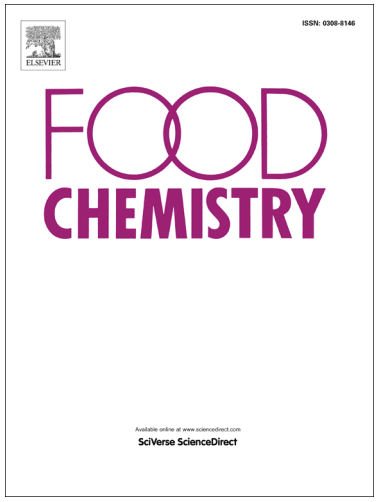

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Modifying Robusta Coffee Aroma by Green Bean Chemical Pre-Treatment

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Abstract

Green Robusta beans were subjected to pre-treatment with the aim of reducing the perceived aroma difference between Arabica and Robusta coffee. Treatment was a short soaking procedure with varying concentrations of acetic acid (up to 5%). Samples were subjected to thermal treatment (roasted) and ground to a standardised particle size distribution. Aroma compounds were evaluated by headspace analysis using solid-phase microextraction and gas chromatography-mass spectrometry. Pre-treatment significantly affected aroma formation during roasting and resulted in a modified level of pyrazines, furanic compounds and sulfur-containing compounds ($p < 0.05$). Principal component analysis illustrated that the aroma profile of the pre-treated Robusta coffee was closer to the target Arabica coffee after roasting. Sensory results confirmed that the aroma of the 2% acetic acid pre-treated Robusta brew was similar to Arabica; the maximum inclusion level of Robusta coffee in a blend could be increased from 20% to 80%.