

Extraction of organic compounds from different medicinal plants

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SUMMARY

The plants have long served as a major source of medicinal compounds. Medicinal plants are value added for the contents and the chemical composition of their active components. Therefore, the demand of plant based therapeutics has increased many folds because they are natural products, being non narcotics, having no side effects and easily available at affordable prices. The goal of the present investigation was to estimate soluble sugar, chlorophyll, protein, lipids, phenols and starch from different plants which is presented in different proportion in plant species. The highest amount of soluble sugar, chlorophyll, protein, lipids, phenols and starch was obtained from *Azadirachta indica* (Neem), *Vinca rosea* (Sadabahar), *Azadirachta indica* (Neem), *Rauwolfia serpentina* (Sarpagandha), *Mentha avensis* (Pudina), and *Azadirachta indica* (Neem), respectively.

Key words : Soluble sugar, Chlorophyll, Protein, Lipids, Phenols, Starch

Plants 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 a 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, lipid synthesis.

MATERIALS AND METHODS

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°C and made 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 *et al.*, 1951).

RESULTS AND DISCUSSION

Highest amount of sugar was observed in the *Azadirachta indica* (Neem) *i.e.* 3.12% followed by *Rauwolfia serpentina* (Sarpagandha) *i.e.* 3.00% as compared to other plants while lowest was obtained from *Vinca rosea* (Sadabahar) *i.e.* 0.05%. Highest content of chlorophyll was observed in leaf of *Vinca rosea* (Sadabahar) *i.e.* 1.56%, while lowest was obtained from *Mentha avensis* (Pudina) *i.e.* 0.07%. Maximum amount of protein was estimated in *Azadirachta indica* (Neem) *i.e.* 3.59% followed by *Aloe vera* *i.e.* 3.38% and lowest was obtained from *Vinca rosea* (Sadabahar) and *Mentha avensis* (Pudina) *i.e.* 0.05%. Highest amount of lipids

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Table 1 : Organic compounds from different medicinal plants

Name of plant	Amount of constituents					
	Soluble sugar (%)	Chlorophyll (%)	Protein (%)	Lipids (%)	Phenols (%)	Starch (%)
<i>Azadirachta indica</i> (Neem)	3.12	0.62	3.59	7.08	0.06	3.49
<i>Vinca rosea</i> (Sadabahar)	0.05	1.56	0.05	0.05	0.02	0.08
<i>Mentha avensis</i> (Pudina)	0.09	0.07	0.05	0.02	0.09	0.01
<i>Rauwolfia serpentina</i> (Sarpagandha)	3.00	0.83	3.16	7.10	0.06	3.46
<i>Ocimum sanctum</i> (Tulsi)	2.88	0.67	2.54	0.37	0.06	3.09
<i>Aloe vera</i>	2.87	0.61	3.38	1.00	0.05	3.06

was calculated in *Rauwolfia serpentina* (Sarpagandha) i.e. 7.10% followed by *Azadirachta indica* (Neem) i.e. 7.08% and lowest was obtained from *Mentha avensis* (Pudina) i.e. 0.02%. Maximum amount of phenols was found in *Mentha avensis* (Pudina) i.e. 0.09% while lowest

was found from *Vinca rosea* (Sadabahar) i.e. 0.02% and starch was estimated as 3.49% in *Azadirachta indica* (Neem) and followed by *Rauwolfia serpentina* (Sarpagandha) i.e. 3.46% and lowest was calculated in *Mentha avensis* (Pudina) i.e. 0.01% as shown in Table 1.

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