions have emerged from this research and from our commitment to ensuring maximum safety for the men and women who use our products: micro-granulated solutions, such as our Spring'Finer™ fining agent, and liquid-based products, such as our fermentation activator ViniLiquid™.

We have also undertaken an extensive R&D project to test the dispersibility of our yeast derivatives in order to limit the effects (inhalation along with wastage).

PROPERTY No. 5

It's an economic boost

Making it possible for our customers to avoid the rehydration stage, or to store products at room temperature, also means allowing them to avoid using certain equipments requiring capital expenditures (CAPEX). For young people or anyone reluctant to start up because of such excessive CAPEX, E2U™ may provide the solution. Having less to invest, means less to pay back. In this same spirit, Fermentis has put a great deal of work into improving packaging and extending the shelf life of its products, and by doing so, helping its customers manage their costs and tackle waste. In a sense, this economic dimension is our way of putting the cherry on the cake.

When we launched E2U™ a number of years ago, we knew that we were bringing excellent quality products to the market and that with these products we would be able to help you to preserve or improve the quality of your wines in a very challenging and competitive environment that is increasingly unstable. We also knew that our products were less demanding: requiring less water and energy than others and that their ease of use could have a positive economic impact, especially by limiting CAPEX. The worldwide success of the Fermentis E2U™ range among wine producers, along with brewers, cognac, whisky, and cider makers, tells us that we were right to believe that innovation only makes sense if it allows us to move forward together. So this is what we intend to keep on doing.

And we need you!

OUR E2U™ SOLUTIONS

SafEno™ HD S62

NEW!

For deeply colored and structured reds

SafEno™ HD S135

For full bodied... and smooth reds

SafEno™ STG S101

For fruity red and rosé wines

SafEno™ GV S107

NEW!

Ideally adapted to premium whites

SafEno™ CK S102

The ideal strain for aromatic white and rosé wines

SafEno™ SC 22

THE original starter yeast

SafEno™ BC S103

The choice for extreme conditions

SafEno™ NDA 21

The choice for elegant fruity style red wines

ViniLiquid™

The most efficient nutrient for multiple savings

SpringCell™ Color G2

NEW!

The new generation of SpringCell™ Color

Spring'Finer™

The perfect fining agent produced from yeast



ALISON RODRIGUEZ

Winemaker, Hess Family Wine Estates
CALIFORNIA

We have used the E2U™ formulation of SafEno™ GV S107 yeast in our Monterey Chardonnay program for the past two years now. We love how it highlights the citrus and tropical characteristics of the fruit from our Hess Collection Shirttail estate vineyard. We ferment at cold temperatures (around 55°F / 13°C), and the yeast could literally not be easier to use: rip open the package, mix gently in our sump of juice, and then mix into the main tank. Inoculation – simple, easy, reliable, done!

"We love it!"

• FROM THE FIELD •



STÉPHANE YERLE

Agricultural Engineer and Oenologist,
FRANCE, SPAIN, PORTUGAL, EASTERN EUROPE

I work as a consultant for around fifty wineries located across Europe, ranging from regional cooperatives to well-known châteaux. I often recommend SafEno™ BC S103 to my customers, because it is an excellent finisher that settles well. It is very effective after bioprotection phases. It can be added quickly, within 24 to 72 hours and there is no need to carry out two separate yeast inoculation procedures with rehydration and acclimatisation. It is also a very good solution for off-set harvesting sites. Once the grapes have been harvested, it can simply be sprinkled on and implantation starts during transport. It's very effective and saves time. I also recommend introducing it through a venturi connector because it is very resistant to the suction during the pumping of grapes that has been cooled after a thermovinification. This has real value for me.

*"It's very effective
and saves time."*

> 600,000

hectolitres of water saved per year.

> 1,500

tons of detergent unused.

> 240

tons of avoided CO₂ emissions.

zero

risk of product inhalation.

Time saving

average of 45 minutes
per starter preparation.

