

Ochratoxin A Production by *Aspergillus ochraceus* in Raw Coffee as Affected by Alternating Temperatures and Different Water Activity Values

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SUMMARY

The effect of changes in temperatures on ochratoxin A (OTA) production by *Aspergillus ochraceus* has not been studied extensively. These changes occur, mainly, during storage in farm barns and transport. The present work was carried out in order to evaluate the changes during day and night in storage of coffee in farm barns in São Paulo State. Two temperatures (14° and 25°C) were chosen as the mean of day and night in different equilibrium relative humidity (ERH) conditions: 80, 87 and 95% for the production of OTA by *Aspergillus ochraceus* in raw coffee. Temperatures were cycled at 12 hour intervals. In similar conditions but without temperature cycling the coffee was maintained at 25°C at these three relative humidities. Ochratoxin production was analysed at periods of 7, 14 and 21 days after the coffee had reached the equilibrium relative humidity. The water activity of coffee was checked with an Aqualab 3TE (Decagon) and the content of OTA in HPLC was quantified according to Pittet et al., (1996). At cycling temperatures, OTA production was 57.1%, 34.4% and 13.9% higher than the 25°C constant temperature at water activity of 0.80, 0.87 and 0.95, respectively. Differences between cycling temperatures and constant temperatures were more critical in lower water activity values.

Further studies on the influence of inoculum vehicle on the production of OTA in coffee are being conducted. As well studies on OTA production by *A. carbonarius* in raw coffee with different water activity.