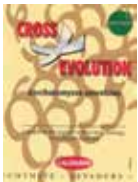




FRUIT DISTILLATE FERMENTATION RECOMMENDATIONS

Distilled fruit spirits are popular alcoholic beverages due to their unique flavors and the wide variety of fruit that can be used to make them. Although fruit spirits can be made from almost any fruit, the most popular are made from plums, cherries, apples, pears, apricots, and quinces. Regardless of the fruit that you are fermenting and distilling, Scott Laboratories has the tools to help you from fruit reception to bottle. The options for fermentation products in this brochure are not meant to be restrictive, but are our best recommendations. Please see our Fermentation Handbook or visit www.scottlab.com for our entire portfolio.

YEAST



CROSS EVOLUTION

S. cerevisiae • hybrid

- Enhances mouthfeel and aromatic complexity.
- This strain is very aromatic and produces esters which are favored by some commercial cider producers.



DV10

S. cerevisiae • *bayanus*

- Lalvin DV10™ was selected in Epernay, France.
- Strong fermentation kinetics.
- Low VA, H₂S and SO₂ production.
- Clean fermentation, without any sensory deviations. Softer palate compared to standard workhorse strains.



EC 118 (PRISE DE MOUSSE)

S. cerevisiae • *bayanus*

- Lalvin EC118™ was selected by the Institut Oenologique de Champagne (IOC) in Epernay, France.
- The original, steady low foamer. Neutral, very clean, robust and reliable.
- Ferments well at low temperatures and flocculates with compact lees.



K1 (V1116)

S. cerevisiae • *cerevisiae*

- Lalvin V116™ was selected by the ICV in Montpellier, France, among numerous killer strains.
- Fresh, floral aromas. Not ML compatible.
- Tolerant of difficult fermentation conditions such as extreme temperature fluctuations, high alcohol and low turbidity.

YEAST



71B

S. cerevisiae • *cerevisiae*

- Known for fermenting fruity rosé wines and semi-sweet whites because it produces long-lived aromas.
- Softens high acid musts.
- Sensitive to competitive factors and may have difficulty competing with wild flora.
- Rehydration with Go-Ferm Protect Evolution® and early inoculation will help Lalvin 71B® dominate in competitive conditions.



43

S. cerevisiae • *bayanus*

- Notable for its powerful ability to restart stuck or sluggish fermentations due to high alcohol tolerance (18%+ v/v) and low relative nitrogen needs.
- Uvaferm 43® gives high-quality sensory results in high Brix red fermentations and helps maintain color, red fruit and cherry characteristics.



D21

S. cerevisiae • *cerevisiae*

- Good fermentation performance even under high temperature and low nutrient conditions. Produces very few sulfide compounds during fermentation.
- Selected for fermenting red wines with stable color, intense fore-mouth volume, mid-palate tannin structure and fresh aftertaste.
- Can also be used with very ripe white grapes that are barrel fermented to develop fresh fruit aromas, volume and acidity.



QA23

S. cerevisiae • *bayanus*

- Lalvin QA23™ enhances fruit for a fresh style.
- Low nutrient and oxygen requirements.
- Positive for cooler fermentations and highly clarified juice.



R2

S. cerevisiae • *bayanus*

- Lalvin R2™ was isolated in the Sauternes region of Bordeaux, France.
- Has excellent cold temperature properties.
- Varietal characters are enhanced by the enzymatic release of bound aroma precursors.



VIN 13

S. cerevisiae • hybrid

- Product of the yeast hybridization program of the Institute for Wine Biotechnology at the University of Stellenbosch in South Africa.
- Cold tolerant with low nitrogen requirements.
- High alcohol tolerance, up to 16.5% v/v.
- Very good thiol releaser and outstanding ester producer.



CVW5

S. cerevisiae • *cerevisiae*

- Works well under low temperatures and low turbidity. Very high ester producer and has the lowest nitrogen demand in the Lallemend yeast collection. CVW5 produces low levels of VA and SO₂.
- Strong fermenter even under difficult conditions.
- May also be used for sparkling and fruit wines.



RHÔNE 4600

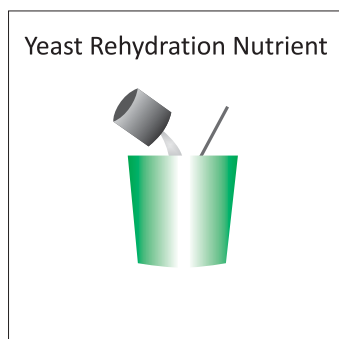
S. cerevisiae • *cerevisiae*

- Lalvin Rhône 4600® has a short lag phase, low nutrient demand and can ferment efficiently at low temperatures.
- Produces high levels of polysaccharides which contribute intense mouthfeel and volume.
- Complex aromatic notes and elevated ester production make this strain an ideal choice for rosé wines and Rhône whites. Useful for blending.

