

METAL CONTENTS IN HONEY AND MUSHROOMS FROM SERPENTINE SOILS IN THE MORAIS SITE

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1. Introduction

Morais massif is the largest continuous serpentine unit in Portugal. It is located in NE of Portugal and is a site of Natura network 2000 (PTCON0023).

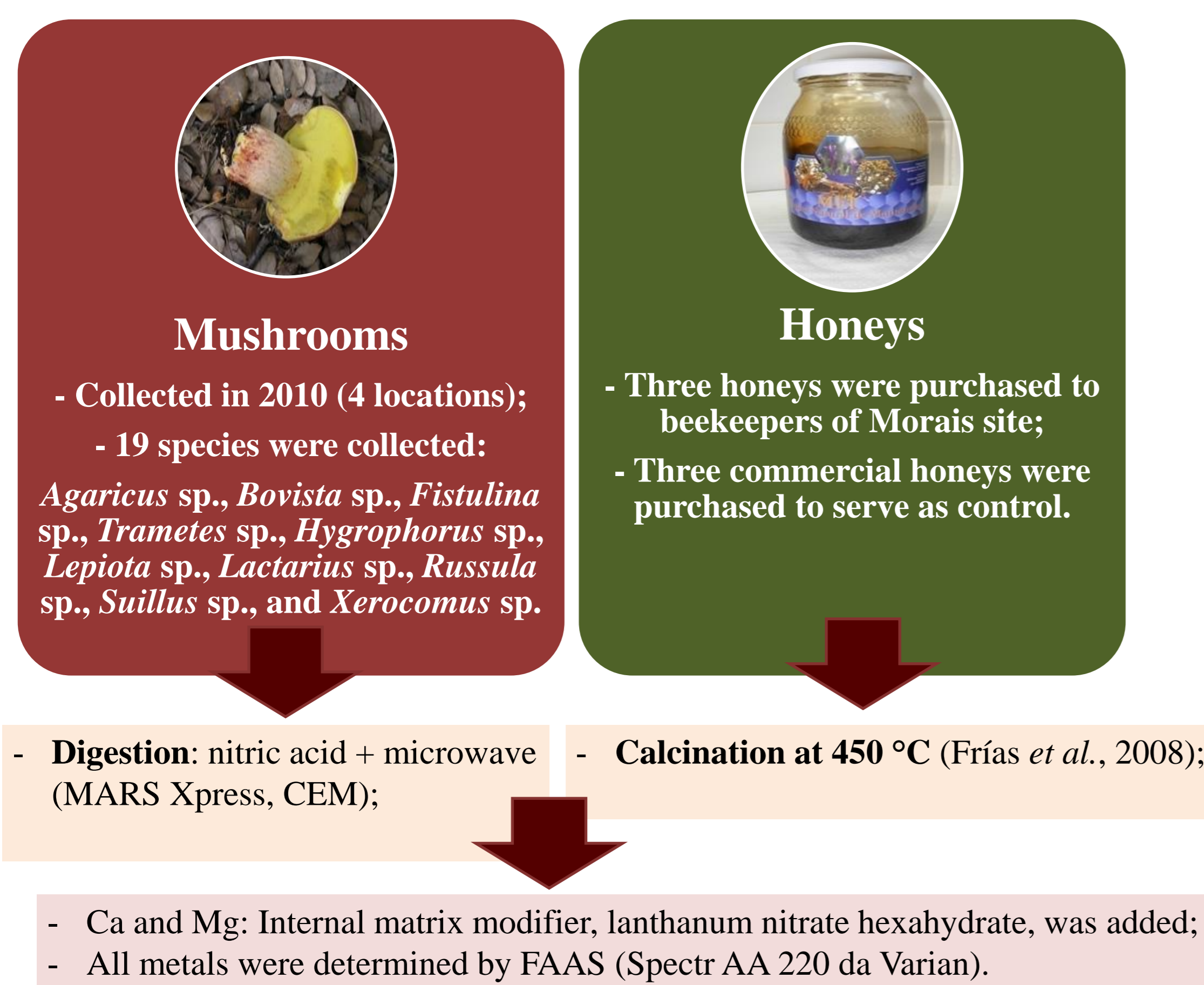
Studies performed in serpentine soils have reported deficiencies in certain nutrients (P, N, K, Ca), imbalances in some elements (low Ca/Mg ratios) and high concentrations of Cr, Ni and Mn (Fernández et al., 1999; Miranda et al., 2009).

