Optimization of accelerated water extraction for ginger bioactive compounds

ABSTRACT

This paper investigated the optimum recovery of ginger bioactive compounds (6-, 8-, 10-gingerols and 6-shogaol) based on semi-batch and batch systems in accelerated water extraction. The optimum is determined based on peak value i.e optimum recovery of batch system to semi-batch. The peak value of 6-, 8-, 10-gingerols and 6-shogaol are 64.6 %, 47.2 %, 30.6 % and 135.6%. 6-shogaol has the highest peak value with exceeding than 100% because of the -hydroxyl in gingerols is dehydrated to form shogaol. The degradation rate, kdeg has good correlation in first order rate. The highest kdeg are found in 8-, and 10-gingerols.

Keyword: Ginger bioactive compounds; Peak value; Accelerated water extraction; Degradation; Optimum