CAPEX savings

Productivity increase

Non conformity decrease

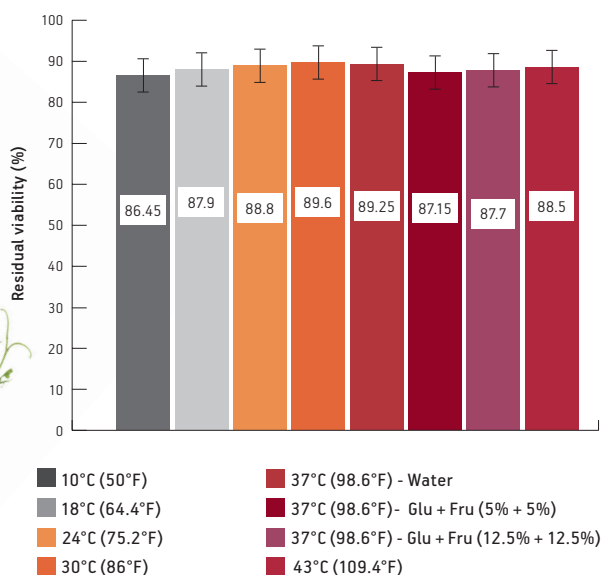


SafEno™ GV S107

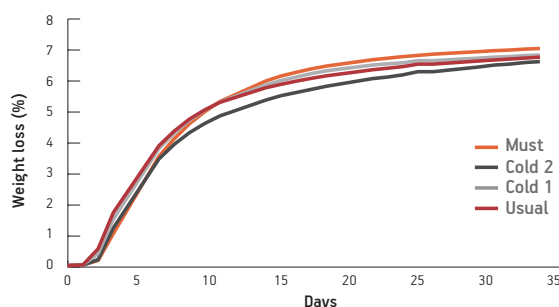
Preserved viability

— **Conditions:** the SafEno™ GV S107 yeast was rehydrated in distilled water heated to different temperatures, left to rest for 15 minutes and then moderately stirred (100 rpm) for another 30 minutes. At 37°C, 2 other rehydration medias were tested: 10% and 25% sugared distilled water (Glu:Fru, 1:1).

— **Findings:** the high viability of SafEno™ GV S107 yeast is very stable and not affected by rehydration conditions (no significant differences with a 5% error margin). Even in extreme cases (10°C and 43°C); its residual viability lies between 86 and 90%.



Alcoholic fermentation kinetics



Residual Glucose + Fructose (g/L)

Must	1
Cold 2	10.6
Cold 1	1.6
Usual	2.1

Yeast preparation conditions: Usual: rehydration in tap water at 35/37°C then progressive acclimatization to must temperature with must addition before inoculation, **Cold 1:** rehydration in tap water at 15°C for 15min, **Cold 2:** rehydration in tap water at 15°C for 1min, **Must:** direct pitching.

If rehydration in water is chosen: beware of leaving the yeast rehydrating in the water for at least 10-15 min to avoid fermentation performances loss!!!

An organoleptic profile of equivalent quality in all circumstances

— **Conditions:** on the same Chardonnay but microvinified in 50L tanks, a professional triangular tasting of 12 panelists ("Among 3 samples in which 2 are from the same condition and 1 from another condition, identify which one is different from the others") have been carried out in order to assess the organoleptic differences between conditions. This tasting has been done after SO₂ correction and stabilization.

— **Findings:** again the cold rehydration 2 fermented slower than the two other conditions (about 20 days more!) but finished the fermentation allowing a real tasting. All preparation conditions of the SafEno™ GV S107 yeast had no impact on global organoleptic profile compared to usual acclimatization, thus validating time saving and sustainable alternatives.

Triangular tasting

Cold2 vs Cold1	NS (p=0.19)
Cold2 vs Usual	NS (p=0.24)
Cold1 vs Must	NS (p=0.24)

NS (p=X): Non-significant differences (probability value)

Maintained fermentation performances (except in 1 case to be avoided!)

— **Conditions:** the SafEno™ GV S107 yeast has been prepared in a range of 4 different conditions and tested on a laboratory scale vinified Chardonnay (2L), chaptalized to 14% v/v and adjusted from a ratio Yeast Available Nitrogen (ppm) / Sugar (g/l) of 0.57 to 0.8 with diammonium phosphate at inoculation. Fermentation temperature was constant at 18°C (64.4°F).

— **Findings:** only the condition in which SafEno™ GV S107 yeast has been rehydrated just 1 min in 15°C water then directly transferred into the must affected the kinetic and lead to a stuck fermentation. All the other conditions of preparation did not affect its fermentation kinetic and analytical performances after alcoholic fermentation.

Tests conducted by Meurice institute (Brussels – Belgium) and the Institut Français de la Vigne et du Vin (Nantes – France) on Easy 2 use SafEno™ GV S107, a strain designed for the production of premium whites fermented at low temperature, especially Chardonnay-style.

E2U™: 3 TESTS TO PASS*

*For our yeast derivatives

After ViniLiquid™ and Spring'Finer™, SpringCell™ Color G2 has now become part of the E2U™ product range. Designed to improve the intensity and the stability of the polyphenolic profile of red wines, this functional product has just passed all the necessary tests to qualify as 'Easy 2 Use'. A perfect opportunity to explain the three criteria used for our yeast derivatives in the selection process carried out by the PowderStudio™.

1 PULVERULENCE

This is the criterion that confirms a product is 'safe to use'. Pulverulence measures the risk of inhaling fine particles released from a sachet when it is opened, especially when opened rather quickly or vigorously. The finer (or the more 'dusty') the particles, the greater the risk of inhalation.

