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OPTIMIZATION OF MICROWAVE ASSISTED EXTRACTION OF POLYPHENOLS FROM SOLANUM TRILOBATUM

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Abstract:

Solanum trilobatum, an underutilized medicinal plant rich in bioactive components like steroids, triterpenoids, phenolic compounds, tannins and saponins was used for the microwave assisted extraction of polyphenols. The present work reveals the optimized condition for the extraction of polyphenols from *solanum trilobatum* by microwave assisted extraction. Microwave assisted extraction of polyphenols was performed by varying the factors such as solvent feed, solvent concentration, extraction time and microwave power to analyze the effect of polyphenol content. It is observed that the process parameters greatly influence the polyphenol content of the *solanum trilobatum* extract. The yield of polyphenol increases with the increase in solvent feed, solvent concentration, extraction time and microwave power upto certain level. This could be explained by the fact that when the power and time were increased, temperature was increased which made the thermal accumulation of polyphenol to degrade. Solvent was saturated with the solute after a certain level which made the polyphenol affected by the mass transfer rate. The maximum yield of polyphenol content (885.724mgGAE/100g of sample) was observed at 25ml solvent feed, 75% solvent concentration (ethanol), 4min extraction time and 320W microwave power.

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