CHARACTERISATION OF FLAVOUR AND TASTE COMPOUNDS IN *AGARICUS BLAZEI* MURRILL *SENSU* HEINEM., THE CULTIVATED ALMOND MUSHROOM

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Abstract

Agaricus blazei Murrill *sensu* Heinem. is a new cultivated medicinal and gourmet mushroom which is currently popular in Brazil, Japan and China. It is also cultivated in the USA, and it has recently drawn the attention of European mushroom growers. Upon investigating the mushroom's pleasant almond flavour, it was observed that benzaldehyde and its precursor benzoic acid were the major components of the volatile fraction. Other benzylic compounds contributing to the flavour were benzyl alcohol, methyl benzoate and 4-hydroxybenzaldehyde. When reconstituting the commercially available dried mushrooms, almond flavour develops, presumably by enzymic conversion of benzoic acid to benzaldehyde and benzyl alcohol. Since benzoic acid is present at concentrations of 1280-3100 mg/kg dry weight, it may contribute to the excellent shelf life of the mushroom. Interestingly, benzoic acid also occurs in several close relatives of *A. blazei*, suggesting that this compound could well be a taxonomic marker. Among the non-volatile taste compounds, mannitol predominated to the extent of 22% on dry weight. Contents of taste-enhancing free glutamic and aspartic acids were comparable to those reported in the White button mushroom (*Agaricus bisporus*). The mycelium of *A. blazei* was found to be poor in nearly all compounds investigated. No almond flavour was observed and its crude protein content was only 13% compared with an average value of 30% in the dried mushrooms. Moreover, it had less than 1% of mannitol and only very low levels of free amino acids. Typical secondary metabolites as urea, free tryptophan and agaritine were even totally absent.

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was to assess the biodiversity of chytrids in four distinct vegetation types in central eastern New South Wales: subtropical rainforest, wet sclerophyll forest, dry sclerophyll forest and open heath. Attention was focused especially on newly observed species, new records of taxa in Australia, and morphological variation of known taxa. A second objective was to assess species richness and diversity of chytrids within the four habitats. Water cultures of 227 soil samples from 14 collection sites were baited with cellulose, chitin, keratin, and pollen substrates. The substrates were examined microscopically for the presence of chytrids, and 38 taxa were observed. Evaluation of species diversity among the major collection sites used a presence or absence recording technique, and indicated that the greatest number of species occurred in dry sclerophyll forest, while the least number of species occurred in the open heath habitat. Across all habitats studied, a few chytrid species were common while most were scarce to rare. Many of the 17 species recorded for the first time in Australia also are considered to be pandemic in distribution. Eight taxa were observed for the first time and were assigned provisional generic affiliation. and may be endemic to Australia. This study serves as a baseline for evaluation of chytrid biodiversity and distribution in additional natural and disturbed habitats of Australia.

P.M. Letcher *et al.* (2004). Zoosporic fungi from soils of New South Wales. *Australasian Mycologist* 22 (3): 99-115.