

Bio-protect your must with the Viniflora® range of Non-Saccharomyces yeast and preserve wine's personality.

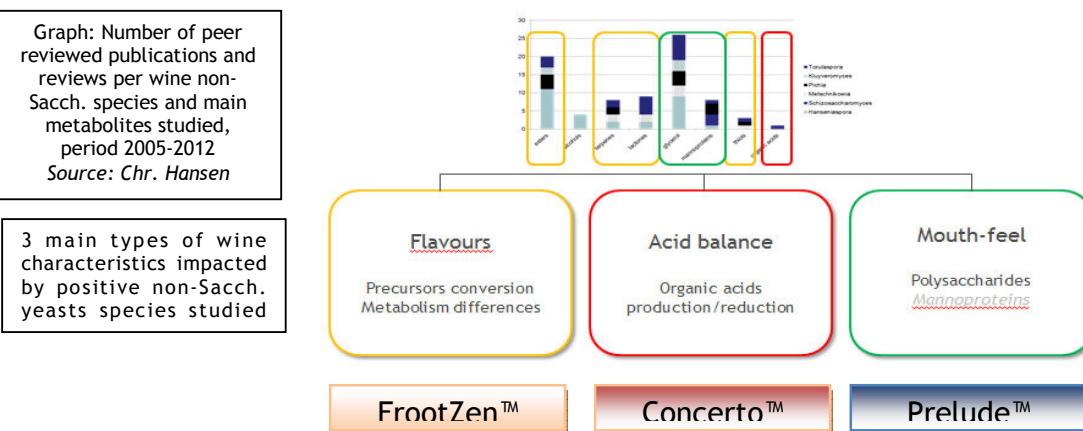
Chr. Hansen's leadership in non-Saccharomyces yeasts for winemaking is unrivalled and our visionary approach and range of products was backed by an international Award from Frost & Sullivan in October 2014(*)).

For decades non-Saccharomyces yeasts have been considered as just spoilage organisms while the reality is more balanced with spoilage species, neutral species and positive species among the different yeasts present in must. The launch of Chr. Hansen blends in the early 2000s such as MELODY™ and thereafter of pure strains of yeasts, selected among the positive pool of non-Saccharomyces yeasts species, are two very important steps for winemakers interested in managing their fermentations to get more natural wines. Wines containing less sulfites are an example of this, and these benefit from the microorganism's bio-protective effects and capabilities. The first pure *Torulaspora delbrueckii* for the wine industry was launched by Chr. Hansen in August 2009. Today Chr. Hansen offers the broadest range of pure non-Saccharomyces strains and a global expertise about their application in winemaking, answering the key questions for our customers around the world: When to use a non-Sacch. yeast? Which strain to select? What Saccharomyces product to choose as a secondary yeast to complete alcoholic fermentation?

Main interest of non-Saccharomyces yeasts in winemaking: Bio-protection through mutual exclusion.

Non-Saccharomyces wine yeasts are mainly used today to kick-start the alcoholic fermentation with species of microorganisms that can overcome moulds, lactic acid bacteria or wild yeasts through competitive exclusion. This bio-protective effect helps reduce the use of preservatives such as sulfites. It also allows for more flavour precursor conversion, thanks to a pool of enzymes that is different from *Saccharomyces* spp. and reduces the stress markers such as acetic acid, sulfites or medium chain fatty acids produced by *Saccharomyces* spp. at the beginning of alcoholic fermentation. These strains generally help facilitating the alcoholic fermentation with *Saccharomyces* and we discovered that they also favour the malolactic fermentation. These different benefits help preserve the original value that lies in the grapes such as flavour precursors and represent one of the most interesting natural tools to keep wine's personality.

Chr. Hansen has selected 3 strains of non-Saccharomyces based on a thorough analysis of non-Saccharomyces yeasts potentialities. Each strain represents the best alternative among the non-Sacch. products available.



* to know more about the Innovation Award 2014 Chr. Hansen received from Frost & Sullivan in 2014:
<http://www.frost.com/news/press-releases/frost-sullivan-awards-chr-hansen-its-innovation-leadership-microbial-solutions-wine-industry/>

Latest knowledge about Viniflora® pure non-Saccharomyces strains, their applications and benefits:

	FrootZen™	Concerto™	Prelude™
Species	<i>Pichia kluyveri</i>	<i>Lachancea (Kluyveromyces) thermotolerans</i>	<i>Torulaspora delbrueckii</i>
Strain	Selected, exclusive strain. Origin, New Zealand	Selected by CH, unique. Origin, Italy	Selected by CH, unique. Origin, France
Year launched	2010	2011	2009
Picture			
Main application	Intensify fruit and floral flavor precursor conversion (thiols, terpenes, esters)	Lactic acid production increasing total acidity in wines	Polysaccharides production and lower volatile acidity
Secondary application	Oxygen consumption in must (totally consumed in 30m), assisting in reductive white wine making or rosé wine making	Flavor complexity (red and black berries). Results in high concentrations of ethyl lactate (strawberry flavour); interesting for both red and rosé wines.	Flavor complexity
Organic winemaking status	Approved for Organic wines in EU and USA	Approved for Organic wines in EU and USA	Approved for Organic wines in EU and USA
New information	Brings additional elegance to red and rosé wines	Maximum impact by increasing dosage up to 45-65 g/HL	Maximum impact by increasing dosage up to 45-65 g/HL
Special	Direct inoculation yeast, delivered deeply frozen	Ideal for red, rosé and white wines from warm climate regions	Perfect for barrel matured wines or when using oak chips
Value created	Game-changer: +1-2 points on a 20 points scale; +2 € per bottle in blind tasting	Red wines premiumisation: +2-3 /100 points in most cases. More balanced wines, 'wild ferment' touch	Outstanding red/white wines when dosage is respected, 'wild ferment touch' without the risk
Pack size	100 HL	10 to 20 HL depending dosage rate	10 to 20 HL depending dosage rate
Guidelines about Saccharomyces	Monitor YAN before use Good Sacch. implantation	Monitor YAN before use Good Sacch. implantation	Monitor YAN before use Good Sacch. implantation
MLB strains frequently paired	CiNe™ or CH11/CH16 in reds	CH16, CiNe™	CH35/CiNe™ on both red and white wines
Guidelines for use	Use 1 pack at once Full dosage	Rehydration temperature is different from Sacch. No chlorine/low SO ₂ Dosage 25 to 65 g/HL	Rehydration temperature is different from Sacch. No chlorine/low SO ₂ Dosage 25 to 65 g/HL
White wines	Sav. blanc/Viognier/Riesling Fruit forward Chardonnay	Warm climate Chardonnay, Viognier, Riesling	Chardonnay, Chenin blanc Sav. blanc
Rosé/Blush wines	Syrah/Cabernet	Syrah/Tempranillo	Syrah/Grenache/Cinsaut
Red wines	Pinot Noir/Merlot/Syrah	Merlot, Syrah, Cabernet-S., Grenache N., Primitivo, Zinfandel, Tempranillo, ...	Merlot/Tempranillo/Cabernet Sauvignon and Franc Pinot Noir (cold soak)
Base wines for sparkling	Chardonnay	-	Chardonnay
Base wines for brandy	Ugni blanc, Colombard	-	-

