ABSTRACT

Stevia rebaudiana (Bert.) is a plant containing Stevioside and Rebaudioside A with hypoglycemic activity and a sweetness level 300 times greater than sucrose. The water extract of S. rebaudiana still contains a strong pigment so it must be clarified through the clarification process. The aim of this study was to optimize the clarification conditions of the extract using an adsorption model with acid-activated kaolin bentonite adsorbent and its combination, determining the content of stevioside and rebaudioside A in stevia extract on each optimum adsorption model using High-Performance Liquid Chromatography (HPLC) and determining isotherm-sorption of the stevia extract pigment using the Langmuir and Freundlich isotherms model on acid-activated adsorbents which give higher percentage of dechlorophyllation. The percentage of clarification was calculated based on the percent of dechlorophyllation based on the absorbance of the solution. Pigment absorbance in the extract was measured using a UV-Vis Spectrophotometer at wavelengths of 410 nm and 665 nm. Adsorption of pigment in the extract by the adsorbent is done with a ratio of 20% (w/v). The adsorption time of adsorbent pigment was 30 minutes for bentonite and 90 minutes for kaolin macerated. The results showed that the optimal clarification percentage was achieved in the combination of bentonite with kaolin as 95.62% (410nm) and 97.53% (665nm). The content of stevioside and rebaudioside A were 146,038 (μg/ml) and 338,005 (μg/ml) respectively at kaolin 90 minutes while for activated acid-activated isotherm-sorption of bentonite at the concentration of 20% (w/v) dechlorophyllation following Langmuir model on wavelength 410 nm and Freundlich at 665 nm.

Keywords: adsorbent, adsorption, clarification, optimization, stevia