# CARBONIC MACERATION
## May 8, 2008

Carbonic Maceration is a process that is occasionally used by experienced winemakers to accomplish any one of three different but meaningful outcomes.

First, it is the process employed when making *"Nouveau Beaujolais"* which is an early, simple wine that has become very popular among French winemakers and many wine drinkers around the world. It is released on a specific date in November and is exported around the world where people await its arrival with anticipation.

This type of wine is not well established and although considered by many to be unstable, with a short shelf life, it is, nevertheless, a big money maker. The wines are usually quite thin and often a little sweeter than longer finished wines, lower in alcohol but very aromatic. Usually they are red, fruity wines that are considered to be an early indicator of what that years normally fermented vintages may be like when they will be released.

Second, Carbonic Maceration may be used to reduce acidity in wine.

Third, Carbonic Maceration has the ability to increase the fruit flavour and bouquet in the wine.

So, if one wishes to make a *Nouveau Beaujolais*, to reduce acid and or, to generate increased fruit presence, Carbonic Maceration is a prime consideration.

When Carbonic Maceration first came to mind it was called a simple process but the explanation was an extremely complicated one including very detailed sketches on how to proceed. That presentation was made by a representative from Vineland Station in Ontario. Following that presentation another Niagara winemaker said it was so easy that one could do it in a garbage bag. Well, maybe it is a little more involved than that but it can be done quite readily.

In essence, it is accomplished by storing grapes, probably still in bunches or at least gently removed from the stems, in the absence of air, followed by the

usual wine making fermentation. The essential feature is that the *uncrushed* grapes that have been washed are held for several days in a container from which the air (oxygen) has been removed. During this holding period, the enzymes present in the fresh grapes will reduce the acidity and change the flavour. The "carbonic macerated" grapes are then crushed, fermented and pressed in the customary manner.

The wine produced should have a special bouquet and softer taste that does not require aging but is ready for consumption right after fermentation is completed.

So, what equipment does one need to complete Carbonic Maceration?

A. An airtight container:

It should be kept in mind that the surface coming in contact with the wine should be of food grade materials so that probably rules out garbage bags. It must have an opening large enough to deposit and then remove the grape clusters with ease. The closure of the container should also be reasonably airtight as some light pressure helps stimulate the process. One could use a pressure gauge and an airlock that is a bit heavier than normal to help generate the pressure.

B. Vacuum source:

Some means of removing the air (oxygen) from the container.

1) If you have an adequate supply of carbon dioxide or nitrogen gas you could use that to flush out the air from the container.
2) Only 21% of air is oxygen so one can use up the oxygen by burning a candle in the container.
3) Draw a vacuum from the container using something like a vacuum cleaner.

What is the Procedure?

1. Wash the grapes.
2. Pack the grape clusters in the container. Dissolve ¼ teaspoon of metabisulfite in ½ cup (125 ml) water, for every 20 lbs. (1 gram / 10kg.). Spray the bisulfite solution on the grapes as they are inserted.

3. Remove the oxygen or insert the CO2 and close the container
4. Insert the pressure gauge if available. If not, a balloon will suffice. Add the weighted fermentation lock.
5. Place the container at the desired temperature (15 to 35degrees).
6. Remove the contents after 4 to 14 days of treatment.
7. Crush, add a yeast starter and proceed with normal fermentation.

Other Options:

One can do a partial Carbonic Maceration to accomplish desired results of reduced acidity, increased fruit and aroma. Simply do the process on a portion of the grapes and then add it back into the main body of your fermenting must.

It is not a simple process but worthy of consideration for the experienced winemaker. It can, as well, be simplified. Some winemakers do it by merely covering a bucket with Cling Wrap. Some do it with white wine but gently remove the stems by hand trying not to break the skins so that no stems are present.

Here is an opportunity for some experimentation and could make an interesting and fun group club project for consideration.

## APPENDIX

To help improvise the equipment required for the process, a few possibilities follow:

A. Container

(a) Open mouthed glass jar (3 or 5 liter minimum capacity)
(b) Pressure cooker
(c) Strong food grade plastic bag
(d) Plastic drum or bucket (Food grade)

B. Vacuum source

(a) Hand operated vacuum pump
(b) Water ejector type filter pump
(c) Motor driven vacuum pump (vacuum cleaner)
(d) Candle

C. Gas

(a) Carbon dioxide generator (baking soda or calcium carbonate + citric or tartaric acid + water)
(b) Dry ice
(c) Compressed gas
(d) Active fermentation