

Cromoenos®

MEASURING THE PROBABLE COLOR OF RED GRAPES DETERMINING THE PHENOLIC RIPENING



Colorimetric process for determining the color of wine from the grapes™

SPANISH PATENT ES 20002375 (29/11/2007)

EUROPEAN PATENT EP 1324016 (14/11/2007)

U.S.A. PATENT US 7,301,635 (27/11/2007)

Some people say it is not possible to measure the color of grapes, that there are no methods available to measure the color in a reliable manner, that can be compared with the values of intensity of color of produced wines.

We measure the color of grapes in a precise and reliable manner. And what do we measure?

We forecast the color of the wine produced from the analysed grapes, as the « probable degree » of the grapes forecasts the alcoholic strength of the wine obtained from the same, i.e., when we say that some grapes have 15 points of color, we mean that the color of the wine obtained, after alcoholic and malic-lactic fermentation and after cryostabilisation and sulphur correction, will have 15 points of color or 1.5 of Intensity of Color.

We need no sophisticated equipment, and we get the results in SEVEN MINUTES, from the moment of the trailer entering the reception Labo.

We measure the Color of the grapes, the stable color, the color that remains in the wine, which is the color that counts and is paid for. Therefore, **with this method, the grapes are paid exactly what they are worth of.**

You need not to wait till the fermentation is completed to know the color you are going to obtain. You may **start to take decisions before the grape harvest**, thereby improving the management of your wine cellars.

We measure the Phenolic Ripening Rate (PRR) directly, understood as the value from which the grapes are very close to the maximum value of Probable Color, and where the astringency and the verdancy of peel tannins are close to the minimum value. As a guide value, we can assume that a PRR < 1.50 means that the grapes have reached their optimum condition of phenolic ripening, and this is the first decisive datum to fix the date of starting the grape harvest, i.e., you must wait till this value is reached, in order to avoid those wines that, though eventually very coloured, may be astringent and with very green tannins.

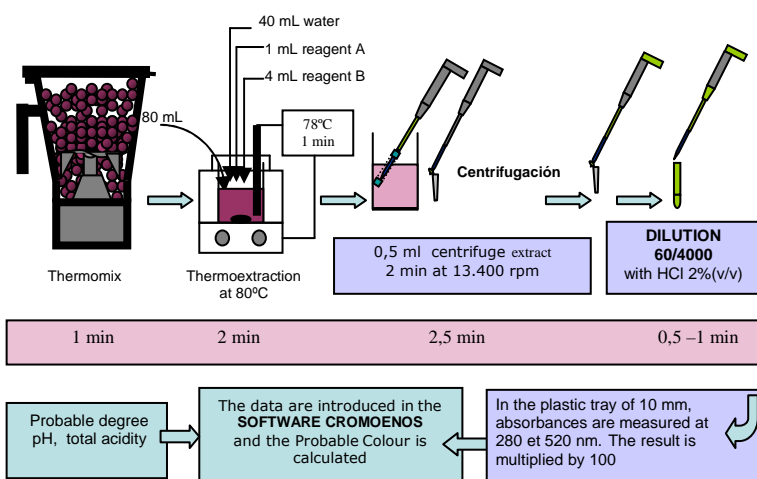
APPLICATIONS OF PROBABLE COLOR MEASURING AS AN ANALYSIS TOOL IN LABO

1^a.- CONTROL OF RIPENING : Identification of the optimum moment for grape harvest. Grape selection. Besides the Intensity of Color of the future wine, this method gives the Phenolic Ripening Rate, that allows to fix the grape harvest date.

2^a.- CONTROL OF COLOR AT RECEPTION : For sorting and evaluation purposes, in order to arrange for payment according to points of color.

3^a.- PREDETERMINATION OF COLOR IN VINIFICATION : To make a fine selection of materials, according to different final wine qualities.

4^a.- CONTROL OF COLOR IN AGRONOMIC TESTS : With this method, we have a most useful tool to follow up a large number of agronomic experiments, without the need of micro-vinifications. With the help of GPS, we can even know the influence, by harvested rows, of any variable (type of soil, of pruning, of fertilisers, of irrigation, etc.) on the color.



The analytical method is easy. It covers a hot extracting with the help of Cromoenos' reagents and a subsequent cleaning by centrifugation. Then, a dilution is performed and the absorbances are measured in the spectrophotometer at wavelengths of 280 nm and 520 nm. At the same time, the probable degree, the pH and the total acidity are analysed, and all five variables are introduced in the calculation software, where the variety has been previously selected, and so we get the Probable Color.

EQUIPMENT REQUIRED

01.- Thermomix-type triturator	06.- Micro-pipette of 10 a 100 μ L, of 500 a 5000 μ L
02.- Cromoenos Thermoextractor	07.- PMMA trays of 1,5 mL, 10 mm
03.- Centrifuge	08.- Eppendorf tubes of 1,5 mL
04.- Spectrophotometer UV-Vis.	09.- Cromoenos Kit of reagents
05.- Cromoenos Software	10.- Cromoenos sample-taking device



Grape extractor
Vineyards of Aldeanueva

Grape extraction and suction
Cooperative of Santo Cristo de Magallón

Labo of Analysis of Color and Sanitation
Vineyards of Aldeanueva

Every analytical or measuring method has a degree of precision and accuracy. From the start, our philosophy advocates a grape evaluation method that must be as accurate as possible, since it has been developed to contribute solutions and not to raise controversy. And this has been our project : First of all, precision ; then, rapidity. We have developed the thermoextractor to achieve an appropriate extraction of the colouring material, and we have invented our own system of stalk-removing and sample taking, that extracts and suctions the loose grapes. Furthermore, we have patiently developed a software including the features and figures concerning the different varieties of red grapes, as the color not only depends on the contents of colouring material in the grapes, but on other variety-bound substances too, which obliges us to apply a specific measuring, in order to determine the probable color.

This system was born from the firm conviction that it should be of use for knowing, in a reliable and efficient manner, how the natural factors, the pruning systems, the irrigation systems and the farming techniques may influence the production of color, in order to produce quality concentrated grapes, with the highest profitability.

In case you need any additional information, please, visit www.bioenos.com or contact us.



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