Solid-liquid extraction of betel leaves (Piper betle L.)

ABSTRACT

This work investigated the effects of extraction temperature on the quality of extract and the kinetics of solid-liquid extraction of betel leaves. In this study, the effects of extraction temperature on the quality of extract were evaluated by comparing the concentration of its active compounds, including hydroxychavicol (HC) and eugenol (EU). The results indicate that the increase of extraction temperature led to the increase of the concentration of HC. EU concentration was decreased when temperatures higher than 60C were used. The kinetics data show that the extraction process reached equilibrium in a short time ï about 40 min. Two models, namely equilibrium-dependent solid-liquid extraction (EDSLE) model and diffusion-dependent solid-liquid extraction model were applied to describe the extraction process. By comparing the values of correlation coefficients, the EDSLE model was found to be more suitable in describing the extraction process as it provided a better fit to the experimental data.

Keyword: Extraction process; Betel leaves