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Comparative study of secondary metabolites from different medicinal plants

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Medicinal plant play a significant role in providing primary health care services to rural people. They serve as therapeutic agents as well as important raw materials for the manufacture of traditional and modern medicine. Substantial amount of foreign exchange can be earned by exporting medicinal plants to other countries. In this way indigenous medicinal plants play significant role of an economy of country. Plants, as extracts and in various other forms, are being used for centuries in different traditional system of medicine for the treatment of human ailments, particularly those caused by pathogenic bacteria, fungi, as well as virus (Ray *et al*., 2004). Presence of various compounds and their uses has extensively been emphasized by number of workers (Despande *et al.*, 1980; Dougal, 1981; Collins, 1987). Progress in medicinal plant research has undergone a phenomenal growth during last two decades. Worldwide trend towards the utilization of natural plant remedies has created an enormous need for information about the properties and uses of medicinal plants as antitumor, antianalgesic, insecticides (Jacobson 1975), rotenoides etc. Demand on plant based therapeutics has increased many fold because they are natural products having no side effects and easily available at affordable prices (Govil *et al.*, 2002). The goal of present work is to analyze primary metabolites which are directly concerned with metabolic processes like – respiration, photosynthesis, protein and lipid synthesis.

In the proposed work different species were collected from College of Forestry, Allahabad Agricultural Institute-Deemed University, and Allahabad. Fresh leaves were washed and dried in an incubator at 37^0C and made its powder. This powder was later used for further analysis such as total soluble sugar, and chlorophyll (Sadasivam and Manickam, 1992), protein Lowry *et al.* (1951), total lipids (Bligh and Dyer, 1959), total phenols (Bray and Thorpe, 1954), starch (Dubois, 1951).

It is evident from Table 1 that higher amount of sugar was observed in the Azadirachta indica (Neem) *i.e.* 3.12% followed by *Rauwolfia serpentina* (Sarpagandha) *i.e.* 3.004 as compared to other plants while lowest was obtained from Aloe vera *i.e.* 2.872%. Highest content of chlorophyll was observed in leafs of *Rauwolfia serpentina* (Sarpagandha) *i.e.* 0.828% followed by *Ocimum sanctum* (Tulsi) *i.e.* 0.67% while lowest was obtained from Aloe vera *i.e.* 0.613%. Maximum amount of protein was estimated in *Azadirachta indica* (Neem) *i.e.* 3.592% followed by *Rauwolfia serpentina* (Sarpagandha) *i.e.* 3.156% and lowest was obtained from *Ocimum sanctum* (Tulsi) *i.e.* 2.544%. Highest amount of lipids was calculated in *Rauwolfia serpentina* (Sarpagandha) *i.e.* 7.1% followed by *Azadirachta indica* (Neem) *i.e.* 7.08% and lowest was obtained from *Ocimum sanctum* (Tulsi) *i.e.* 0.370%. Maximum amount of phenols was found in *Azadirachta indica* (Neem) *i.e.* 0.063% and followed by *Ocimum sanctum* (Tulsi) *i.e.*

Table 1 : Different components in medicinal plants

Name of plant	Amount of constituents					
	Solube sugar (%)	Chlorophyll (%)	Protein (%)	Lipids (%)	Phenols (%)	Starch (%)
Rauwolfia serpentina (Sarpagandha)	3.004	0.828	3.156	7.10	0.060	3.456
Aloe vera	2.872	0.613	3.380	1.00	0.050	3.060
Azadirachta indica (Neem)	3.120	0.614	3.592	7.08	0.063	3.492
Ocimum sanctum (Tulsi)	2.880	0.670	2.544	0.370	0.061	3.096

0.061% while lowest was found from Aloe vera *i.e.* 0.050% and starch was estimated as 3.492% in *Azadirachta indica* (Neem) and followed by *Rauwolfia serpentina* (Sarpagandha) *i.e.* 3.456% and lowest was calculated in Aloe vera *i.e.* 3.060%.

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