In the Morais site several non-wood forest products (NWFP) are collected, consumed and sometimes traded by the local community. These products contribute to the sustainable management of the world's forests, to preserve their biodiversity, and to improve income generation and food security.

2. Objective

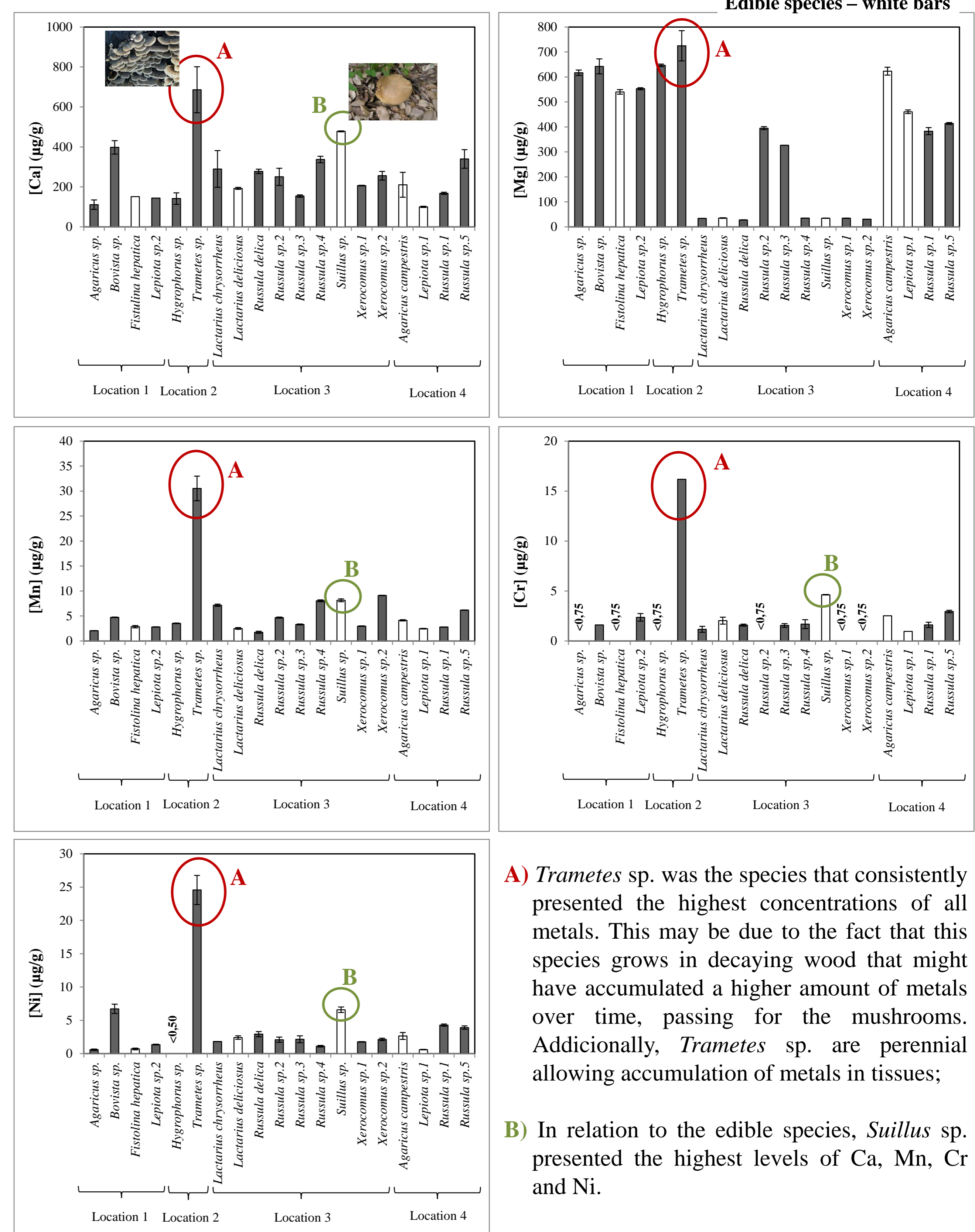
As soils of Morais site may have high contents on heavy metals, it is of great importance to analyze their contents in such food products. In the present study, to infer on the effect of soil chemistry on food security, we analyzed the contents of Ca, Mg, Mn, Cr and Ni in honeys and mushroom species from the Morais site.