THE TEST. 1. The powder is poured into a sintered glass cylinder. **2.** An air flow is applied from the bottom upwards and the minimum speed required for the powder to fill the entire cylinder is measured. **Results:** for fine dusty powders, this happens just below 2 mm/s. **3.** A propeller rod rotating at a constant speed of 100 mm/s is inserted into the cylinder containing the previously suspended powder blown at an air speed of 10 mm/s. **4.** The aeration energy measured corresponds to the energy required to maintain the propeller at the constant speed of 100 mm/s. **Results:** the finer the powder, the less resistant it is. The more micro-granulated (and therefore heavier) it is, the more energy it takes to maintain the propeller at a constant speed.

2 WETTABILITY

This criterion measures how powder behaves on the surface of a liquid. A wettable powder easily penetrates a liquid. Does it fast become wet and submerge well or does it remain on the surface and form lumps? To qualify as E2U™, a powder must become wet in less than three minutes.

THE TEST. 1. The powder is poured over the surface of a liquid. **2.** Its behaviour is observed during three minutes. **Results:** if a powder takes more than three minutes to become completely wet, its dispersion will not necessarily be difficult, but it will be slower. This parameter is not the most important for defining an E2U™ powder.

3 DISPERSIBILITY

This measures the ability of a powder to spread homogeneously in a liquid when a stirring is applied. Powder is considered dispersible when it completely gets into the liquid without creating lumps (aggregates). NB: the powder is 'dispersed' and not 'dissolved' as most of the time we are considering insoluble yeast derivatives.

THE TEST. 1. The liquid is placed on a stirrer that can rotate at the rate of 250 rotations/minute. **2.** The powder is poured over the liquid. **3.** Its wettability is observed during three minutes. **4.** The stirrer is then turned on. **5.** The powder's dispersibility time is measured. **Results:** the powder disperses immediately when its wettability takes less than three minutes.

→ SpringCell™ Color G2 joins the E2U™ range

	Wettability time 15°C/	Dispersibility time 15°C	Pulverulence		Pulve- rulence	E2U 15°C
			Minimum aeration rate mm/sec.	Aeration energy at a rate of 10 mm/sec. (MJ)		
SpringCell™ Color G2 fine powder	>3min.	1min. 20sec.	2	250	YES	NO
SpringCell™ Color G2 microgranulated powder	>3min.	25 sec.	10	631	NO	YES

SpringCell™ Color G2 increases color density in our wines.

We plan now to expand its use.



EMILY HAINES

Winemaker, Terra d'Oro Winery
CALIFORNIA

What kind of wine do you produce?

With 400 acres of estate vines in Amador County, we produce robust, full-flavored red wines, Zinfandel and Barbera in particular, but also Petite Sirah, Pinot Grigio, Sangiovese and more. Every decision we make impacts the wine in the glass, from when we pick the fruit to the yeast we use to start fermentation, to the toast level of the barrels.

Since when do you use the SpringCell™ Color G2?

We have used the first generation of SpringCell™ Color since 2016 but trialled SpringCell™ Color G2 this last vintage (2018). We have some varieties and fields that have shown weak color. We had some success with the first generation of the product and wanted to see how much additional improvement we could receive from the second generation of SpringCell.

Who recommended it to you?

Our ATPGroup Sales Rep, Sierra Eaton, made me aware of this solution and that it would further increase color density in our wines.

What is the main benefit you get from this functional product?

In our side by side trials done here at the winery, we saw a marked increase in color density for our 2018 Sangiovese. In future vintages we plan to expand use to other varieties and fields that have a history of weak color.

SpringCell™ Color G2 is now certified E2U™, in which way does it bring comfort?

It removes the guesswork on if the product was prepared correctly prior to addition. So yes, it's great that it has the E2U™ certification, especially when looking to achieve the best overall efficacy of the product.



WHAT IF WE COULD STEER AROMATIC PROFILES?

Research program in partnership with Vivelys

This question was the starting point of an extensive research program carried out jointly by Fermentis and Vivelys with the support of the French National Institute for Agricultural Research (INRA). This program aimed to provide wine producers with the means to create the aromas they desire and to pilot fermentation according to the results they wish to obtain. Update with the Fermentis R&D team.

GOODNEWS - The partnership with Vivelys can be considered as a success story. What was our 'common ground'?

FERMENTIS - No doubt the interest of concrete experimentation which results in practical advices quite quickly. It all started at the beginning of 2009. The Vivelys team had just launched a new R&D program. They had installed sensors at the top of the fermentation tanks so that CO₂ flow speed could be measured continuously during fermentation. As a general rule, density is measured and recorded once or twice a day in wineries. In this case, results were automated, curves were plotted in real time, and it was possible to know what was happening by the minute. Human intervention was becoming much more efficient.



