

The effect of solvent and duration of extraction on the efficacy of extraction of anthocyanins from *Syzygium cumini* fruits from the Northern Province of Sri Lanka

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Abstract: *Syzygium cumini* (Black plum or Naaval) (family: Myrtaceae) is one of the important medicinal plants available in Northern Sri Lanka. *S. cumini* is rich in antioxidants such as anthocyanin and many others. This study was aimed to determine the effect of solvent and duration of extraction on the efficacy of extraction of anthocyanins from two local varieties of *S. cumini* available in Ampan (Jaffna District) and Ariviyal Nagar (Kilinochchi District). Effect of solvent [water, methanol (50%,v/v) and ethanol (50%,v/v)] and duration of extraction (30, 45 and 60 min) on the extraction of anthocyanin were determined. Solvents were added to the fruit pulp and shaken at room temperature at 200 rpm. After extraction, the solvents were evaporated and anthocyanin contents were determined spectrophotometrically. Type of solvent had significant influence on the extraction of anthocyanin. Methanol gave highest extraction (extracts of sample collected from Ampan and Ariviyal Nagar contained 96.03±3.5 and 55.21±3.2 mg/g, respectively), while water gave lowest extraction (extracts of sample collected from Ampan and Ariviyal Nagar contained 54.57±4.6 and 32.25±2.2 mg/g, respectively). Effect of time on extraction of anthocyanin was not significant when ethanol and methanol were used for the sample collected from Ampan, however, extraction of anthocyanin increased significantly with increasing time when water was used as the solvent. For the sample collected from Ariviyal Nagar, time had significant effect on the amount of extraction of anthocyanin for all three solvents. According to the results, methanol found to be the best solvent for the extraction of anthocyanins from *S. cumini* fruits and the fruits collected from Ampan contain significantly higher amount of anthocyanin than fruits collected from Ariviyal Nagar. Results of this study will be helpful for further studies on incorporation of anthocyanins extracted from *S. cumini* to food products as a natural colorant with bioactivities.

Keywords: anthocyanin, bioactive compound, medicinal plant, *Syzygium cumini*