

# STUDY ON PRODUCTION OF INSTANT POWDER FROM GINGER (*Gingiber officinale* Roscoe) BY SPRAY-DRYING

Do Vinh Long, Mac Xuan Hoa, Le Thi Hong Anh

## Summary

Instant powder from ginger (*Gingiber officinale* Roscoe) was obtained at the laboratory scale by spray drying with maltodextrin as carrier. Effects of spray drying conditions (dry matter concentration of material and drying temperature) on efficiency of drying process (polyphenol recovery efficiency (HS, %), total polyphenol content (TPP, mGAE/g), antioxidant activity (AA, mM TE/g)) was studied. Experimental results showed that both dry matter concentration of material and drying temperature had significant effects on efficiency of drying process ( $p < 0.05$ ). Relationship between spray drying condition and efficiency of drying process was significantly correlated with a quadratic model ( $p < 0.05$ ) with a  $R^2$  of 0.9726. Optimum drying condition was determined with AA (mM TE/g) as response. AA was highest of 42.11 mM TE/g at 20.3% dry matter concentration of material and 160.46<sup>0</sup>C drying temperature. At optimum drying conditions, the HS and TPP of antioxidant powder were 90.33% and 24.45 mg GAE/g, respectively. Powder exhibited stronger antioxidant activity than BHT and BHA. However, its antioxidant activity was less than that of TBHQ.

**Keywords:** *Ginger (Gingiber officinale Roscoe), spray-drying, maltodextrin.*