EFFECT MICROENCAPSULATING AGENT CONCENTRATION AND SURFACTANT ON MICROCAPSULES OF PEQUI PULP POWDER

Audirene A. Santana\textsuperscript{1}, Gustavo K. Fugita\textsuperscript{2}, Louise E. Kurozawa\textsuperscript{3}, Rafael A. Oliveira\textsuperscript{4}, Kil J. Park\textsuperscript{1.} \textsuperscript{1}School of Agricultural Engineering – University of Campinas, Avenida Candido Rondon, 501; Cidade Universitária Zeferino Vaz, - CEP: 13083-875, Campinas - SP – Brazil. \textsuperscript{2}School of Food Engineering, University of Campinas, Rua Monteiro Lobato 80, 13083-862 Campinas, São Paulo, Brazil. \textsuperscript{3}Federal Rural University of Rio de Janeiro, BR 465, Km 7 - CEP: 23890-000 - Seropédica - RJ - Brazil

The pequi (\textit{Caryocar brasiliense} Camb.) is rich in oil, protein and carotenoids. This research work aimed to evaluate the spray drying of pequi pulp extract in spray dryer, using a DCCR, with central points (level 0) and axial points (±\(}\alpha\) levels), resulting in 17 runs to evaluate the effect of independent variables: inlet air temperature - \(T_{in}\) (140-200°C), concentration of Tween 80 surfactant – \(C_S\) (0-5%) and concentration of dextrin - \(C_D\) (15-30%) on process yield, powder moisture, powder hygroscopicity, water activity, vitamin C and carotenoids content. The experimental values of final moisture content ranged from 0.43 to 1.92%. The water activity of the powders ranged from 0.13 to 0.30. Moreover, the values of hygroscopicity ranged from 7.96 to 10.67%. The experimental values of vitamin C ranged from 18.73 to 37.51 mg of ascorbic acid /100g, while the total carotenoids content ranged from 15.51 to 123.42 mg of carotenoids/g of pequi solids. The studied parameters do not showed statistical significance (\(p<0.10\)) for these responses. This fact indicates that, statistically, any value of the independent variables in the studied range can be used. However, the yield was influenced by the parameters used in the experimental design. The \(T_{in}\) was the variable which showed positive influence on yield, i. e., higher values of inlet air temperature provides higher yield values. On the other hand, \(C_S\) and \(C_D\) presented negative influence.