

Release kinetics of encapsulated herbal antioxidants during gelation process

Abstract

Dripping-gelation method was used for encapsulation of aqueous herbal extract. This objective of this study was to determine the release kinetics of the antioxidants during the gelation process. The process variables studied were particle size, alginate M/G ratio, concentration, gelling cation concentration and extract strength. Results showed that under all studied variables, a sharp release of the encapsulated antioxidant was observed during the initial gelation period (i.e., in the first 20 min). This amounted to about 80% of the total antioxidants. After this time, the antioxidant release was significantly reduced. In general, the amount of antioxidant that could be retained within the beads after prolonged gelation time was about 10-20%. In conclusion, by using the encapsulation system, prolonged gelation time resulted in about 10-20%) encapsulation efficiency. © Asian Network for Scientific Information.