

Inhibiting Effect of Different Medicinal Mushrooms on Ochratoxin A Production

Alessandra Ricelli, Anna Adele Fabbri, Massimo Reverberi, Slaven Zjalic, and Corrado Fanelli

Dipartimento di Biologia Vegetale, Università di Roma "La Sapienza," Largo Cristina di Svezia 24, 00165 Roma, Italy

The efficacy of different antioxidants, free radical scavengers alone or associated with culture filtrates obtained from *Lentinus edodes* (Berk.) Sing. and *Pleurotus eryngii* (DC.) Gill. have been tested to verify their action on fungal growth of mycotoxigenic fungi and in particular on different isolates of *Aspergillus ochraceus* G. Wihl. and *Penicillium verrucosum* Dierckx (ochratoxin A producers).

The culture medium used was a maize extract (MZEA) modified to obtain a water activity value (a_w) of 0.90 and 0.99; the test temperatures were 21°C and 27°C. We have tested different antioxidants and food preservatives alone or in association with 1%, 2%, 4% lyophilized filtrates (L.P.) from 7-, 14-, and 21-day-old cultures of *Pleurotus eryngii* and 4% and 8% from 60-day-old cultures of *Lentinus edodes* (L.L.) grown on potato dextrose broth (PDB). The selected chemicals were: butylated hydroxyanisole (BHA) 0.02%; butylated hydroxytoluene (BHT) 0.02%; Na propio-

nate (Prop Na) 0.05% and 0.1%; K sorbate (Sorb K) 0.05% and 0.1%; BHA 0.02%+Prop Na 0.05%; BHA+Sorb K 0.05%; BHT 0.02%+Prop Na 0.05%; BHT 0.02%+Sorb K 0.05%; Prop Na 0.05%+Sorb K 0.05%; BHA 0.02%+BHT 0.02%; BHA 0.02%+BHT 0.02%+Prop Na 0.05%; BHA 0.02%; BHT 0.02%+Sorb K 0.05%; BHA 0.02%+Prop Na 0.05%+Sorb K 0.05%; BHT 0.02%+Prop Na 0.05%+Sorb K 0.05%;

(All tested percentages are w/v). In some experiments 10^{-3} M resveratrol and 10^{-4} and 10^{-3} M ellagic acid were tested also.

After 4 days of incubation all the tested strains have shown a better growth capability (measured as colony diameter) with 0.99 rather than 0.90 a_w . The best results were obtained with L.L. 4% in association with resveratrol (10^{-3} M) and ellagic acid (10^{-3} M), while L.L. 8% alone showed a slight inhibition in comparison with control.