

Levels and Profiles of Bioactive Amines in Coffee as Affected by Roasting

A.L.S. VASCONCELOS¹, A.S. FRANCA¹, , M.B.A. GLÓRIA², T.M.L. SILVEIRA²

¹Núcleo de Pesquisa e Desenvolvimento em Café, DEQ/UFMG, R. Espírito Santo, 6º andar, 30160-030, Belo Horizonte, MG, BRAZIL, E-mail: franca@deq.ufmg.br

²Laboratório de Qualidade de Alimentos, Dep. de Alimentos, FAFAR/UFMG

SUMMARY

The present study aimed at an evaluation of the effect of roasting on the levels of amines in coffee. Also, since coffee quality is associated with the presence of defective beans, an evaluation of amine levels for each specific defect (black, brown, immature) in comparison to healthy beans was performed. Samples were roasted to three different levels. HPLC analysis was carried out for the detection and quantification of the following amines: putrescine, spermidine, spermine, agmatine, cadaverine, serotonin, histamine, tyramine, tryptamine and phenylethylamine. Putrescine, agmatine and spermidine were detected in all samples prior to roasting. Putrescine was the prevailing amine, followed by agmatine, spermine and spermidine. This distribution was observed for all samples except for black beans, for which agmatine was the prevailing amine. Histamine was only detected in the defective coffee beans. There was a significant decrease in total amine content after roasting and only small amounts of serotonin, agmatine and spermidine remained. No significant differences were detected in amine levels among defective and non-defective coffee beans after roasting.