International Conference on Science, Technology, Engineering and Economy

ICOSTEE 2022

Book of Abstracts

24 March 2022

Szeged

Hungary

Publisher:

Faculty of Engineering,

University of Szeged

ISBN 978-963-306-853-3

TOTAL DIETARY FIBER AND MINERAL CONTENT IN SOME SELECTED MUSHROOM VARIETIES GROWN IN SRI LANKA

M.A. Wickramasinghe[1], T.C. Kananke[1], S.M. Sewwandi[2], R. Liyanage[2]*

[1]Faculty of Applied Sciences, Sabaragamuwa University of Sri Lanka, P.O. Box 02, Belihuloya, Sri Lanka.
[2]National Institute of Fundamental Studies, 20000, Hanthana Road, Kandy, Sri Lanka

*ruvini.li@nifs.ac.lk

ABSTRACT

Mushrooms are edible fungi rich in nutrients and bioactive compounds. Although there is a large number of mushroom species grown around the world only a few species have been identified as potential sources of nutrients. Mushrooms species used in this study are commercially grown in Sri Lanka and not studied for their nutritional properties. Thus, this study investigated the total dietary fiber content, major elements (Ca, Mg, K), and trace elements (Fe, Zn, Cu, Mn, and Na) in four mushroom varieties; Button (Agaricus bisporus), Oyster (Pleurotus ostreatus), MK-white (Calocybe sp.), and Ganoderma (Ganoderma lucidum). Total Dietary Fiber and mineral content were determined by the dietary fiber kit (AOAC 985.29 (2009) and the Inductively coupled plasma/optical emission spectroscopy (ICP/OES) method, respectively. Results of this study showed that all four studied mushrooms species are a good source of micronutrients and Ganoderma lucidum showed a significantly higher micronutrient content compared to all other three species. The trace minerals Zn, Fe, Cu, Mn, and Na were in the range of 418.56-8853 mg/kg dry weight (dw), 31.34- 148.27 mg/kg dw, 131.67-647.14 mg/kg dw, 34.41-99.60 mg/kg dw, 91.02-576.61 mg/kg dw, respectively. The total dietary fiber content in the mushroom species was in the range of 32.59-75.33% w/w dry weight (dw), and the highest content was observed for Ganoderma Lucidum (75.33±0.83 %w/w, dw) and lowest for Agaricus Bisporus (32.59±0.02% w/w, dw). Major elements of Ca, Mg, and K were in the range of 6.138 -35.28 g/kg dw, 9.59 -11.34 g/kg dw, and 6.12 -25.11g/kg dw sequently. Findings show that mushrooms are rich not only in fiber but also in micronutrients and are a good source for non-communicable diseases and micronutrient deficiencies.

Keywords: Dietary Fiber, Mushroom, Mineral, Nutrient, Varieties