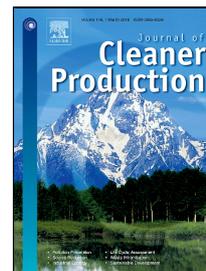


# Accepted Manuscript

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PII: S0959-6526(18)30365-2  
DOI: 10.1016/j.jclepro.2018.02.057  
Reference: JCLP 12004  
To appear in: *Journal of Cleaner Production*

Received Date: 20 December 2016

Revised Date: 02 February 2018

Accepted Date: 06 February 2018

Please cite this article as: António A. Martins, Ana R. Araújo, António Graça, Nídia S. Caetano, Teresa M. Mata, Towards Sustainable Wine: Comparison of two Portuguese Wines, *Journal of Cleaner Production* (2018), doi: 10.1016/j.jclepro.2018.02.057

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Amount of words? 13830

## Towards Sustainable Wine: Comparison of two Portuguese Wines

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### Abstract

A correct definition of the most adequate strategies and/or course of action to improve the sustainability of the wine industry must start with an evaluation, as objective and accurate as possible, of the sustainability performance of its products and processes. The main goal of this work is to perform a comparative sustainability evaluation of two Portuguese wines: a high market value “terroir” wine produced in small quantities using grapes from a single vineyard, and a branded wine with lower market value produced in large quantities using grapes from various regions. The evaluation follows a life cycle perspective and is based on seven sustainability indicators, selected taking into account the main issues pertinent to the wine industry. The functional unit is 0.75 L of wine produced that is the most common capacity of the wine bottles. The environmental and economic information used for the evaluation is mainly primary data obtained from the company, and complemented whenever necessary with secondary data from the literature or life cycle inventory databases. Results show that the main difference between the two wines are their water intensity and wastewater generated, being the values of the branded wine more than double those of the “terroir” wine, which is attributable to differences in the winemaking process, in particular the need to remove the SO<sub>2</sub> added in the branded wine production. The calculated values for the carbon emissions are in good agreement with literature works. Some recommendations for improvement of the process sustainability are given.

**Keywords:** Indicators; Life cycle assessment; LCA; Sustainability evaluation; Portuguese “terroir” and branded wines

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