



EVALUATION OF PHENOLIC, FLAVONOID CONTENTS AND ANTIOXIDANT ACTIVITY IN LEAVES, STEM AND ROOTS OF *Solanum indicum* Linn.

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ABSTRACT: The present investigation deals with the evaluation of phenolic, flavonoid contents and antioxidant activity in leaves, stem and roots of *Solanum indicum*. Powdered samples of leaves, stem and roots were subjected to successive extraction with solvents of increasing polarities i.e. Ethanol, Water: Ethanol (Aqua- alcoholic) (20: 80) and Water (aqueous) using soxhlet apparatus. The results showed the maximum phenolic content ($12.351 \pm 0.03\%$) in Aqua-alcoholic(80: 20) extract and maximum flavonoid content ($38.658 \pm 0.05\%$) in ethanolic extract of leaves. For stem, both the maximum phenolic ($11.750 \pm 0.02\%$) and flavonoid ($2.040 \pm 0.03\%$) contents was found in Aqua- alcoholic(80: 20) extract. Similarly, the maximum phenolic ($18.651 \pm 0.03\%$) and flavonoid ($2.701 \pm 0.05\%$) contents was found in ethanolic extract of roots. The Aqua- alcoholic(80: 20) extracts for leaves and stem and ethanolic extract for roots was found to contain the maximum antioxidant activity.

Key words: *Solanum indicum*, leaves, stem, roots, phenolic and flavonoid contents, antioxidant activity.

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Phytochemicals are the naturally occurring compounds present in all plant parts and play specific pharmacological effects in human health as anti-inflammatory, anti-allergic, antioxidants, antibacterial, antifungal, antispasmodic, chemo-preventive, hepato-protective, hypolipidemic, neuro-protective, hypotensive, anti-aging, diabetes, osteoporosis, DNA damage, cancer and heart diseases, induce apoptosis, diuretic, CNS stimulant, analgesic, protects from UVB-induced carcinogenesis, immuno-modulator and carminative (Prakash et al., 2012). Phenols and flavonoids are the most widely distributed phytochemicals in plants responsible for various pharmacological activities (Saxena et al., 2013).

The antioxidant activity of plants is of much concern in present time as antioxidants protect the human body from free radicals. There is a realization that the formation of reactive oxygen species (ROS) and reactive nitrogen species (RNS) have been linked in the pathogenesis of several human diseases such as atherosclerosis, diabetes mellitus, chronic inflammation, neurodegenerative disorders and certain

types of cancer (Patel et al., 2011, Boynes, 1991). The necessity of compounds with antioxidant activity is increasing day by day. Plants contain many phytochemicals that are useful sources of natural antioxidants, such as phenolic diterpenes, flavonoids, tannins and phenolic acids (Lee et al., 2004). Polyphenols, especially flavonoids are generally known as the antioxidant agents in plant extracts (Bernardi et al., 2008).

Solanum indicum L. is commonly known as Bihata or Badi Kateri or Indian night shade and belongs to the family Solanaceae. It is an erect under shrub of 0.30 to 1.8 m in height and found throughout warmer parts of India, Asia and Africa upto an elevation of 1.5 m (Hasan et al., 2013). The national demand of *S. indicum* is 500-1000 MT per annum (Anon, 2018). All plant parts viz. berries, leaves, roots, seeds and stem of this species have been utilized in traditionally stem of medicine and are useful in various diseases such as bronchitis, asthma, dry cough, rhinitis, dysuria, leucoderma, sexual disorders, insomnia, cardiac weakness and pruritis (Anon, 1986; Bhakta, 1982; Bhattacharya, 1982 and Sharma et al., 2017). The species is among the ten medicinal plants whose roots are principally employed in preparation of Dashmularishta, a well-established