Abstract

Influence of water activity (0.75–0.99 a_w) and temperature (10, 20 and 30 °C) on germination and mycelial growth on green coffee extract agar medium of three ochratoxigenic isolates of *Aspergillus ochraceus* was studied. Optimal conditions for germination and growth were observed at 0.95–0.99 a_w and 20–30 °C for the three isolates. Minimum a_w level for germination was 0.80, and 0.85 for mycelial growth. At marginal a_w and temperature levels assayed, the lag phases prior to germination increased and the growth rates showed a significant decrease in comparison with the optimal conditions. Data were modelled by a multiple linear regression (MLR) and response surface models were obtained. Germination and growth of *A. ochraceus* in green coffee beans could be prevented or at least inhibited to some extent by minimising the time that coffee beans are exposed to temperature and humidity conditions near to the optimum during processing and storage.

This could be an empirical approach to predict the effects of water activity and temperature conditions on the development of ochratoxigenic isolates of *A. ochraceus* during handling and storage of green coffee.