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PHYTOCHEMICAL SCREENING OF *PROSOPIS CINERARIA* (KHEJRI) LEAF AND SEED EXTRACTS

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ABSTRACT

Plants have for infinity played a significant role for mankind generally as food and medicine. In the last few decades, there has been an exponential enhance in the field of herbal medicines for the treatment for various diseases, for these all reasons the phytochemical screening of *Prosopis cineraria* (Khejri) have been done. The results of the phytochemical screening carried out on the *P. cineraria* showed the presence of useful phytonutrients. The results showed that *P. cineraria* both methanolic and distilled water extract contained the reducing sugar, tannin and Saponins. Tannin is present in methanolic extract of *P. cineraria* but absent in distilled water extract.

Key words: *Prosopis cineraria,* phytochemical screening, phytonutrients, Medicinal plant.

INTRODUCTION

A phytochemical is a natural bioactive compound found in plant foods that works with nutrients and dietary fibre to protect against disease. Research suggests that phytochemicals, working together with nutrients found in fruits, vegetables and nuts, may help slow the aging process and reduce the risk of many diseases, including cancer, heart disease, stroke, high blood pressure, cataracts, osteoporosis, and urinary tract infections.

P. cineraria (Khejri) holds an important place in the rural economy in the northwest region of Indian subcontinent.[1] It is a very useful tree, possessing great vitality and rapid growth in its natural zone and considerable power of reproduction from coppice shoots.[2] It occurs in the dry and arid regions of India and it is a small moderate sized evergreen thorny tree, with slender branches armed with conical thorns and with light bluish-green foliage. Water-soluble

extract of the residue from methanol extract of the stem bark exhibits anti-inflammatory properties. The bark of the tree is dry, arid, and bitter with a sharp taste; cooling anthelmintic; tonic, cures leprosy, dysentery, bronchitis, asthma, leucoderma, piles and tremors of the muscles.[3] The smoke of the leaves is good for eye troubles. The bark is used as a remedy for rheumatism, in cough colds, asthma. Leaf paste of *P. cineraria* is applied on boils and blisters, including mouth ulcers in livestock and leaf infusion on open sores on the skin.[4] The plant is recommended for the treatment of snakebite. The bark is prescribed for scorpion sting.[5]

MATERIALS AND METHODS

Collection: Plant sample *P. cineraria* (Khejri) and *Helianthus annuus* (Sunflower) were collected from Chunnilal Uttarsingh, Ghat gate, Jaipur, Rajasthan in month of March, 2013.

Preparation of test extracts: Crushed powders of species were successively soxhlet extracted. Later,each of the homogenates was filtered and the residue was re-extracted twice for complete exhaustion,the extracts were cooled individually. Each filtrate was concentrated to dryness in vitro and redissolved in respective solvents, was stored at 4°C in a refrigerator, until screened for phytochemicalactivity.

Phytochemical Screening: Phytochemical screening was performed using standard procedure:

1) **Test for Reducing sugar (Fehling's Test)-**The aqueous extract (0.5gm in 5 ml of water) was added to boiling Fehling's solution (A and B) in a test tube. The solution was observed for a color reaction.

2) **Test for Tannins-** About 0.5 g of the extract was boiled in 10ml of water in a test tube and thenfiltered. A few drops of 0.1% ferric chloride was added and observed for brownish green or a blue black coloration.

3) **Test for Saponins-** To 0.5 g of extract was added 5 ml of distilled water in a test tube. The solutionwas shaken vigorously. And observed for a stable persistent froth. The frothing was mixed with 3drops of olive oil and shaken vigorously after which it was observed for the formation of an emulsion.

