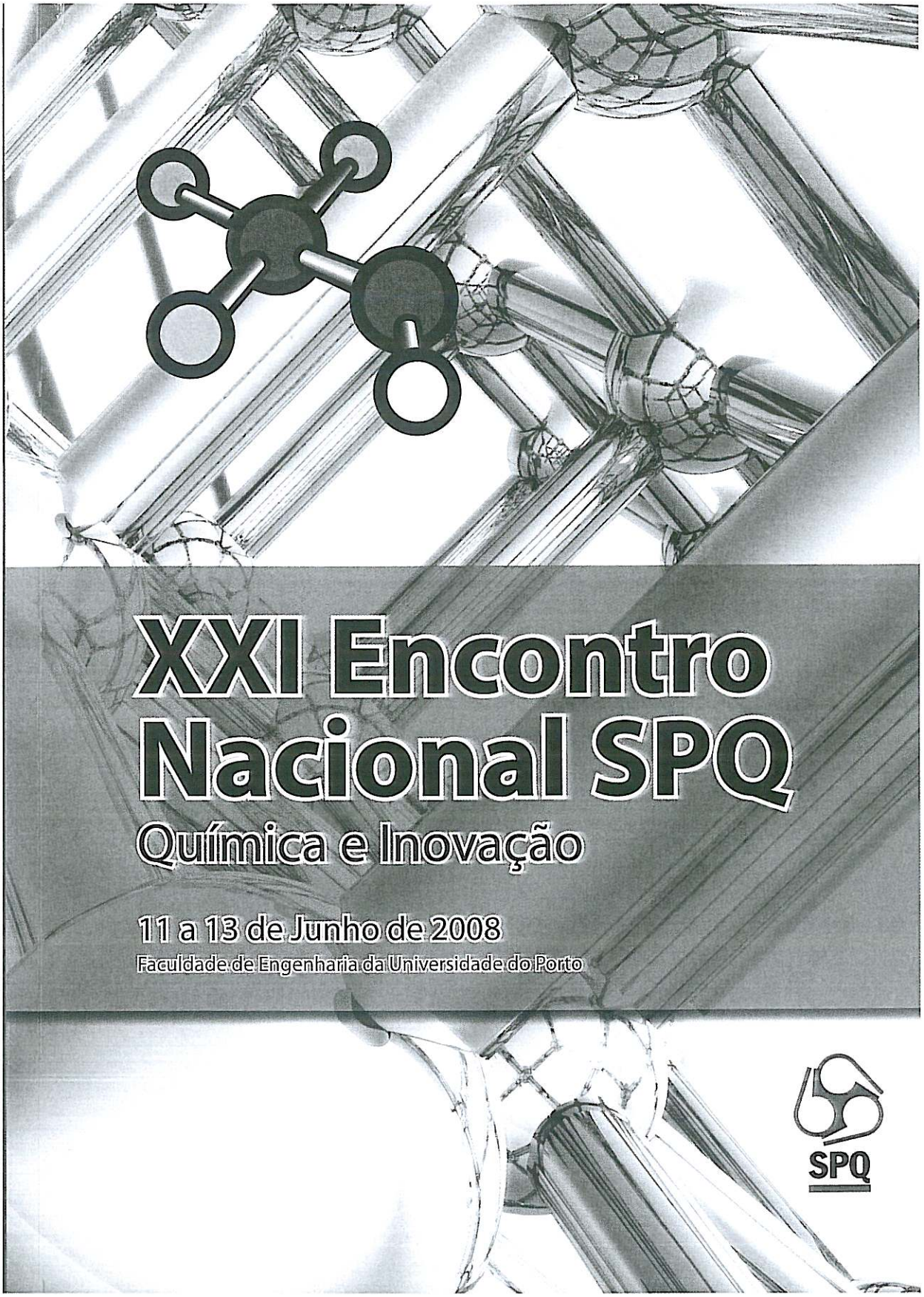

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EVALUATION OF THE ANTIOXIDANT CAPACITY OF EDIBLE WILD MUSHROOMS BY CYCLIC VOLTAMMETRY

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The problems of oxygen metabolism in humans constantly attract the attention, especially now that is obvious that the excess of oxygen and its reactive species cause radical-chain oxidation processes in cellular tissues, resulting in fast aging, cell destruction and incurable diseases. Cells are equipped with several defense systems which act through a variety of mechanisms, one of those is the protection through low-molecular weight antioxidants, like phenolic compounds [1]. Edible plants constitute a major nutritional source of these natural products. Fruit bodies of mushrooms play an important role as a source of bioactive compounds with medicinal value [2].

The aim of this work was the evaluation of the antioxidant capacity in six species of edible wild mushrooms, *Agaricus silvaticus, Coprinus comatus, Lactarius deliciosus, Leucopaxillus giganteus Macrolepiota procera Sarcodon imbricatus* from the region of Trás-os-Montes, through cyclic voltammetry.

Cyclic voltammetry (CV) measurements were performed on an Autolab PGSTAT 302 with a typical three electrode cell with a platinum or glassy carbon disk as working electrode. The voltammograms were acquired at 0 to 1.8 V.

In the first stage the experimental conditions used in the voltammetric studies were optimized, with better results for MeOH / acetate buffer 0.1 mol dm^{-3} / $NaClO_4$ (70:28:2) solutions, either at pH 4 or 7. For the working electrode glassy carbon electrode showed a greater current density.

The CV of the mushrooms extracts showed the existence of an irreversible anodic wave at 0.9 V, similar to all extracts, which indicates analogous composition in electroactive species. Additionally, some mushrooms presented anodic waves at 0.4 and 0.6 V, indicative of greater reducing power.

Based on $E_{p/2}$ values, which reflects the specific reducing power of components with similar potencial [1], it was found that the extract with higher reducing power was *Sarcodon imbricatus*.

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