



DEVELOPMENT AND CHARACTERIZATION OF NEW FERMENTED BEVERAGES OF LOW ALCOHOLIC GRADUATION FROM STRAWBERRY

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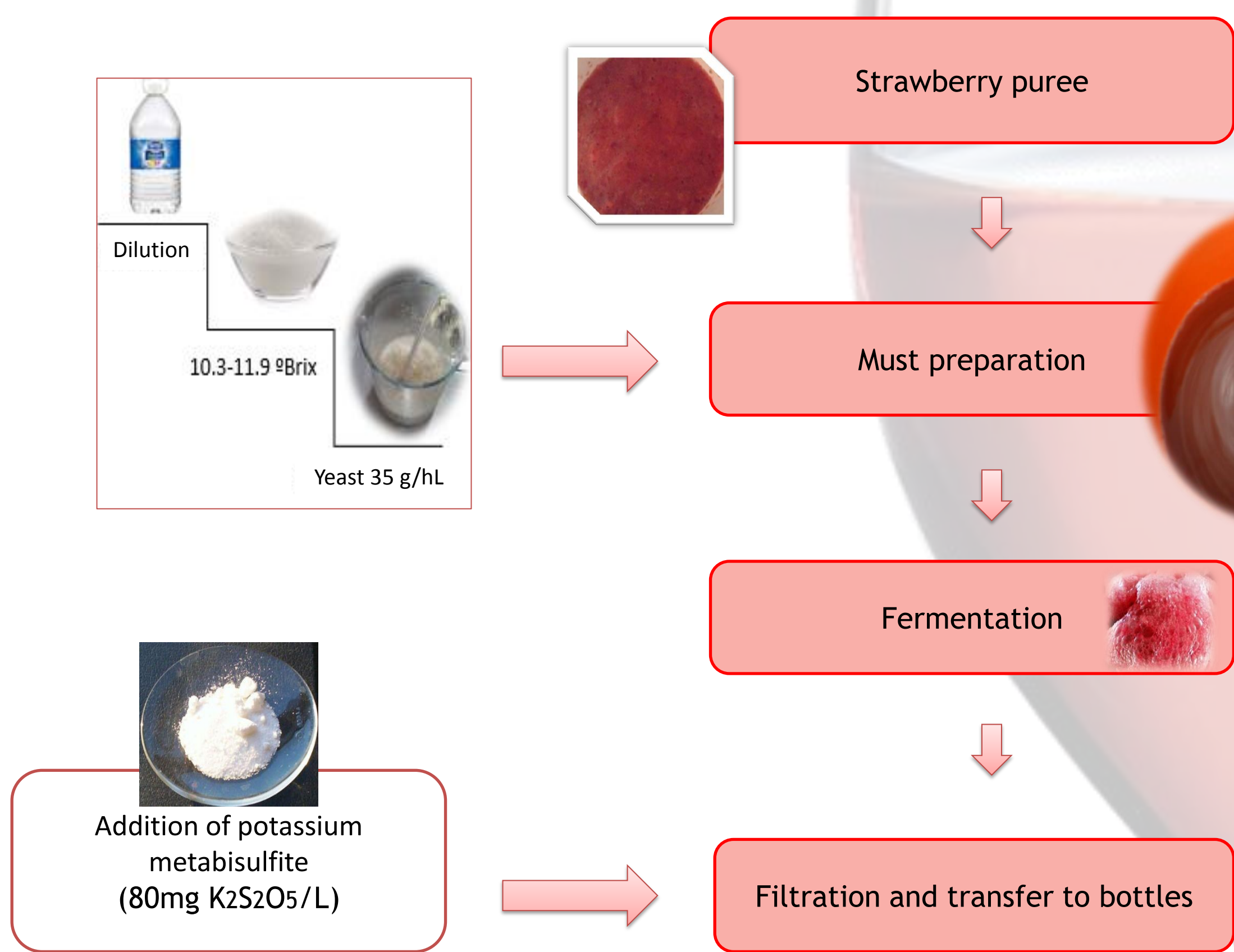
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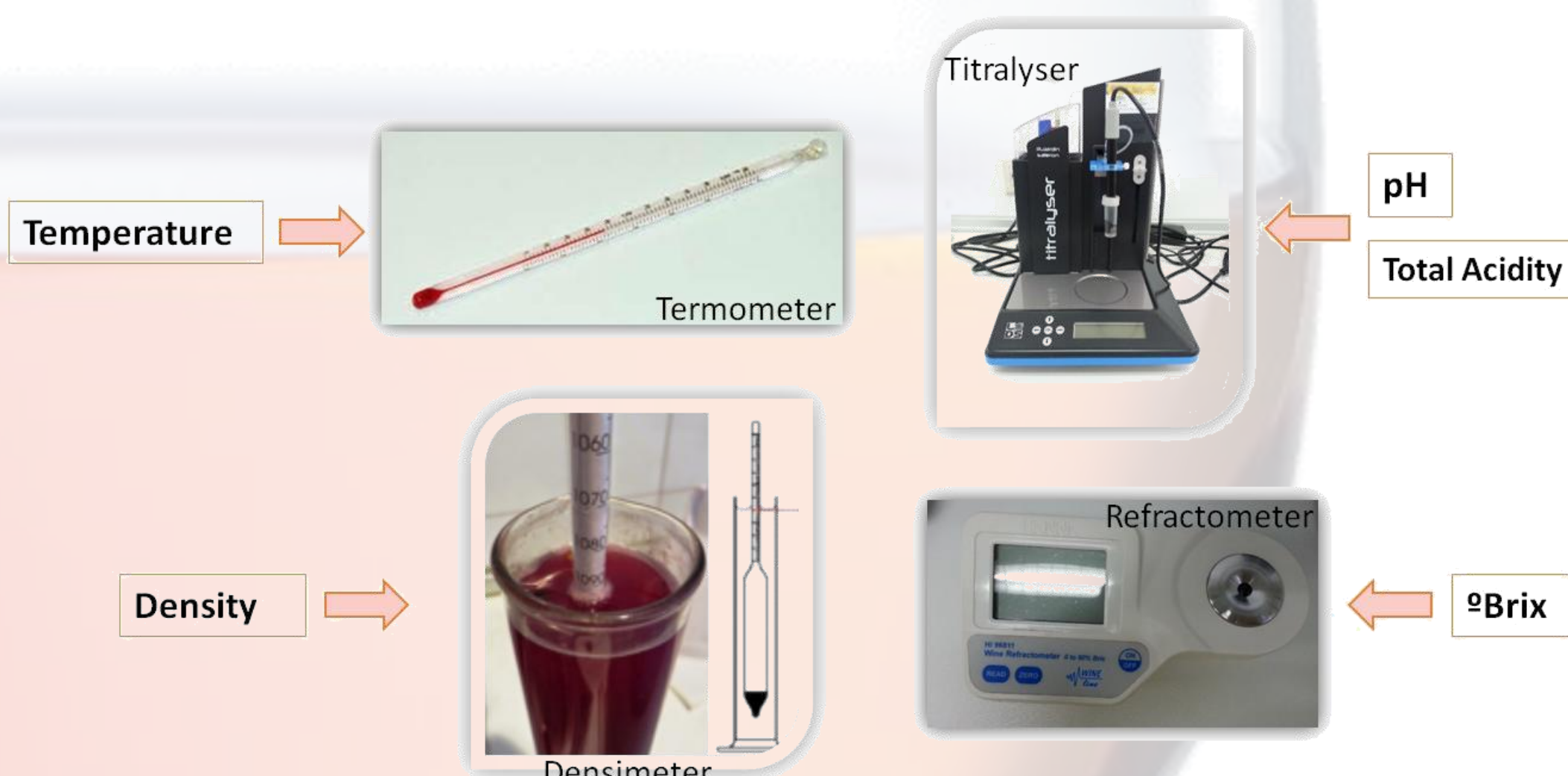
Introduction

