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Long-term application of the organic and inorganic pesticides in vineyards: Environmental record of past use

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## ACCEPTED MANUSCRIPT

1	Long-term application of the organic and inorganic pesticides in vineyards: environmental
2	record of past use
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24	Abstract
25	Areas such as Douro Demarcated Region (Portugal), where vineyards are frequently located on
26	steep slopes of narrow valleys, can be particularly sensitive to runoff and erosion processes. These
27	particular conditions are expected to enhance the transport of pollutants, acting as a potential
28	source of contamination to freshwater systems. The intense vine cultivation in this region includes
29	decades of pesticides application, that have resulted in the accumulation of these chemicals and

- 30 its degradation products in the vineyards soils and sediments. Residues of several pesticides
- 31 related to agricultural activities were found in soils, with older vineyards showing higher levels of
- 32 Cu and banned insecticides (such as DDT). The metabolite 4,4-DDE was the compound found at

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