REHYDRATION PROTOCOL

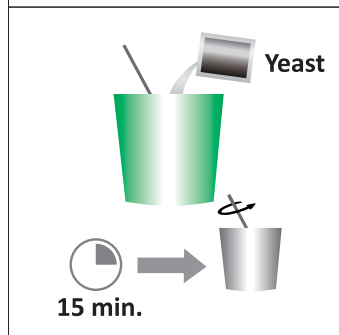
EASY STEPS FOR OPTIMAL YEAST REHYDRATION

Proper yeast rehydration is one of the most important steps to help ensure a strong and healthy fermentation. Normal inoculation for active dried yeast is 2 lb/1000 gal (25 g/hL). When added properly, a 2 lb/1000 gal (25 g/hL) addition of active dried yeast results in an initial cell concentration of 3-4 million viable cells per milliliter of juice. Under favorable conditions, the initial cell population may increase up to 100-150 million viable cells per milliliter of juice before growth stops and alcoholic fermentation begins. The biomass increase is critical for healthy fermentations. When initial sugar levels are high, increased inoculation rates are recommended. When using higher rates, be sure to maintain a ratio of one part yeast to 1.25 parts yeast rehydration nutrient. Careful rehydration, attemperation, and inoculation are all important to help prevent sluggish or stuck fermentations.



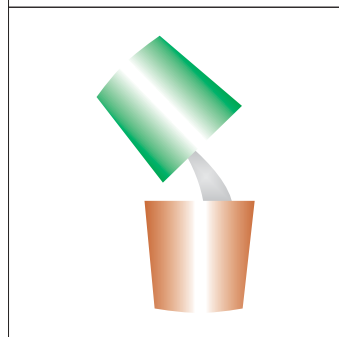
1

Suspend 2.5 lb/1000 gal (30 g/hL) of an appropriate yeast rehydration nutrient in 20 times its weight of clean, chlorine free 43°C(110°F) water. (For example: 2.5 lb rehydration nutrient x 20 = 50 / 8.33 lb/gal water = 6 gal water). If the water temperature is not high enough, the yeast rehydration nutrient may not go entirely into solution. **Important:** if not using a yeast rehydration nutrient, water temperature should begin at 40°C (104°F) to avoid harming the yeast.



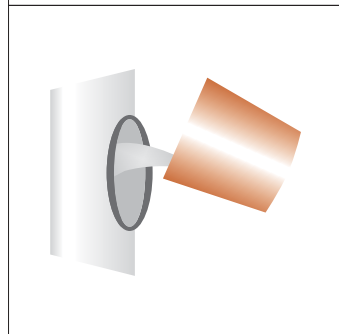
2

Once the temperature of the yeast rehydration nutrient solution has dropped to 40°C (104°F), add 2 lb/1000 gal (25 g/hL) of active dried yeast. Stir gently to break up any clumps. Let suspension stand for 15-30 minutes, then stir gently again. Live yeast populations decline when allowed to stand for more than 30 minutes. **Note:** Foaming is not an indicator of yeast viability.



3

Slowly (over a period of 5 minutes) combine an equal amount of the juice to be fermented with the yeast suspension. This will help the yeast adjust to the cool temperature of the juice and will help avoid cold shock caused by rapid temperature drop exceeding 10°C(18°F). This attemperation step may need repeating for very low temperature juice. Each attemperation step should last about 15-20 minutes. For every 10°C(18°F) temperature difference between the juice and the yeast slurry, an attemperation step must be performed. For example, for a juice temperature of 20°C(68°F) and yeast slurry temperature of 40°C(104°F), two attemperation steps are required.



4

Add the yeast slurry to the bottom of the fermentation vessel just as you begin filling the vessel with juice. This is especially important for large tanks with long filling times or when inoculating with strains that are sensitive to the competitive factor. This will allow the yeast a head start over indigenous organisms.

NUTRIENTS

Depending on the source of your juice, additional nutrients may be required. Spirits made from concentrated fruit juice tend to have lower initial nitrogen levels than those made from fresh press juice, and nutrients should be adjusted accordingly.

» Rehydration Nutrients

GO-FERM

- Go-Ferm® is a natural yeast rehydration nutrient containing a balance of micronutrients.
- Developed to enhance kinetics and to help avoid problem fermentations.