R.D. 1650/1991, of November 8, on the Technical-Sanitary Regulation for the elaboration and sale of fruit juices and other similar products, in its article 2 of Title One, defines the puree, pulp or cremogenate as follows: *Puree, or fruit pulp, or fruit cremogenate, is the fermentable but not fermented product obtained by grinding or sifting the edible part of whole fruits or peeled without removing the juice.* Also in the same article defines the *puree, or concentrated fruit pulp, or fruit cremogenate as: the product obtained from the puree, the pulp, or the cremogenate of fruit eliminating through physical procedures a part of the water that constitutes it.* These purees of strawberry have been the raw material chosen for the development of a new product of added value, obtained by fermentation.

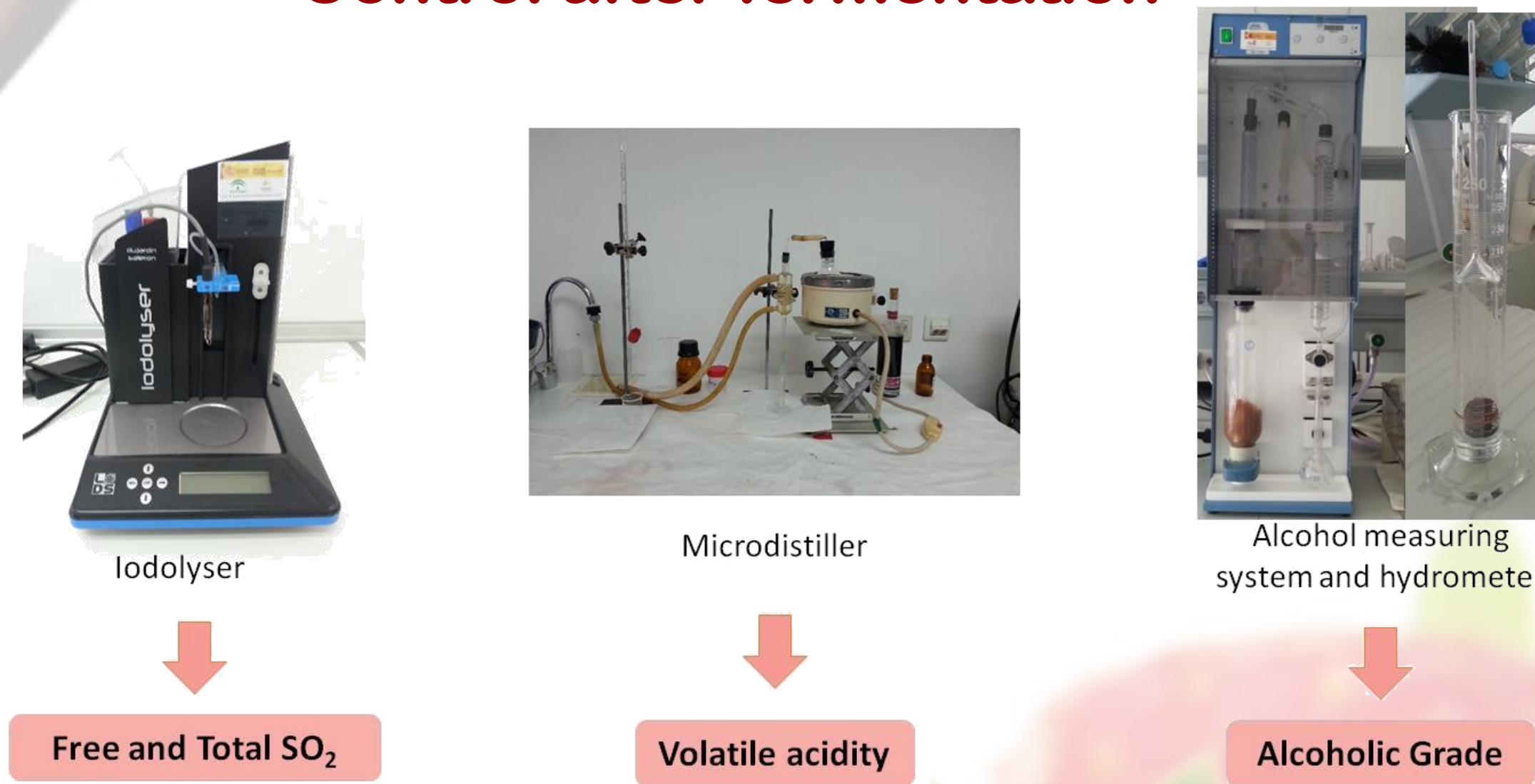
