

Influence of the Storage Temperature on the Colombian Coffee Brew Quality

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SUMMARY

The evolution of typical coffee compounds, such as caffeine and trigonelline, and hydroxycinnamic acids and their degradation products (i.e. 4-vinylguaiacol), and coffee brew sensory quality throughout the time as influenced by refrigeration temperature (4 °C vs 25 °C) has been studied. High losses of odour intensity and total volatiles during the first storage days were occurred. An acceptable odour quality (fresh and not rancid) was maintained until 7 and 15 storage days in 25 °C and 4 °C coffee brews, respectively. However, taste quality was maintained longer than odour. Traditionally, pH 4.8 was assumed as the limit of acceptability for coffee (Pangborn, 1982; Dalla Rosa et al., 1986). But, pH was maintained at 4.9 after 15 days at 4 °C, while sensory characteristics (odour and acid/sour taste) were unacceptable. Consequently, pH should not be the unique criterion of coffee brew acceptability. Caffeine and trigonelline concentrations were maintained along the time. An initial increase of 5-CQA followed by almost constant concentrations in both coffee brews was observed. There was a maximum peak of caffeic acid at 7 days and 20 days in coffee brews stored at 25 °C and 4 °C, respectively. Furthermore, higher 4-vinylguaiacol decrease in coffee brews stored at 25 °C than in those at 4 °C was observed. In conclusion, coffee brews stored at 4 °C could have longer shelf-life than those at 25 °C. Moreover, the storage temperature influenced on the evolution of some typical coffee compounds and their degradation products.