

Nutritional and nutraceutical assessment of wild and commercially grown mushrooms

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Mushrooms are rich sources of nutraceuticals which are deemed essential for their antioxidant, anti-tumor, and antimicrobial properties. Several experiments have been performed on wild and commercially grown medicinal species of mushrooms to assess their nutritional and nutraceutical quality. The analysis of nutrient quality included the determination of sugars, fats, proteins, ash and carbohydrates, while the analysis of nutraceuticals included the determination of fatty acids and phytochemicals such as tocopherols, phenolics, carotenoids, flavonoids and ascorbic acid. The commercially grown medicinal mushrooms were found having higher protein and lower fat contents hence regarded as more nutritional than their wild counterparts. Also, the commercial species were observed having higher contents of sugars. The wild species contained lower values of mono unsaturated fatty acids, while the α -Tocopherol was detected in higher amounts in the wild species. Wild species also revealed a higher content of phenols but a lower content of ascorbic acid, than commercial ones. The species that have been properly analyzed for medicinal value are: *Ganoderma lucidum* (Reishi), *Lentinus edodes* (Shiitake), *Grifola frondosa* (Maitake), *Agaricus blazei* (Hime-matsutake), *Cordyceps militaris* (Caterpillar fungus), *Pleurotus ostreatus* (Oyster mushroom) and *Hericium erinaceus* (Lions mane). Besides their pharmacological features wild mushrooms are becoming more important in our diet due to their nutritional value, related to the high protein and low fat/energy contents. Besides, these mushrooms might be used directly in diet and promote health, taking advantage of the additive and synergistic effects of all the bioactive compounds present. The differences between the nutrient concentrations of different wild and commercially grown mushrooms may be attributed to a number of factors, such as mushroom strain/type, composition of growth media, time of harvest, management techniques, handling conditions, and the preparation of the substrates. The entire extracts were used to measure potential health benefits taking advantage of the additive and synergistic effects of all the bioactive compounds present in the extracts. Therefore, mushrooms might be used not only for their nutritional properties but also as a source for the development of drugs and nutraceuticals. Future studies should be done in order to conclude the mechanism of action involved in antimicrobial growth inhibition; there might be other compounds which contribute to antimicrobial properties of the wild and commercial species. The ongoing research on the assessment of nutritional and nutraceutical quality of wild and commercially grown medicinal mushrooms may lead to a new generation of drugs and foods with better preventive strategies.

Biography

Ravendra Pratap Singh Chauhan holds a Master of Science in Biotechnology and serves as a Project Assistant at Amity University, Noida, India. Mr. Chauhan has published two articles in peer-reviewed International journals as well as several abstracts in various reputed International journals and conferences.

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Probiotics: Contributions to the poultry industry

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The increase of productivity in the poultry industry has been accompanied by various impacts including emergence of a large variety of pathogens and bacterial resistance. These impacts are in part due to the indiscriminate use of chemotherapeutic agents as a result of management practices in rearing cycles. This paper provides a summary of the use of probiotics for prevention of bacterial diseases in poultry as well as demonstrating the potential role of probiotics in the growth performance and immune response of poultry, safety and wholesomeness of dressed poultry meat evidencing consumer's protection, with a critical evaluation of results obtained to date.

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