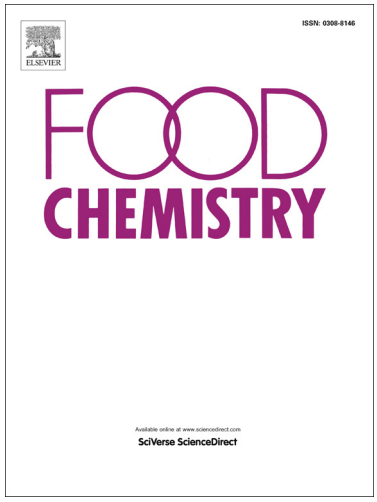

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The effect of ageing temperature on the physicochemical properties, phytochemical profile and α-glucosidase inhibition of *Hibiscus sabdariffa* (roselle) wine

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Abstract

The effect of temperature (6, 15 and 30 °C) during ageing on the colour, phytochemical composition and bioactivity of roselle wine was investigated over 12 months. At the end of aging, wines stored at 6 °C had the highest colour density and lowest polymeric anthocyanins. The initial concentration of most of the individual phenolic compounds decreased during ageing, with reduction of monomeric anthocyanins contributing to the formation of anthocyanin-derivatives (pyranoanthocyanins), eight of which were identified tentatively and reported here for the first time in roselle wine. The decrease in individual phenolic compounds did not affect inhibition of α-glucosidase (maltase) activity, which remained relatively low but stable throughout ageing. Diethyl succinate was the only volatile clearly influenced by ageing temperature, with the most pronounced effect at 30 °C (~ 256 fold increase). In summary, the final concentrations of anthocyanins and diethyl succinate were the major compounds influenced by ageing temperature.