GO-FERM PROTECT EVOLUTION

- Go-Ferm Protect® Evolution is a natural yeast rehydration nutrient developed specifically for problem musts & stuck fermentations.
- Incorporates sterols and polyunsaturated fatty acids (for cell protection) together with vitamins and minerals to help ensure yeast survival, and to help maintain fermentation activity to completion.

» Complex Fermentation Nutrients

FERMAID A

- Fermaid A™ is a complex yeast nutrient blend of inactivated yeast (organic YAN; alpha-amino nitrogen) and diammonium phosphate.
- The inorganic and amino nitrogen blend in Fermaid A is aimed at encouraging a more balanced rate of fermentation.

FERMAID K

- Fermaid K™ is a blended complex yeast nutrient that supplies inactivated yeast, free amino acids, sterols, unsaturated fatty acids, key nutrients and ammonia salts (DAP).

FERMAID O

- Fermaid O™ is an autolyzed yeast nutrient with a high content of organic nitrogen (amino acids). It is formulated without DAP.
- With its organic nitrogen, Fermaid O can help achieve steady fermentations, while limiting temperature spikes.

» Natural Yeast Derivative Nutrients

BOOSTER BLANC

- Booster Blanc® is a yeast derivative nutrient that smooths mid-palate intensity and increases fruit aromas, while diminishing bitterness.
- It can help maintain freshness and aroma stability in spirits that go through MLF.

NOBLESSE

- ICV Noblesse® is a yeast derivative nutrient that contributes to an overall roundness and softness on the finish.
- Can help reduce undesirable aggressive characters or sensations of dryness.

OPTIMUM RED

- Opti-MUM Red™ is a new natural yeast derivative nutrient rich in polysaccharides, which results in a deeper color.
- Provides richer mouthfeel and decreased astringency.

OPTI-RED

- Opti-RED® is a unique inactivated natural yeast derivative nutrient. With a large level of polyphenol-reactive high molecular cell wall polysaccharides, it enhances and intensifies color and allows for better tannin integration.
- May also be added in the last stages of alcoholic fermentation to help round and refine harsh tannins.

NUTRIENTS

» Natural Yeast Derivative Nutrients (Continued)

OPTIMUM WHITE

- OptIMUM WHITE® is a natural yeast derivative nutrient rich in glutathione and polysaccharides.
- Optimizes aromatic intensity and longevity.

OPTI-WHITE

- Opti-WHITE® is a natural yeast derivative nutrient that enhances smoothness, helps prevent browning from oxidation and protects fresh aromas during aging.
- May also be added in the last stages of alcoholic fermentation to help bring out flavor profiles often associated with aging on lees.

ENZYMES

HC

- Scottzyme® HC is a pectinase and hemicellulase blend designed to increase yield, reduce solids and improve filtration.



KS

- Scottzyme® KS is a blend of enzymes designed to create a special product for difficult to settle or hard-to-filter juices.
- Most effective when used early in processing. Customers have reported very favorable results when used to solve “nightmare” filtrations before bottling. **Note:** never use on fruit itself.



PEC5L

- Scottzyme® Pec5L is a highly concentrated pectinase blend designed specifically for pressability, settling and clarification.



SPECTRUM

- Scottzyme® Spectrum is a blend similar to that of KS, but with increased pectinase activity for the most difficult clarification tasks.



TANNINS



FT BLANC

- Scott'Tan™ FT Blanc is a white gall nut tannin specifically formulated for protection from oxidation.
- It helps protect juice from browning by acting as an antioxidant and inhibiting laccase activity.
- May contribute notes of minerality.



FT BLANC SOFT

- Scott'Tan™ FT Blanc Soft is similar to FT Blanc in application, but ciders made with it are also characterized by softness and improved mouth-feel.
- May enhance texture and give a perception of sweetness on the palate.
- May contribute notes of minerality.



FT BLANC CITRUS

- Scott'Tan™ FT Blanc Citrus is a mixture of condensed tannins from citrus wood and gallic tannins.
- It allows for the development of enhanced aromatic potential.
- Also protects from oxidation.



FT ROUGE

- Scott'Tan™ FT Rouge is a blend of highly reactive tannins derived from exotic woods and chestnut.
- Allows for optimal color stability.
- Provides anti-oxidative protection and helps prevent browning.



FT ROUGE BERRY

- Scott'Tan™ FT Rouge Berry is a mixture of condensed tannins from the wood of berry fruit.
- Allows for the development of enhanced red berry characters.
- Promotes color stabilization and prevents aroma oxidation.