Product development



Daily monitoring of fermentation



Control after fermentation

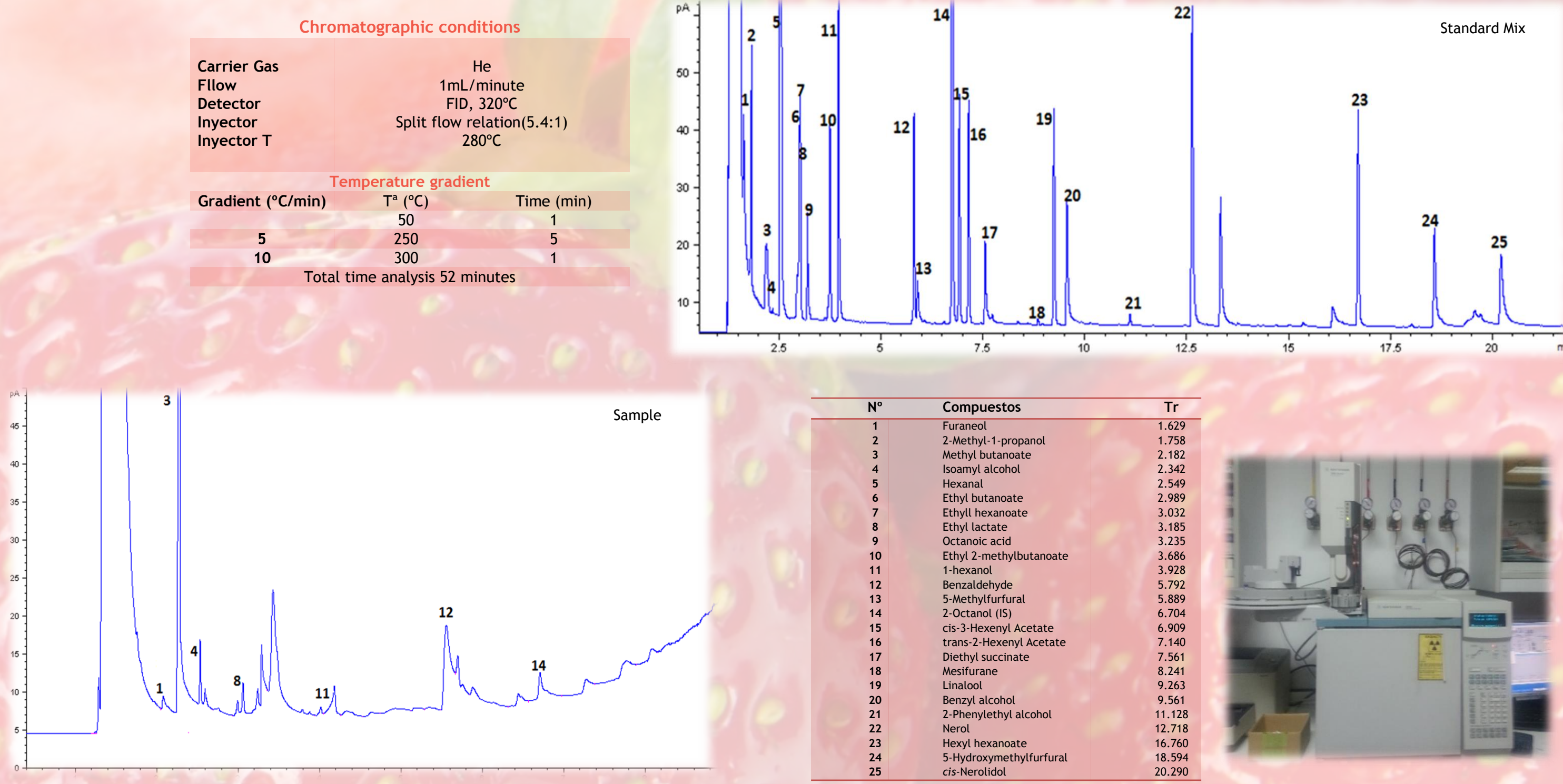


Characterization of the finished product

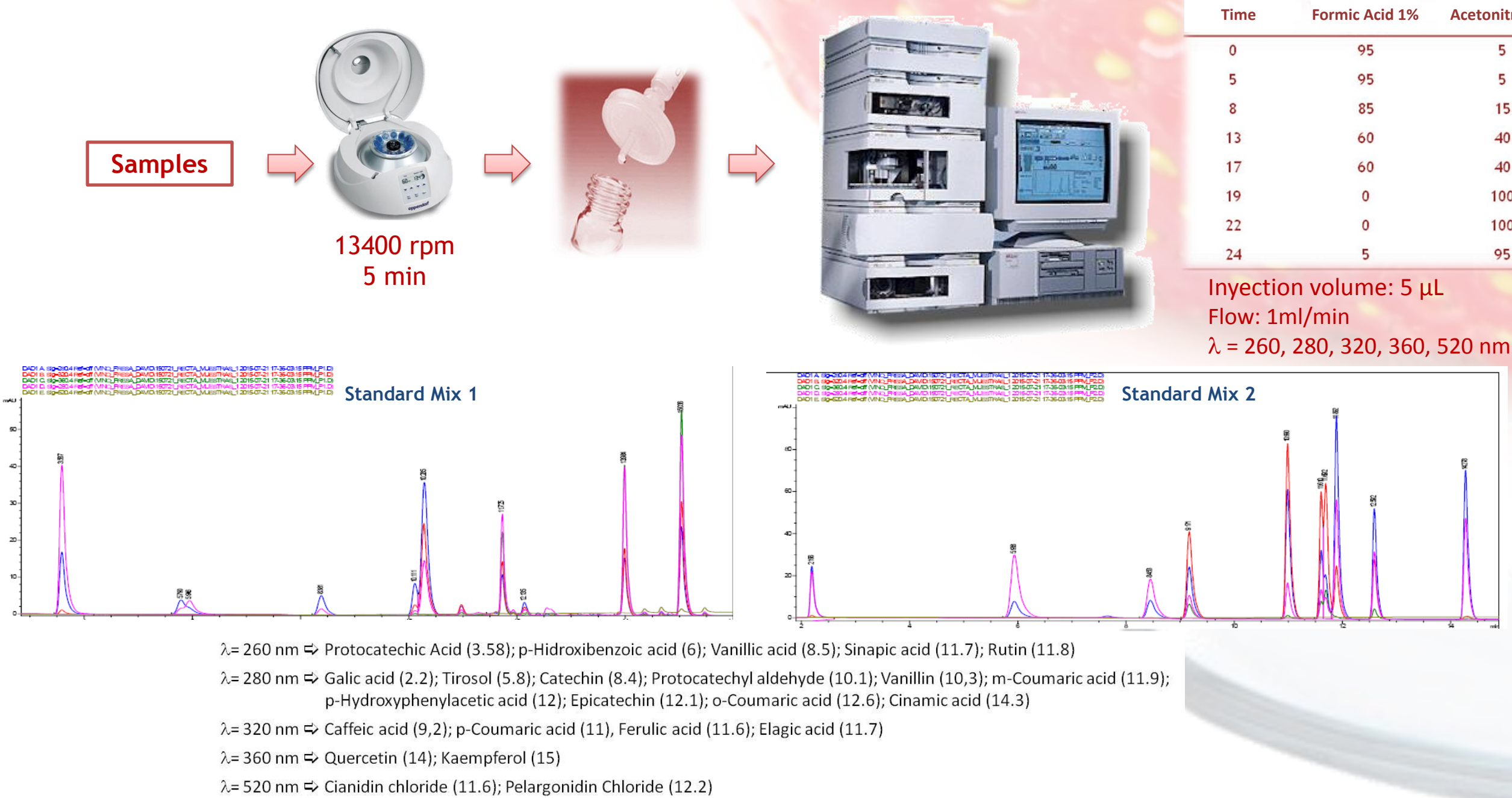
Physical-Chemical Parameters

Physico-chemical parameters	λ (nm)	Standar	Equation	Values
Colour intensity (IC)	420,520,620	-	$IC = A_{420} + A_{520} + A_{620}$	1,04225
Tonality (T)	420,520	-	$T = \frac{A_{420} (amarillo)}{A_{520} (rojo)}$	1,42525
Wine colour (WC)	520	-	$WC = A_{520}$	0,3875
Color fade-resistant (CD_{502})	520	-	$CD_{502} = A_{520}^{502}$	0,28775
Free antocyan color (AC)	520	-	-	0,1
Chemical age of wine (CAW)	520	-	$CAW (\%) = \frac{CD_{502}}{WC} \cdot 100$	73,79875
Total polyphenols	725	Galic acid	-	536,18175 mg/L
Total polyphenols Index (IPT)	280	-	-	14,0425
Flavonoid content	510	Catechin	-	85,5375 mg/L
