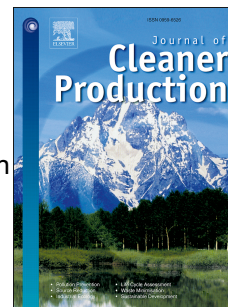


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Determining the carbon footprint of indigenous and introduced grape varieties through Life Cycle Assessment using the island of Cyprus as a case study

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3

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10 **

11 **Abstract**

12 EU policies and the recent Paris agreement urge for a drastic reduction of greenhouse
13 gas (GHG) emissions to prevent a temperature rise above 2 °C at the end of the
14 century. Global viticulture covers more than 4.6 million hectares (ha) of land, with a
15 major part of the acreage in the semi-arid Mediterranean part of the EU, and needs to
16 adapt to the new policy environment. The aim of the study was to determine the
17 product carbon footprint (PCF) of indigenous and introduced grape varieties through
18 Life Cycle Assessment (LCA) using as a case study 90 vineyards on the
19 Mediterranean island of Cyprus. PCF determination was based on the International
20 Organization for Standardization (ISO) protocols for greenhouse gas emissions and
21 Intergovernmental Panel on Climate Change emission factors, with a system
22 boundary from the vineyard to the winery/ market door. We took into account for the

** Abbreviations: Ammonia (NH₃); CO₂-equivalents (CO₂-equiv.); Greenhouse Gas (GHG); Hectares (ha); Horsepower (Hp); Intergovernmental Panel on Climate Change (IPCC); International Organization for Standardization (ISO); Life Cycle Assessment (LCA); Million Tonnes (MT); Nitrous oxide (N₂O); Nitric oxide (NO); Product Carbon Footprint (PCF).

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