

Pulsed Electric Fields for white wines production: Investigation on sensory and physico-chemical characteristics of Arinto and Moscatel wines

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Pulsed electric field (PEF) was studied at a pilot scale winery for the production of white wines from Arinto and Moscatel de Setúbal varieties. The PEF treatment was initially applied to the grapes before pressing for juice extraction, and then once again to the finished wines before bottling, for wine stabilization. The effects of both PEF treatments on the sensory and physico-chemical parameters of the wines were assessed. Sensory triangle tests confirmed the absence of a significant impact on colour, odour and taste of wines with both PEF treatments applied during vinification. With respect to physico-chemical parameters, pH, total acidity, and CIE L* colour coordinate were not affected by PEF. The PEF extraction method caused an increase in the total phenols, non-flavonoid phenols, turbidity, and CIE b* colour parameter in the finished wines. Overall, the sensory also revealed that the wines submitted to PEF treatments were acceptable in terms of colour, smell, and taste. This study demonstrated the efficient application of PEF at a pilot scale level, with retention of the original quality properties of both white wines.

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