For example, if we know that we have to add oxygen at the first quarter of the fermentation advancement to strengthen yeast viability and make their membranes more resistant, this can be done with great precision.

In terms of expertise, Vivelys engineers were evidently up to speed. Why did they come knocking to Fermentis' door?

For the nutritional dimension; this being an area where they had less expertise. They wanted to understand the process. When does yeast require nutrients? Which ones? When is the right time to add them? Their perspective remained unchanged; the focus still being efficiency. This also enabled us to move forward and find new solutions.

Was that when we created ViniLiquid™?

Yes. We were looking for solutions to make supplying organic nitrogen simpler, and we ended up creating this yeast autolysate in a liquid format: THE first one! That was in 2013.

→ A RECIPE =

a temperature regime + a level of oxygenation
+ a certain supply of nutrients (nitrogen, minerals, vitamins, and others) + a certain supply of yeast hulls (support elements, lipids)

Were you already thinking about working on aromas?

Yes, we thought it would be in our interest to look at aromas together. So, two or three years ago, we got in contact again. In the meantime, at Fermentis we had launched an aromatic-based characterisation program for our yeasts. We were beginning to know what each one had to offer in 'international' conditions of use, on different varieties and in different vinification processes. What interested us, from then on, was to see how they could behave if we modified certain factors (such as temperature, oxygen levels and nutrients).

So Fermentis went to try out some recipes at Vivelys?

Exactly. We took one of Vivelys' standard recipes for bringing out fermentative aromas, and firstly retested all our yeasts. This to establish the base of each one under real conditions using a not too deficient Chardonnay must (to maximise aromatic

We are able to tell our customers: "By adjusting these parameters, you'll boost this or that aroma."

differences). It is important to point out that we focused on fermentative aromas: aromas that are not 'released' but actually 'created' by the yeast during fermentation. We then chose two of our yeasts and started to really steer fermentation by adjusting three parameters: temperature (which was already low), nutrition and yeast hulls (these fermentation aids have a very high impact on yeast viability). We did not, however, study oxygenation.

The yeasts tested were SafEno™ HD S62 and SafEno™ BC S103. Why this choice?

Up until then, only SafEno™ CK S102 (one of Fermentis' best sellers) had been used as the basis for all experiments. Why that particular one? Because it is very robust and very aromatic at the same time. Following this new characterisation, CK S102 was no longer the obvious choice. The yeasts we chose were indeed also two strong yeasts, but very different in terms of aromatic qualities. For example, SafEno™ BC S103 produces more acetate esters and higher alcohols than HD S62, which produces less acetate but more ethyl esters, a little bit more volatile acidity but very few sulphites.

What emerged from this first round?

Results meaning we are able, practically, to tell our customers: "By adjusting these parameters, you'll boost this or that aroma; by raising the temperature or adding yeast hulls, you'll obtain such or such aromatic variation." This research program opens up some very promising opportunities. By testing just two of our yeasts and playing with six fermentation conditions, we can now provide precise guidance for winemakers who are looking for fruity aromas. For a more amylic aroma (banana, candy), we would suggest BC S103, fermentation at low temperature, addition of nitrogen but, above all, no yeast hulls. For more complex aromas such as 'fruit basket', we recommend HD S62, an average temperature, with yeast hulls but no nitrogen.

So this is just the beginning then?

Exactly, it means that the same yeast strain can be used to obtain very different results. But at Fermentis, this is something we've been convinced of for a long time now. We have deliberately kept our range down to eleven strains, the quality of which enables us to meet most needs without having to make an announcement every six months. What's more, the tests we have just carried out are in line with Fermentis' strategic focus to continually increase our knowledge on our products, and make this knowledge immediately available to winemakers.

MAKE YOUR CHOICE!

