

Influence of Extraction Temperature on the Final Quality of Colombian Coffee Cups

S. ANDUEZA, L. MAEZTU, M. P. DE PENA, C. CID

Departamento de Bromatología, Tecnología de Alimentos y Toxicología, Facultad de Farmacia, Universidad de Navarra, E-31080 Pamplona, Spain.

E-mail: bromat@unav.es

SUMMARY

The final quality in a cup of coffee is influenced by the variety of coffee and the different technological variables which are implicated in the extraction of coffee. Temperature of water has one of the greatest influence on the brew attributes (Lingle, 1996).

The aim of this work was to study the effect of the temperature of the water in the final quality of the coffee cup. The pressure, dose, holder filter diameter and extraction time were fixed using an experimental brew coffee prototype. The different water temperatures studied were: 88°, 92°, 96°, and 98°C. Colombian Arabica coffee was used. Physico-chemical (total solids, pH, index of foam, density etc), volatile headspace profile and sensory analysis of brew coffee were carried out.

The highest positive key odorants percentage (acetaldehyde, propanal, methylpropanal, 2-methylbutanal, 3-methylbutanal, 2,3-butanedione, 2,3 pentanedione, methanethiol) and the lowest negative key odorants percentage (hexanal, ethylpyrazine, 2-ethyl-6-methylpyrazine, 3,5 dimethyl-2-ethylpirazine, guaiacol) were obtained at 92°C.

Furthermore, at 92°C, a lower percentage of panel judges observed negative flavour notes (burnt, acid) in the coffee cups. The panel perceived the best positive flavour attributes (fruity, cereal, fresh, straw) at 92°C and 96°C.

Physico-chemical, taste and mouthfeel parameters were not useful for selecting the optimal temperature of extraction because the results were in normal brew coffee values.

In conclusion, the optimal temperature of extraction in Colombian coffees was 92°C such as showed the best positive flavour attributes as well as the best key odorant profile.