RESULT & DISCUSSION

Phytochemical analysis for *P. cineraria* (Khejri, leaves and seeds) extract was performed and the phyto constituents reported in the **Table no.1 & 2.** The result of the phytochemical screening of methanolic extract of *P. cineraria* is presented in **Table 1**. This reveals moderate

concentration of reducing sugar, tannin and saponins, some of which chemical compounds have been associated to antimicrobial activities and thus have curative properties against selected bacteria and fungi. Standard method were used for preliminary phytochemical screening of the extract was performed to know the phyto-constituents in the methanolic extract of leaves of *P. cineraria* are of reducing sugar, tannin and Saponins, and methanolic extract of seeds of *P. cineraria* contains reducing sugar and tannin.

The result of the phytochemical screening of distilled water extract of *P. cineraria* (leaves & seeds) is presented in **Table 2**. This reveals moderate concentration of reducing sugar and tannin, some of which chemical compounds have been associated to antimicrobial activities and thus have curative properties against selected bacteria and fungi. The phyto-constituents in the distilled water extract of leaves of *P. cineraria* contains reducing sugar and saponins, and distilled water extract of seeds of *P. cineraria* contains reducing sugar. The results of the phytochemical screening carried out on the *Gymnema sylvestre* (Gudmar), *Adiantum lunulatum* (Hansraj), *Bryonia laciniosa* (Shivlingi) showed the presence of useful phytonutrients.[6]

The phytochemical screening of medicinal plants like *Tectona grandis* (leaf and stem), *Viola odorata* L. have also been studied and showed the presence of various phytoconstituents.[7]

TABLE -1: Showing the phytochemical screening of methanolic extract of khejri (seeds and leaves)

	Name of Plants	Reducing sugar	Tannin	Saponins
1	Khejri (seeds) methanolic extract	Positive	Positive	Negative
2	Khejri (leaves) methanolic extract	Positive	Positive	Positive

TABLE-2: Showing the phytochemical screening of distilled water extract of khejri (seeds and leaves)

	Name of Plants	Reducing sugar	Tannin	Saponins
1	Khejri (seeds) distilled water	Positive	Negative	Negative
2	Khejri (leaves) distilled water	Positive	Negative	Positive

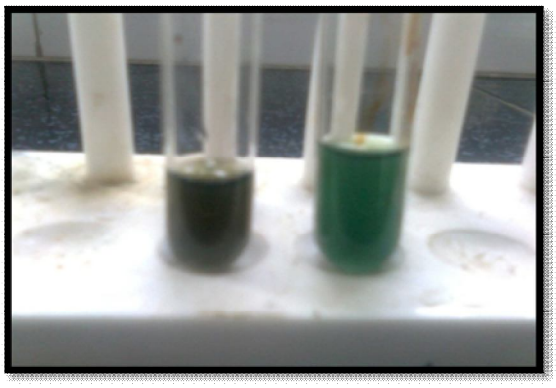

Fig.1-Showing the result of test of Reducing sugar in methanolic extract of *P. cineraria* (leaves & seeds)

Fig.2- Showing the result of test of tannins in methanolic extract of *P. cineraria* (leaves & seeds)

Fig.3- Showing the result of test of Saponins in methanolic extract of *P. cineraria* (leaves & seeds)

CONCLUSION

The present study supports the fact that methanolic extract of ***P. cineraria*** offers a presence of various therapeutically important phytoconstituents which can be use as a herbal medicines for future generation. Methanolic extract showed the presence of reducing sugar, tannin & Saponins phytoconstituents.tannins have been found to form irreversible complexes with proline rich proteins resulting in the inhibition of protein synthesis [8]. Parekh and chanda 2007 reported that tannins are known to react with protein to provide the typical tannin effect which is important for the treatment of inflamed or ulcerated tissue [9]. Herbes that have tannins as their main components are astringent in nature and are used for treating intestinal disorders such as diarrhea and dysentery [10].

Saponin and Reducing sugars were found to be present in these plant extracts exhibited a wide range of biological activities like anti-inflammatory, antimicrobial, anti-allergic,

analgesic, and antioxidant properties [11]. Further pharmacological investigations are essential to elucidate the mechanism of action.

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