

## **Optimisation of spray drying operating conditions of *Morinda citrifolia* L. fruit extract using response surface methodology**

### **Abstract**

A conventional solvent extract of *Morinda citrifolia* L. fruit was spray dried using adjuvant maltodextrin (5 wt.%). Spray drying was carried out according to the D-optimal design, and the independent variables selected were temperature and  $M_{\text{core}}/M_{\text{wall}}$ . The spray drying process was optimised by using response surface methodology (RSM) for four different responses: moisture content (MC), DPPH scavenging activity, total phenolic content (TPC), and total flavonoid (TF). The effects of temperature and of the core to wall material ratio were found to be significant for all responses. The optimal spray drying condition for maltodextrin as binding material was found to be 1:1.5 ( $M_{\text{core}}/M_{\text{wall}}$ , volume ratio of *M. citrifolia* L. extract to additive solution) at 95 °C. The experimental values of the response variables correspond well to the predicted values. The microparticles obtained in this study represent an interesting food additive for incorporation into functional foods due to the presence of antioxidants.