

Indigenous Fermented Herbal Tea Waste (Rooibos and Honeybush): Unique Substrates for Cultivation of Basidiomycetes Mushrooms

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Aspalathus linearis and *Cyclopia intermedia*, indigenous fynbos shrubs, are used for the production of rooibos and honeybush tea, respectively. Processing of the plant material includes an oxidation (fermentation) step, which is essential for the development of the characteristic sensory properties of these herbal teas. Only flowers, leaves, and small stems are used in the manufacturing processes. Large amounts of woody, fermented rooibos and honeybush waste are therefore generated.

Production and consumption of gourmet/medicinal mushrooms in South Africa is expected to increase. Improved technology to cultivate gourmet/medicinal mushroom strains more efficiently is under investigation. In one such instance, a growth medium for the cultivation of gourmet/medicinal mushrooms has been developed and patented. According to one aspect of the invention, the growth medium for Basidiomycetous fungi consists of a substrate that includes biomass of the genus *Aspalathus*. In an alternative form of the invention, the substrate includes biomass of the genus *Cyclopia*. The sub-

strate may also include a combination of *Aspalathus* and *Cyclopia*.

The potential of rooibos and honeybush as functional foods as related to their phenolic composition and antioxidant and antimutagenic properties has recently been reviewed. With more than four thousand flavonoids identified in plants, it is of interest that the dihydrochalcone, aspalathin, is unique to rooibos. Honeybush (various *Cyclopia* species) differs from rooibos in the major classes of phenolic compounds present. Apparently rooibos exhibits similar anticancer properties as green and black teas. No information is available on the possible anticancer properties of honeybush.

It has recently been shown that processing, although necessary for the development of sought-after sensory properties of rooibos and honeybush, is detrimental to the antioxidant and antimutagenic activities of aqueous extracts of these plants. Future gourmet/medicinal mushroom research will therefore focus on the utilization of unfermented tea waste.