BLENDING THE LIQUID TO BE GRADED

All full-bodied wines or sweet wines, must wines, and sweet cider have to be blended with water or apple juice.

The rule is if there is any doubt whether to blend or not, do so!

Wines that are blended with a spirit, such as the Banyuls wines Malaga, Madera, Moscato and the malt bears, must be blended to a quarter. The vermouths and other similar products only have to be blended to two thirds with water.

To ensure the blending process works correctly fill a pipette with the blending liquid up to where the pipette starts to widen. Leave the pipette to drip in a suitably dry container.

Then fill the container with pure water 1:2, 1:3, 1:4 depending on whether you want to blend to a half, a third or a quarter.

Mix and boil as described beforehand.

To avoid froth forming when titrating the beer and the must wines put a few drops of oil or a few grains of stearine or tallow into the liquid before you put the thermometer in.

Maintaining the equipment

You are strongly recommended to empty the boiler and thoroughly dry it immediately after each operation. Never leave any wine in the boiler as this would dry and cake in the coil and the equipment would take longer and longer to function as time goes by and in the end it would not work at all.

If it takes much longer to bring the liquid to the boil then the boiler is undoubtedly caked and will have to be thoroughly cleaned. To clean it boil some water in it. When the water has come to the boil pour in about 3 grams of caustic soda in tiny pieces. Do not put the thermometer into this solution. After three or four minutes boiling empty the boiler, rinse it a number of times, then repeat the operation again and again until the water comes out almost completely clear. In the end dry the boiler very well.

To ensure that the spirit lamp works perfectly fill it with a very strong spirit and make sure it is closed tightly. Empty it every so often and fill with fresh spirit.

Every so often remove the soot that settles in the part of the coil that goes through the chimney. If the soot is not removed the equipment will not draw properly and it will take longer to carry out the operation.

The wick must always be kept in perfect condition, at the right height and filled with cotton along the whole length.

The ebulliometer is used to measure the exact alcohol content of wines and alcoholic liquids. It has been manufactured to allow the operator to obtain exact measurements and to make the operations easy provided the recommendations are adhered to.

OPERATING METHOD

Pour some water into the boiler up to the ring that is fixed to the bottom of the boiler. Screw the lid with the thermometer onto the boiler and ensure that the mercury is all in the thermometer bulb. If it is not proceed as follows:

GETTING THE MERCURY ALL INTO THE BULB

The mercury may not be all in the thermometer bulb but broken into bubbles along the thermometer shaft due to knocks during transport. In this case the thermometer will not work properly. As such unscrew the thermometer holder and turn it upside down so that the mercury bulb is at the top. Tap the thermometer until all the mercury has fallen to the bottom of the shaft (A). When all the mercury has fallen to the bottom turn the thermometer upside down again (thermometer bulb at the bottom) and slightly tilt it so that the mercury runs down the shaft into the bulb (B).

Boil the liquid. When the steam starts to escape from the hole in the cooler the mercury column will rise and then settle. Now unscrew the locking nut that locks the scale to the equipment and slide the scale so that the "0" mark matches the tip of the mercury column. Then screw the locking nut tightly to lock the scale into position.

To be safe, before you blow out the spirit lamp carefully check again that the "0" reading matches the tip of the mercury column because sometimes there is some shift in the "0" reading just as the screw is tightened. The goal here is to obtain an exact "0" reading, which may vary depending on weather conditions. However, once it is set you can quite easily carry out two or three hours work without having to reset the "0" reading.

The second part of the operation is to establish the alcohol content of the liquid to be tested. Proceed as follows:

a) Unscrew the lid and remove the thermometer;
b) Empty the water and rinse the boiler with a little of the liquid to be tested, then empty again. Ensure that you have completely emptied the boiler;
c) Fill the boiler with the liquid you want to test up to the top ring that is fixed to the inside of the boiler itself. Remove any excess liquid using the pipette in the equipment;
d) Replace the thermometer in its correct position and once again check that the mercury is set at the "0" reading;
e) Fill the cooler with cold water;

f) Light the spirit lamp. This lamp must be full of a 90° spirit to obtain fast and exact operation.

After about three minutes the mercury column will rise and settle. At this point read the alcohol content of the tested liquid.

In order to check the amount of alcohol in wines using an ebulliometer, and to the highest degree of accuracy allowed by this instrument, certain practical steps should be taken to avoid getting wrong readings.

First and foremost the water must be left to boil for about a minute after the mercury has settled. If the mercury has not settled perfectly on the "0" reading the whole scale will be wrong.

On a clear day without any wind you can use this equipment for two or three hours without having to reset the "0" reading. However, if the weather changes greatly after you have set the "0" reading and the wind picks up or there is a storm then it is wise to reset the "0" reading every hour or two at the most because the change in barometric pressure will move the "0" reading and thus upset the whole scale.

When you have obtained the exact "0" reading proceed as described to check the alcohol content of the wine. This should only be done after you have screwed the cooler onto the equipment and carefully blown into the pipe above the equipment to ensure that the seal is tight. If the seal is not tight and steam leaks out at the top of the cooler the equipment will give faulty readings.

If there is a leak clean the seals or change them once you have carefully screwed down the top of the equipment to ensure there is no further leakage.