Fatty acid methyl esters in the volatiles of cultivated *Pleurotus* mushrooms - Preliminary results

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BACKGROUND AND OBJECTIVE: Fatty acid methyl esters (FAME), known to confer waxy, fatty, fruity aromas, have been identified in volatiles of mushrooms like *Morchella importuna*, *Agaricus bisporus*, and *Pleurotus*. In this work we report the presence of FAME in the volatiles of four *Pleurotus ostreatus* and four *Pleurotus eryngii* strains, cultivated (i) on wheat straw (WS), (ii) wheat straw with grape marc (GM) and (iii) olive leaves with olive mill wastes (OL).

METHODS: Volatiles were extracted from fresh mushrooms by headspace solid phase microextraction (HS-SPME) after samples' equilibration in thermostated saturated NaCl solution and analysed by GC-MS. FAME were identified by reference to a mixed FAME standard and the NIST98 mass spectral library, and were quantified by employing 4-methyl-1-pentanol as internal standard.

RESULTS: The methyl esters of 14:0, 15:0, 16:0 and 18:2 were detected in all samples, while those of 6:0, 12:0, 18:0, and 18:1 in the majority of samples. The sum of FAME concentrations ranged between 6.1-29.2 mg/kg in *P. ostreatus* and 11.2-239 mg/kg in *P. eryngii*. Total FAME were higher in *P. ostreatus* cultivated on WS (25.2 mg/kg) and lower in OL (14.8 mg/kg). The opposite trend was observed in *P. eryngii*, with the lower concentrations in WS (39.3 mg/kg) and the higher in OL (103.4 mg/kg).

The abundance of FAME, in decreasing order, was in *P. eryngii* 16:0>18:1>18:2>15:0>14:0, while in *P. ostreatus* 16:0>18:2>15:0>14:0≈18:1

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