

Untargeted Metabolomics as a Novel Tool in Coffee Research

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SUMMARY

In this report we introduce metabolomics as a promising approach to study the metabolite composition of the coffee plant and its products in a comprehensive manner. Using both gas chromatography and liquid chromatography coupled to high resolution mass spectrometry, we were able to detect and compare thousands of mass signals likely representing hundreds of compounds simultaneously. Here, we studied the alterations in the metabolite profiles upon open air-drying of fresh ripe fruit of *Coffea arabica* (50% moisture) towards fully-dried green coffee beans (11% moisture). Various patterns of alterations in relative metabolite abundance upon drying could be discriminated, suggesting differential and specific effects on metabolites and biosynthetic pathways. The example provided clearly indicates that metabolomics can provide novel insights in coffee metabolism. The wide-ranging analyses approaches will greatly enhance our possibilities to find novel markers for quality traits or genotypes, to monitor and control changes occurring upon pre- and post-harvest treatments, and to unravel coffee biology.