VINQUIRY

MCW

Procedures for MCW Freeze-Dried Culture

ORIGIN

MCW is a strain of *Oenococcus oeni (Leuconostoc oenos)* selected for its ability to rapidly complete malolactic fermentation (MLF). MCW is very pH tolerant and is used routinely in wines with pH 3.1 and lower.

The freeze-dried culture has been grown in an apple juice based medium and freeze dried to provide a readily available population for preparing a starter.

STORAGE

Store packets of bacteria in a freezer until ready to use. Remove from freezer and allow to warm to room temperature (72°F) prior to inoculation of starter.

PREPARATION OF JUICE FOR THE STARTER

Obtain the appropriate volume of clean, well settled or filtered juice which has no SO_2 added (see table below). If possible, heat juice to 140°F for 5 minutes. Cool to 72°F. Dilute with water if necessary to bring sugar to approximately 18° Brix. (Use carefully sanitized containers and equipment for all starter preparations).

Add 1 g/gal Oenovit or 3g/gal yeast extract (see Oenovit note below).

pH of juice must be 3.8-4.0. If necessary, adjust with potassium carbonate.

Further pH adjustment is not needed after the first culture buildup is completed. However, when inoculating juices or wines that have a pH below 3.2, it is advisable to condition the bacteria by an intermediate buildup stage at pH 3.4.

INOCULATION OF STARTER

Mix the freeze-dried MCW with the appropriate volume of freshly deionized or distilled water (see table below) at 76-78°F. Allow the culture to rehydrate for 10 minutes, mix again and add to the juice.

After four to eight hours, add 0.25 g/gal of rehydrated active dry yeast. A slow fermenting yeast is recommended (do not use a vigorous SO_2 producing strain such as Prise de Mousse). Keep temperature at 70-76°F.

MONITORING THE STARTER

Check the progress of the MLF in the starter by paper chromatography or malic acid assay. When the malic acid is depleted, the bacterial population is at nearly full growth and is ready to use.
At pH 3.8-4.0 all bacteria multiply rapidly, including indigenous Lactobacillus and Pediococcus, so cultures should be monitored for indications of spoilage organisms.

When monitoring by microscan, young cultures of *O.oeni* will be made up of pairs and short chains of cells. Full growth cultures will contain larger numbers of cells in longer chains (6-20 cells).

Additional starter can be propagated by expanding the finished starter tenfold or it can be used as a direct inoculum into production lots.

INOCULATING WITH THE MCW STARTER

Inoculate at the completion of primary fermentation to avoid risks of spoilage.
If MLF occurs during primary fermentation, it should be kept in mind that an active population of ML bacteria in the presence of sugars (as with a sluggish fermentation) can produce spoilage quantities of acetic and lactic acid from the sugars.

Recommended inoculation volume, post primary fermentation: 2-5%.

STARTERS FOR FINISHED WINES

When fresh grape juice is not available, use 1/10 the amount indicated in “Volume of Juice” of a mixture made up of 50% wine, 25% apple juice and 25% water. Follow other instructions for pH adjustment, inoculation and monitoring. When MLF is complete, expand by doubling the starter volume with the wine. Continue to expand until the starter volume is 5% of the amount to be inoculated. Wine to be used must have less than 10 ppm free SO_2 and low total SO_2.

OENOVIT

Oenovit Malolactic nutrient contains amino acids, peptides, vitamins and minor growth factors to stimulate growth of malolactic bacteria. Available in 50g packages to be added to *starters* at a rate of
1 g/gal.

REHYDRATION OF THE MCW:

Packet size	Volume of Water	Volume of Juice
2 g	20 ml	5 gal.
10 g	100 ml	25 gal.
40 g	400 ml	100 gal.
120 g	1200 ml	300 gal.