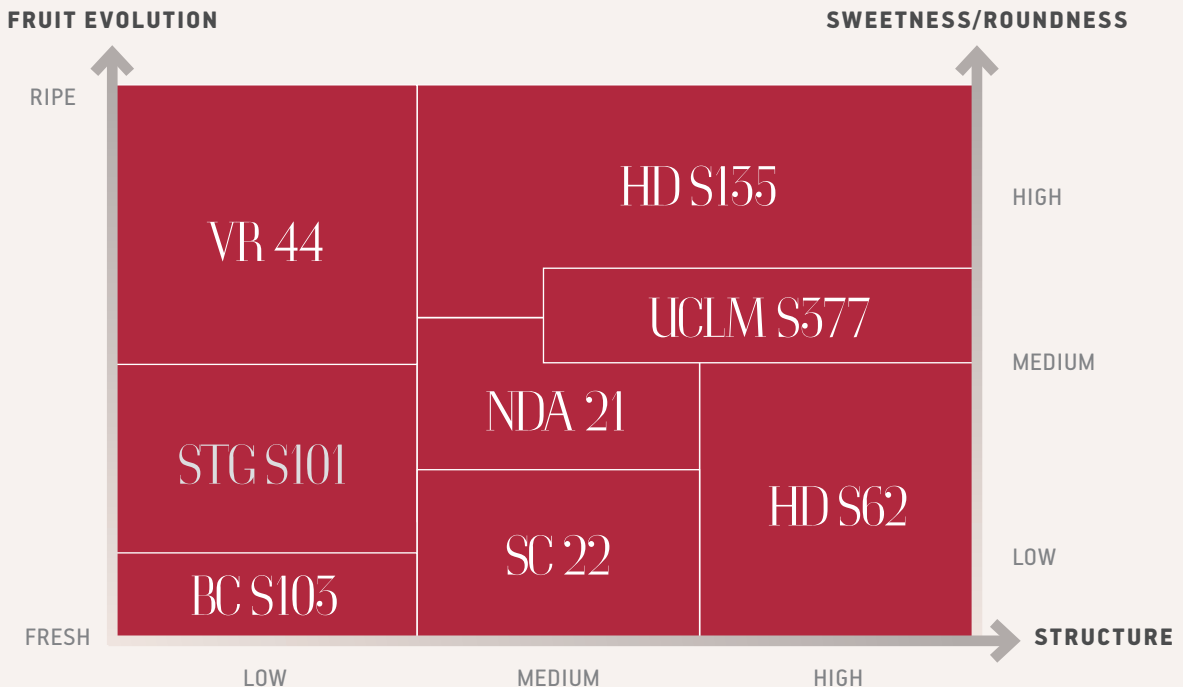
The more we know about our yeasts and derivatives, the better we can advise you. This motto leads us to constantly push and share with you our researches and experiences. We hope this technical file will help you.

YEASTS

→ REDS

We have selected 8 yeast strains for your reds.

Temperature range
20°C ← → 28°C



POINTS TO NOTE

Each wine is unique. For red wines, yeasts strongly participate to this uniqueness by creating and revealing aromas with rather fresh or ripe fruity profiles (evolution) but as well by influencing their body, meaning their polyphenolic profile (structure - skeleton) and its mouthfeel perception (roundness – muscles/fat). Based on analyses and tastings of many diverse experiments (our yeast characterization R&D program), this map helps you to find the right choice for your red wine types, voluntarily away from a variety point of view.

TECHNICAL CHARACTERISTICS

Yeast Available Nitrogen (YAN) needs :

N: 0.7 - 0.8 YAN (ppm) / Sugar (g/L)

NN: 0.8 - 0.9

NNN: >0.9

Advised working temperature:

Grey: >10°C

Pink: >14°C

Orange: >17°C

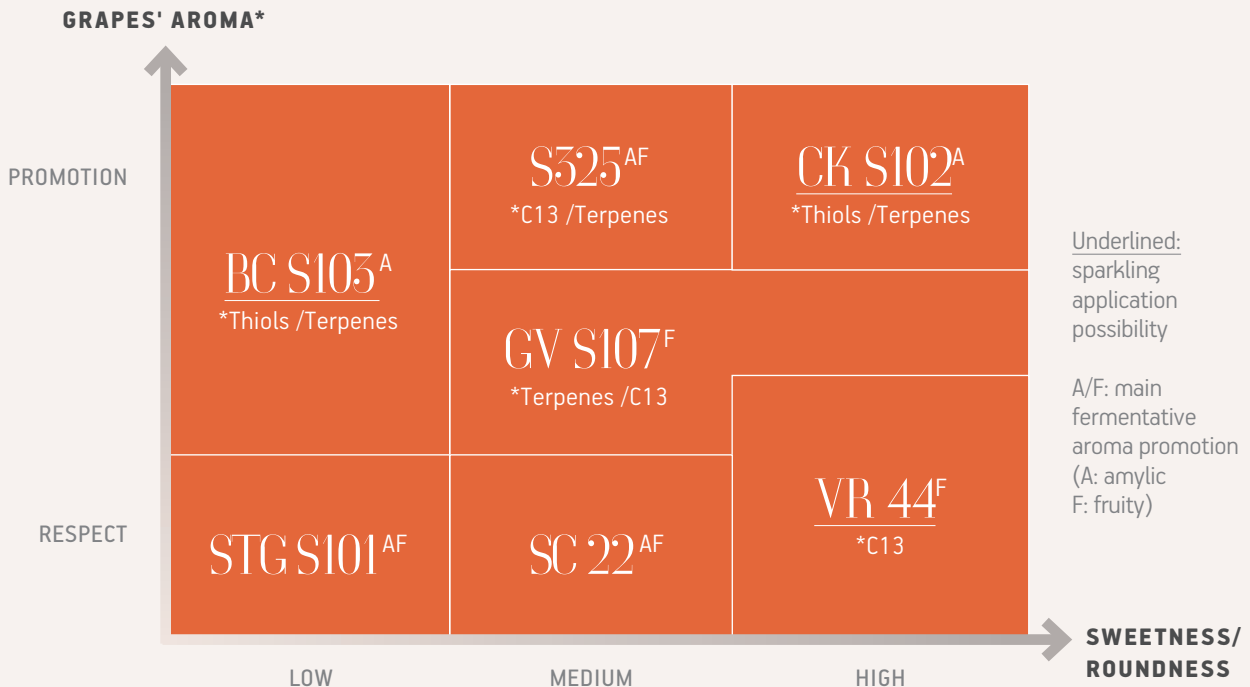
* NNN related to aromatic profile

FERMENTATION KINETICS		DIFFICULT CONDITIONS RESISTANCE	
VERY FAST	BC S103 ^N	STRONG	
	CK S102 ^{N*} / VR 44 ^N		
FAST	HD S62 ^N / HD S135 ^N	GOOD	
	SC 22 ^N		
REGULAR	NDA 21 ^{NN}	MODERATE	
	STG S101 ^{NN} / GV S107 ^{NN}		
SLOW	UCLM S377 ^{NNN} / UCLM S325 ^{NNN}		

→ WHITE AND ROSÉ WINE TYPES

Here are 7 yeast strains dedicated to white, rosé and sparkling wines.

Temperature range
14°C ← Esters → 20°C Grapes' aroma



POINTS TO NOTE

Establishing a profile for your white and rosé wines is complex. Apart from the roundness brought specifically by each yeast (as for reds), the factors strongly influencing the aromatic profile are diverse and very impactful. Depending on their enzymatic pool, yeasts are more or less able to reveal different types of varietal aromas (C13 / Terpenes / Thiols) and to create fermentative flavors (Amylic – acetate esters / Fruity – ethyl esters). This map will give you a chance to reach your goals.

