



---

## Abstract

*Melia azedarach* fruits are gaining significant interest in medicinal field due to its treatment applications in various cardiovascular diseases, leprosy and inflammation. The objective of present study was to find the effective approach to extract polyphenols from *Melia azedarach* fruits using viscozyme under optimum conditions. Among all the applied process variables, the enzyme level and incubation time has significantly affected the extraction yield. The extraction yield was highest under optimum conditions of enzyme level (2.8 mL), incubation time (4.2 hrs), shaking speed (122.6 rpm) and liquid to solid ratio (7.4) and the influence of these independent variables on extraction yield was observed. The findings exhibited that enzyme assisted extraction technique using response surface methodology proved to be effective for extraction of polyphenols from *Melia azedarach* plant. The total phenolic contents in plant extract under enzyme assisted extraction were determined using Folin Ciocalteu reagent that was (64 mg of GAE/g of extract). The antioxidant activity of *Melia azedarach* extract was quantified using DPPH Radical Scavenging Assay and DPPH Scavenging in terms of Trolox found to be (1.17 $\mu$ g/mL) and (7.18 mg of Trolox/g of extract) respectively. The results revealed that there exist a good accordance between antioxidant activity and concentration of extract.