Selection of Co-solvent for the Extraction of Aged-beeswax from Beeswax-treated Hanji using Supercritical CO_2

이경보, 이선옥, 이홍식, 이윤우*
서울대학교
(ywlee@snu.ac.kr*)

The Annals of Joseon Dynasty were treated with beeswax for protection from moisture, air, and insects. However, it is reported that beeswax accelerates the deterioration of the Hanji. Thus, supercritical Fluid Extraction (SFE) using carbon dioxide and co-solvents was adopted to remove aged beeswax. To select proper co-solvent, a calculation of the solubility parameter was preceded. Group contribution method was used for the estimation of solvents and beeswax which are massive and complex material. From the calculated solubility parameter, several solvents were selected. The solubility of beeswax and aged beeswax in each solvent were measured. Using the selected solvent as a co-solvent, the supercritical carbon dioxide extraction was studied to enhance the extraction yield of aged beeswax.