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ANTIOXIDATIVE PROPERTIES OF SELECTED MICROENCAPSULATED

PLANTS POWDER PREPARED USING

ULTRASONIC SPRAY-DRYING TECHNIQUE

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ABSTRACT

Ultrasonic spray drier technology has been practice because of its numerous advantages, including providing more uniform droplets and reducing bioactive compounds damages. This study was aimed to measure the antioxidant properties of several microencapsulated plants powder (MPP) prepared using ultrasonic spray dying technique. The plant samples were treated using ultrasonic spray drier at 80 °C inlet temperatures and 10% of gum Arabic relative to solid content. The collected MPP were analysed for their antioxidant activities. The plants use in this study were *C. ternatea*, *M. indica*, *S. rebaudiana*, *P. macrocarpa*, *K. salvarezii* and *R. apiculata*, All MPP showed somewhat very promising high antioxidative activities with *C. ternatea* significantly exhibited the highest ($P < 0.05$) antioxidant power in nearly all antioxidative test analysis performed. On the other hand, *M. indica* showed the least ability in antioxidant power and the content of bioactive compounds. Results of the study point that the production of MPP and microcapsules is feasible as a functional ingredient in food industry as it can retain the antioxidative properties, which could lead to a more sustainable usage of natural resources.

Key words: Ultrasonic spray drying, antioxidative activities, microencapsulated plants powder (MPP)