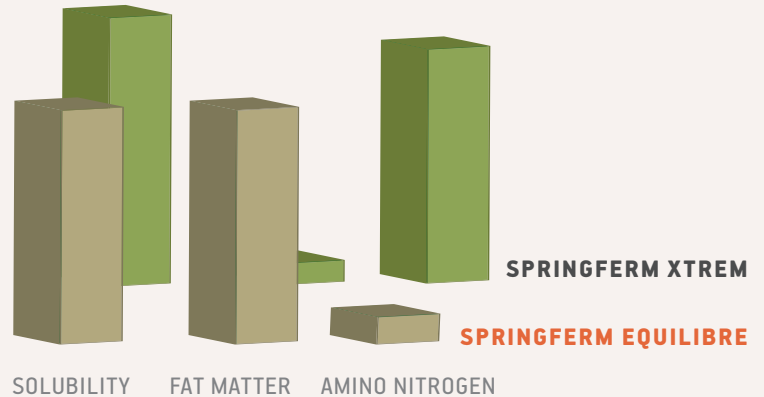
FERMENTATION AIDS

→ RELATIVE COMPOSITION OF THE DRY MATTER

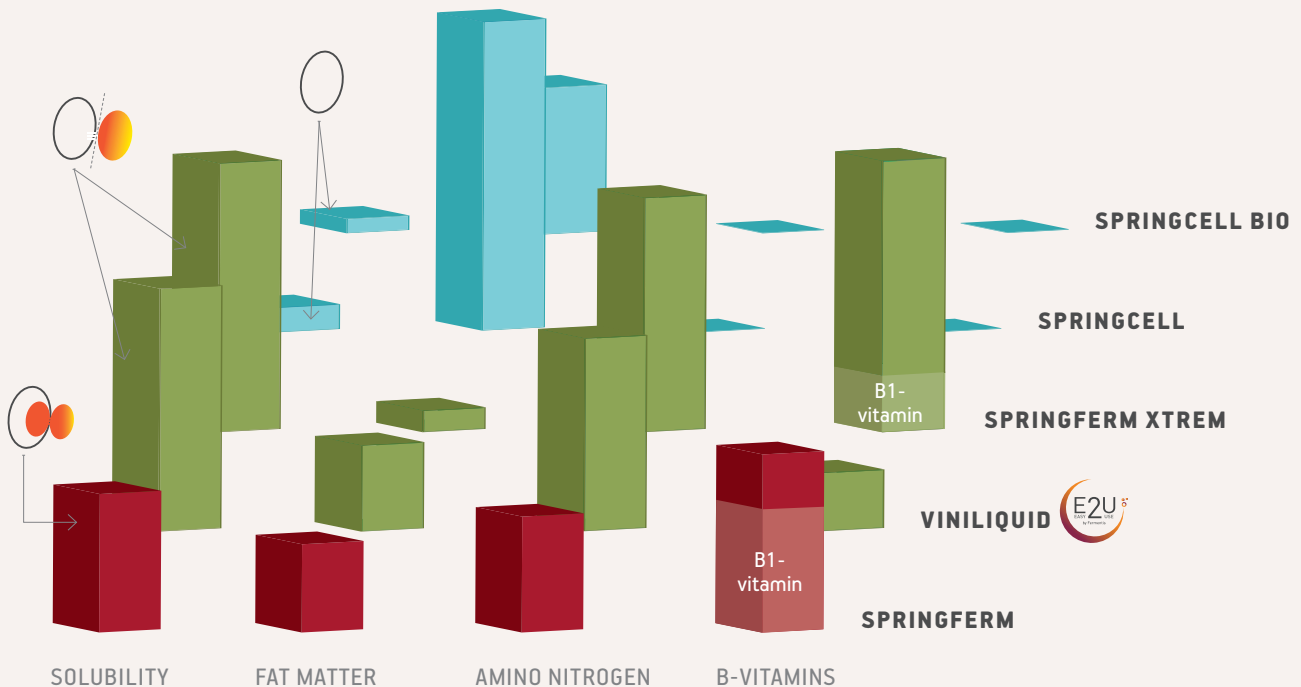
SPECIFICITY

SpringFerm™ Equilibre is the only fermentation aid whose composition includes a source of mineral nitrogen (DAP) and an exogenous vitamin (B1) in addition to yeast derivatives. It was designed to meet specific needs, in particular for restarting stuck ferments.

Find hereafter what represents its supply in yeast derivatives compared to our SpringFerm™ Xtrem.



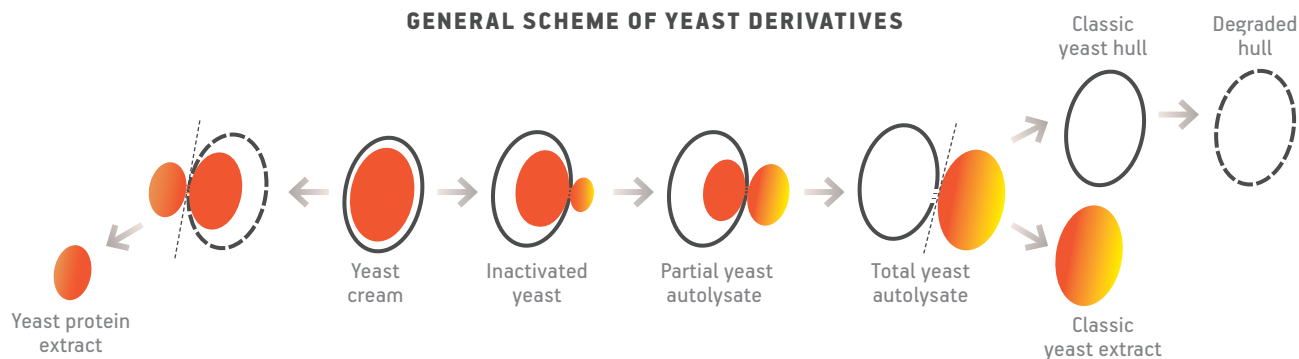
Variations due to different strains and production processes.



