

Modelling the kinetics of seedless guava(*Psidium guajava* L.) peroxidase inactivation due to heat and thermosonication treatments.

Abstract

Effect of heat and thermosonication on inactivation kinetics of peroxidase in seedless guava have been studied over a temperature range of 80-95°C. Application of thermosonication was studied at 25, 50 and 75% of radiation intensity at the same temperature range. Ultrasonic wave's intensity had significant($P<0.05$) effect on peroxidase inactivation rate except the 25% intensity radiation. In both treatments, the enzyme kinetics showed a first-order kinetics model with monophasic behaviour. The activation energy, the rate constants were estimated which proving that the enzyme became more heat labile. Therefore, thermosonication can affect a process with reduced processing time and increased efficiency.

Keyword: Peroxidase inactivation; Seedless guava; Thermal inactivation; Thermosonication.