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Optimization of extraction and microencapsulation of polyphenols from pomace of Indian grapes

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Abstract: The objective of this study is to improve extraction parameters of polyphenols from pomace of one Indian table grape cultivar. i.e. Tas-A-Ganesh Grape(TAGG).The impact of various solventsi.e.ethanol, (0, 25, 50, 75 and 100%) and methanol (0, 25, 50, 75 and 100%), with extraction time (0, 1, 2, 3, 4 and 5 hr.) were tried. It was found that the dissolvable nature and time significantly affect add up to polyphenols (TP) recuperated from the grape pomace. The best extraction conditions were as per the investigation methanol 75% at room temperature during 4 hr. furthermore, six back to back extractions with content of TP extracted of 22.62 mg GAE/100 g of Tas-A-Ganesh Grape Pomace (TAGGP). This shows the rate of polyphenols removed from grapes pomace relies on upon the 75% of Ethanol solvent. This study on the optimization of the extraction parameters of polyphenols from grape pomace isexceptionally unique on scale of India.

A lab scale spray-dryer was opted to engender microcapsules of polyphenols utilizing different dextrose equipollents of Maltodextrin and Gum Arabic as a coating material. Core: coating material ratios (1:1), five different Maltodextrin (MD): Gum Arabic (GA) ratios (10:0, 8:2, 6:4, 6:4 and 10:0), and four different inlet temperatures (120, 140,160, 180^{0}C) were investigated. Total phenolic contents were evaluated; the most efficient microcapsules were obtained with an 8:2 ratio of MD: GA at 140^{0}C inlet temperature.

Key words: Tas-A-Ganesh Grapes, Pomacs, Polyphenols, Extraction, Microencapsulation.

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