POINTS TO NOTE

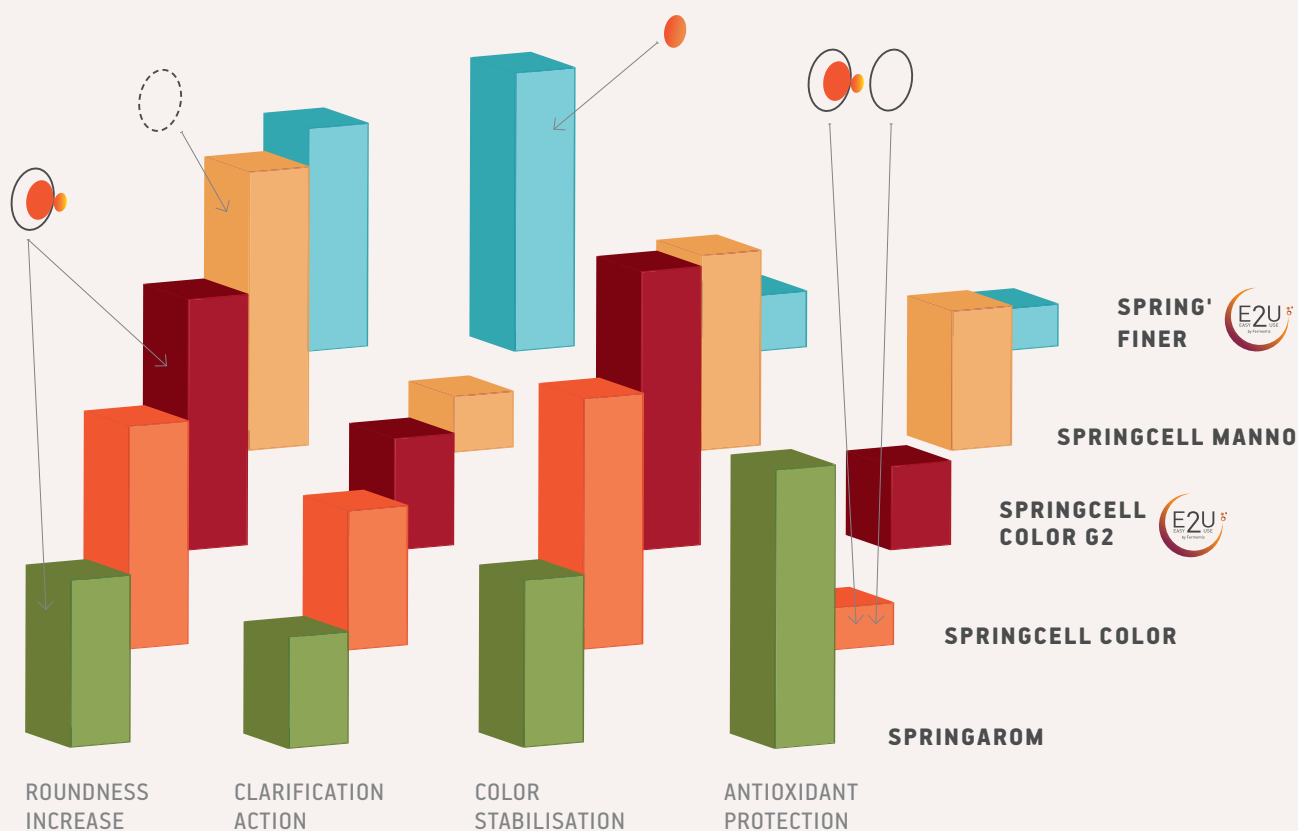
A complex range of nutrients is required by yeast to ferment correctly. Organic yeast available nitrogen, vitamins, lipids and support elements are all nutrients that help yeast to grow and survive, and which are necessary for its development. So, what could be more natural than adding the same components that yeast is made of to optimise its performance? This is the philosophy behind our range of fermentation aids that are specifically yeast-derived, which includes from polyvalent simple yeast autolysate to total autolysates for maximal nutritive power. In addition, yeast hulls serve to detoxify the yeast fermentation environment for safer fermentation.

GENERAL SCHEME OF YEAST DERIVATIVES



FUNCTIONAL PRODUCTS

→ RELATIVE CONTRIBUTION



POINTS TO NOTE

The lees provide many yeast compounds with properties that enhance wine quality during ageing. Resistance to oxidation, greater roundness, color stability and even natural clarification are among the advantages that are mainly due to the presence of yeast peptides and proteins, along with specific polysaccharides. Functional products are based on these findings to provide winemakers with precise refining tools to preserve or even improve the quality of their wines. Our common aim being to always offer connoisseurs of well-made wines even more pleasure.

• We'll be there •

Save the date!

In 2019, Fermentis will come to you in over one hundred towns, all over the world. As we said, it's the best way for us to meet you and get a real idea of your needs. Here are the main events where you will find us.

JAN.

→ 29-31

UNIFIED WINE & GRAPE
SYMPOSIUM

Sacramento, CA, USA

FEB.

→ 11-14

WASHINGTON WINEGROWERS
CONVENTION & TRADE SHOW

Kennewick, WA, USA

→ 20-24

VINARIA, INTERNATIONAL
EXHIBITION OF VINE-GROWING
AND WINE PRODUCING

Plovdiv, Bulgaria

→ 26-01st MARCH

ENOMAQ

Zaragoza, Spain

MAY

→ 30-01st JUNE

EXPO WINE+BEER

Santiago, Chile

JUNE

→ 03-05

SITEVINITECH CHINA

Qingdao, China

JULY

→ 22-24

WINETECH

Adelaide, Australia

NOV.

→ 19-22

SIMEI

Milan, Italy

→ 26-28

SITEVI

Montpellier, France

→ 27-29

DRINK JAPAN

Chiba, Japan



Fermentis

LESAFFRE FOR BEVERAGES