

Purification of pectinase from mango (*Mangifera indica* L. cv. Chokanan) waste using an aqueous organic phase system: a potential low cost source of the enzyme

ABSTRACT

As a novel method of purification, an aqueous organic phase system (AOPS) was employed to purify pectinase from mango waste. The effect of different parameters, such as the alcohol concentration (ethanol, 1-propanol, and 2-propanol), the salt type and concentration (ammonium sulfate, potassium phosphate and sodium citrate), the feed stock crude load, the aqueous phase pH and NaCl concentration, were investigated in the recovery of pectinase from mango peel. The partition coefficient (K), selectivity (S), purification factor (PF) and yield (Y, %) were investigated in this study as important parameters for the evaluation of enzyme recovery. The desirable partition efficiency for pectinase purification was achieved in an AOPS of 19% (w/w) ethanol and 22% (w/w) potassium phosphate in the presence of 5% (w/w) NaCl at pH 7.0. Based on the system, the purification factor of pectinase was enhanced 11.7, with a high yield of 97.1%.

Keyword: Purification; Organic solvent; Aqueous organic phase system; Pectinase; Mango peel