Total anthocyanins	520,700	-	$AT \left(\frac{mg}{L} \right) = \frac{A \cdot F \cdot D \cdot PM \cdot 1000}{\epsilon}$	4,711 mg/L
Condensed tannins	640	Catechin	-	10,42075 mg/L
Antioxidant activity	515	Trolox	-	1,0305 mM TE
Alcoholic grade	-	-	-	6.2 °
Free SO_2	-	-	-	23.8 mg/L
Total SO_2	-	-	-	88.2 mg/L
Total acidity	-	-	-	5.5 g/L Tartaric acid
pH	-	-	-	3.5
Volatile acidity	-	-	-	0.70

Volatile compounds profile



Profile of phenolic compounds



From the twenty-three phenols analyzed, only eight compounds (shown in the table) were identified and quantified in the elaborated wines.

Compuesto	Retention time	mg/L	SD
1. Galic acid	2,2	4,49	0,64
2. Tirosol	5,8	10,08	0,53
3. p-hidroxibenzoic acid	6	7,43	1,90
4. Catechin	8,4	15,74	0,73
5. Caffeic acid	9,2	22,60	1,26
6. Clantidin chloride	11,6	27,15	1,52
7. m-coumaric acid	11,9	8,24	0,65
8. Pelargonidin Chloride	12,2	11,19	0,92