3. Materials and Methods

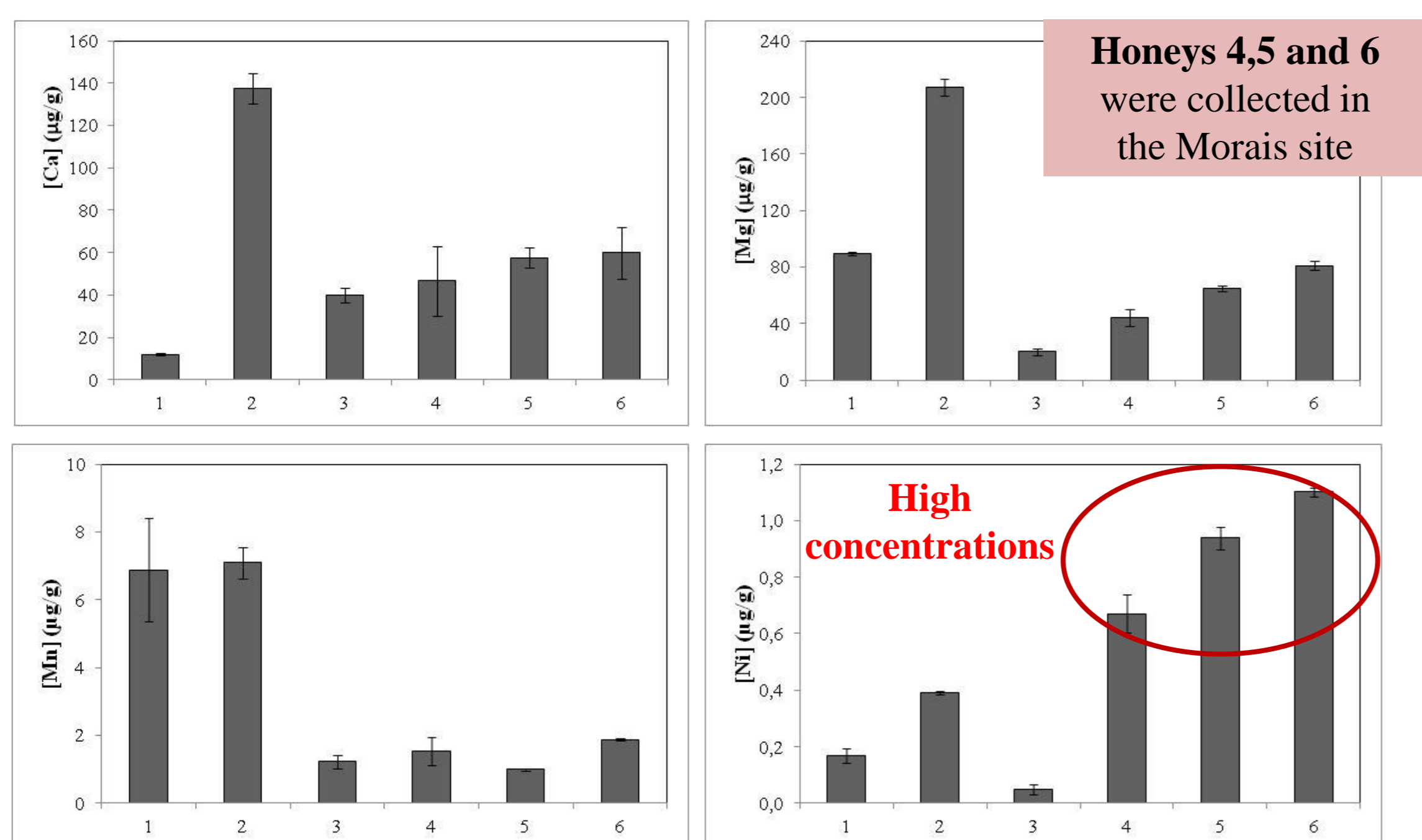


4. Results and Discussion

4.1 Mushrooms



4.2 Honey



Tolerable Upper Intake Level (UL) for Ni = 1 mg Ni/day → it would be necessary to consume about **900 g** of honey per day to exceed the UL.

5. Conclusions

- *Trametes sp.* (non-edible) was the mushroom species that showed consistently the highest metal concentrations. In relation to the edible species, *Suillus sp.* was the one that presented the highest levels of Ca, Mn, Cr and Ni.
- The honeys collected in the Morais site showed higher levels of Ni in relation to commercial honeys (control). Even though Morais honeys showed higher Ni levels than the control ones, they are safe for human consumption.

References

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