

## SUMMARY

### Productivity and bioactive compounds in two edible mushrooms on supplemented substrate

Investigation of edible mushroom species that have not been exploited and show potential in their cultivation to produce functional food is of utmost importance, this is the case of the *Schizophyllum commune*. The objective of the present work was to evaluate the productivity and the bioactive compounds of two edible mushrooms in a supplemented substrate. For this, the cultivation of *P. pulmonarius* (IE-115) and *Schizophyllum commune* was evaluated in two substrates, oat straw (O) and oat straw + pine sawdust (OP). The production of the mushrooms was obtained for a cycle of three harvests. Biological Efficiency (EB), Production Rate (TP), and Yield (R) were evaluated. Bioactive compounds were evaluated by the content of total phenols (CTF) and total flavonoids (TF) of both strains on two substrates (O and OP) under two conditions (dehydrated and dehydrated with vitamin C). Furthermore, the antioxidant capacity was evaluated in two tests (FRAP and ABTS). The results showed that the substrate O provided higher values of EB (162.16%), TP (3.08), and R (37.29%) for *P. pulmonarius* compared to OP, with a significant difference. *Schizophyllum commune* showed statistically similar production values in the substrates of O and OP (EB: 48.91%, TP: 1.91 and R: 11.25%; and (EB: 46.73%, TP: 1.82, and R: 10.75%) respectively. For *S. commune*, it was observed that the OP substrate provided higher CTF ( $2.67 \pm 0.09$  mg EAG / g) and TF ( $2.34 \pm 0.09$  mg EC / g) than the substrate O, CTF ( $1.95 \pm 0.12$  mg EAG / g) and TF ( $1.08 \pm 0.07$  mg EC / g) with significant difference. The dehydration method with vitamin C favored the antioxidant capacity of the strains, showing significant differences between both substrates ( $p \leq 0.05$ ). The strain *P. pulmonarius* did not show significant differences in TF in both substrates, and only showed a lower amount of CTF grown in OP. *Schizophyllum commune* showed the highest ABTS activity in the OP substrate with the dehydration method with vitamin C ( $p \leq 0.05$ ), however, in the FRAP test it showed no difference between treatments. The fruiting bodies of the wild strain of *S. commune* possess superior antioxidant properties compared to *P. pulmonarius*. *Schizophyllum commune* has enormous potential for the benefits it can provide to health, thus opening up wide possibilities for industrialization and its use.

Key words: pruning, Persian lime, vegetative buds, rainfed production, flowering