COMBINED INFLUENCE OF ROASTING DEGREE AND BREWING METHOD ON CHLOROGENIC ACIDS, TRIGONELLINE, CAFFEINE, AND MELANOIDINS IN COFFEE BEVERAGES – A REVIEW

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Abstract

This review critically examines the influence of roasting degree and brewing method on chlorogenic acids, trigonelline, caffeine, melanoidins, and the antioxidant activity of coffee through a comparative synthesis of the scientific literature. The available evidence indicates that increasing roasting intensity promotes the degradation of chlorogenic acids and trigonelline, whereas caffeine shows relatively greater stability. At the same time, the formation of melanoidins and other compounds generated during roasting contributes to antioxidant activity, which therefore does not necessarily follow the changes in chlorogenic acid content. Brewing method further influences the final composition through extraction conditions such as temperature, contact time, pressure, and grind size. The integrated analysis highlights the heterogeneity of the reported findings, the limited number of factorial comparisons between roasting degree and brewing method, and the need for a more standardized characterization of roasting degree.

Key words: *coffee; roasting degree; brewing methods; bioactive compounds; antioxidant activity*