Vi-A-Dry Yeast Strains

CEG (EPERNAY II)

S. cerevisiae • cerevisiae

White

#15081	500 g	
#15093	10 kg	

- Isolated by the Geisenheim Research Station in Germany.
- Notable for its ability to deliver slow, steady, and clean fermentations. Optimal fermentation temperatures range from 15-25°C(59-77°F).
- CEG fermentations often stick under stressed conditions (low temperatures, low nutrient content, etc.), leaving some residual sugar. This makes CEG advantageous for use in semi-dry white wines.

CHAMPAGNE (DAVIS 595)

S. cerevisiae • bayanus

White, Red, Sparkling Base, Fruit Wine

#15055	500 g	
#15075	10 kg	

- Selected by UC Davis researchers from the strain collection at the Pasteur Institute in Paris, France.
- This strain ferments between 12-29°C(55-85°F) and has good SO_2 tolerance.
- It is considered neutral in sensory contribution.

MONTRACHET (DAVIS 522)

S. cerevisiae • cerevisiae

White

#15060	500 g	
#15074	10 kg	

- Selected from the Pasteur Institute strain collection in Paris, France by UC Davis researchers.
- With proper nutrition, it has moderate fermentation kinetics at 10-29°C(50-85°F) with low VA and SO_2 formation.
- This strain is sensitive to the killer factor, alcohol levels above 13% (v/v) and to over-clarified musts (turbidity <50 NTU).
- Considered neutral in sensory contribution.

PM (PRISE DE MOUSSE)

S. cerevisiae • bayanus

White, Sparkling Base, Fruit Wine

#15085	500 g	
#15083	10 kg	

- PM has good fermentation kinetics at temperatures between 15-25°C(59-77°F).
- Moderate producer of VA and a low foam and H_2S producer.
- Has high SO_2 and alcohol tolerances.

CO-INOCULATION WITH WINE YEAST BLENDS: THE ANCHOR EXPERIENCE

Until recently the use of more than one wine yeast strain to conduct alcoholic fermentations has been frowned upon. Since the introduction of dried wine yeast starter cultures decades ago, the mantra has been to inoculate with one yeast strain and at the recommended dosage only. This is because wine yeasts have different metabolisms (i.e. speeds of fermentation, nutrient demands, etc.) and the stronger yeast strains will out-compete weaker strains. Additionally there is a possibility that undesired sensory characters may appear or that fermentations may become stuck.

It is clear that certain wines made from "wild" fermentations (where more than one strain of yeast normally takes part) sometimes exhibit more interesting characters than wines made with a single inoculated strain. The problem for winemakers, however, is to achieve such results reliably. Dried wine yeasts are sold based upon their consistency and predictable aroma profiles. If such strains are blended for compatible fermentation characteristics, it should be possible to come up with commercial dried yeast products which work reliably. Anchor Yeast has recently done extensive research in this area.

Anchor's research on co-inoculation began with three major requirements in mind. First, reliability is a core principle for Anchor. This is reflected in the fact that the vast majority of Anchor strains are hybrids. Second, anything new should not compromise the aroma building properties for which Anchor strains were initially selected. Third, the resulting wines should be more complex than the controls.

It is important to understand that it is not possible to randomly inoculate with any two yeast strains. At a minimum, the following eight issues need to be considered:

1. Fermentation speed – Faster yeast strains out-compete slower yeast strains. For equal contribution in a co-inoculation, one has to choose two yeasts with the same speed or use a higher ratio of the slower yeast.

2. Temperature range - This is particularly important in white wine fermentations. In general only *Saccharomyces cerevisiae bayanus* and hybrids between *bayanus* and *cerevisiae* can ferment cold (55-59°F/13-15°C). Co-inoculation of these yeasts with *Saccharomyces cerevisiae cerevisiae* must be fermented above 59°F(15°C) to obtain contribution from the *cerevisiae* strain. A higher dose of *cerevisiae* is also required if an equal contribution is desired.
3. Nitrogen demand - Generally the yeast strains with lowest demand will out-compete the yeast strains with higher demand.
4. Complex nutrient demand - Some yeast strains require additional vitamins, minerals and sterols to enhance fermentation or possibly to simply complete fermentation. The yeast with the lower demand will ferment faster than yeast with a higher demand.
5. Killer factor - Fermentation studies done by the Australian Wine Research Institute (AWRI) between a killer positive strain and killer negative strain showed 90% viability for the killer positive strain at the end of fermentation and only 10% for the sensitive strain[1]. It cannot be concluded that killer status differences are exclusively responsible for the observed dynamics as nutrient demand and fermentation speed could have been contributing factors. Mixing yeast strains with different killer factors is not advisable.
6. Higher alcohol and ester production - In the right concentrations, esters and higher alcohols are desirable for the role they play in fruity aromas. Some esters, however, are not typical for certain wine styles. Co-inoculation with high ester producers in low temperature fermentations can be problematic. With neutral grape varieties or mediocre quality grapes it can be a fantastic tool to raise quality. In other circumstances, however, it can result in atypical aromas for grape or style. More is not always better.
7. Alcohol tolerance - the yeast least affected by alcohol will out-compete the more sensitive ones.
8. Effect on volatile thiols (passion fruit and grapefruit aromas and flavors) - In 2005, research done by the AWRI revealed that yeast strains differ in their ability to release non-aromatic precursors into aromatic components (volatile thiols) during fermentation[2]. It was also found that yeast strains differ in their ability to convert these "released" thiols into aromatic esters. A particular strain is not necessarily good at both actions. The AWRI has grouped yeasts into good "releasers" and good "converters." For purposes of co-inoculation there is no logic to mixing only "releasers" or "converters."

Using these points as guidelines, Anchor's research continued into 2006 and 2007 investigating co-inoculation of two or more yeasts in different ratios[1]. The purpose was to determine if blends could be created which respected the positive qualities (e.g. reliability and the aroma building properties) of the component strains while creating improved, complex wines. The final results were validated at the AWRI. As a consequence, Anchor now offers two commercial blends under the Anchor Alchemy brand.

Anchor Alchemy I is a proprietary blend of two or more yeast strains in specific ratios. It enhances volatile thiols and esters. It is recommended for cold tank-fermented Sauvignon Blanc (California & Australian style), Chardonnay, Riesling and Chenin Blanc.

Anchor Alchemy II is also a proprietary blend of two or more yeast strains in specific ratios. It enhances volatile thiols and is recommended for cold tank-fermented Sauvignon Blanc (New Zealand, South African, Chilean style), Sémillon and Chenin Blanc.

Anchor also recommends various co-inoculations within their yeast range. If you would like to learn more about these combinations and their recommended uses, please contact us at Scott Laboratories or visit Anchor Yeast's informational website at www.newworldwinemaker.com.

Note:

Anchor cautions against the following practices in regards to co-inoculation:

- The blending of yeasts other than those explicitly recommended by your yeast supplier.
- Blending yeasts from different producers.
- The use of rehydration nutrients when rehydrating Anchor yeast strains. Anchor recommends the use of DAP or complex nutrients during fermentation.
- While yeasts produced by Anchor may be rehydrated together, yeasts from different producers should always be rehydrated separately.

References

[1] King, E., AWRI research data presented at the 13th Australian Wine Industry Technical Conference, Adelaide, 2007.

[2] Swiegers, J.H., AWRI research data presented at the 13th Australian Wine Industry Technical Conference, Adelaide, 2007.