PHYTOCHEMICAL INVESTIGATION OF *AGERATUM CONYZOIDES* LEAVES EXTRACT

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ABSTRACT
Ageratum conyzoides belongs to family Asteraceae. Phytochemical evaluation is to confirm the presence of various chemical constituent present in plant. Phytochemical analysis listed in Table No.1. Due to higher polarity of methanolic extract show revealed presence of maximum phytochemical composition specially alkaloid, phytosterols, coumarines and glycosides. These phytoconstituents independently responsible for the broad range of medicinal properties.

Keyword:- *Phytochemicals, methanolic,screening,extract ets.*

INTRODUCTION-

Ageratum conyzoides belongs to family Asteraceae .The genus Ageratum is derived from the Greek words 'ageras' meaning non-aging which refers to long life-time of plant and the species epithet 'konyz' is the Greek name of Inula helenium which resembles the plant. Ageratum conyzoides Linn. (Family Asteraceae, Tribe Eupatoriae) is an annual herb with a long history of traditional medicinal use in the tropical and sub-tropical region of the world, commonly known as Billy goat weeds. The stem and leaves of the plant are covered fully with fine white hairs. It is an annual branching herb which grows to approximately 1 m in height. The stems and leaves are covered with fine white hairs. The leaves are ovate and the flowers are purple to white.

Ageratum conyzoides has long been known in herbal or folk medicine as a remedy for various ailments in Africa (Almagboul *et al*, 1985). It has been alternative medicine for treatment of epilepsy, wounds and also as an insect repellent. The leaves are applied to burn, cut, sore and throat infection.(Adetutu,A et al, 2012)

The medicinal plants are useful for healing as well as for curing of human diseases because of the presence of phytochemical constituents (Nostro A et al, 2000). Phytochemicals are naturally occurring in the medicinal plants, leaves, vegetables and roots that have defense mechanism and protect from various diseases. Phytochemicals are primary and secondary compounds. Chlorophyll, proteins and common sugars are included in primary constituents and secondary compounds have terpenoid, alkaloids and phenolic compounds (Krishnaiah D et al ,2007). Terpenoids exhibit various important pharmacological activities i.e., anti-inflammatory, anticancer, anti-malarial, inhibition of cholesterol synthesis, anti-viral and anti-bacterial activities (Mahato SB & Sen S, 1997). Terpenoids are very important in attracting useful mites and consume the herbivorous insects (Kappers IF et al ,2005). Alkaloids are used as anaesthetic agents and are found in medicinal Plants (Hérouart D et al ,1988). The fresh leaves are rubbed between both palms until well macerated; the juice is squeezed into the wound and covered by a bruised but intact leaf. Dressing this is generally done once a day and the process of healing is said to be enhanced. demonstrated the effectiveness of crude extract of this plant in inhibiting the growth of *Staphylococcus aureus* a major wound pathogen in in-vitro cultures of the organism.(Durodola J.J,.1977).

The essential oil of the leaves or aerial parts of the plant has been widely investigated for its composition and biological activities. The major constituents generally found are the chromenes,precocene I and precocene II, and the sesquiterpenes caryophylleneand germacrene-D (Okunade, 2002). The main activity described in the literature for the essential oil is the insecticide (Lima et al.,2010; Liu and Liu, 2014)

MATERIAL AND METHOD

Collection of plant material

The fresh leaves of Ageratum conyzoides plant were collected from Melghat region Dist-Amravati (Maharashtra) The experimental site is located between coordinates 20.91° N, 77.75°E and an altitude of 342 m in foothills of Central India experiencing the subtropical climate during winter season in the month Feb 2016 and the Authentication of plant was confirmed by botanist (Dr.S.K Tippat, Department of Environment Science, Art, Commerce & Science College Amravati).

Preparation of plant extract

The plant were dried over ambient temperature and the dried sample were grind properly and dried powder sample was extracted in Methanol at 65ºC, by using soxhlet apparatus and extracts were concentrated by gradually evaporating the respective solvent on rotary evaporator . The concentrated extract was collected in sterile bottles and kept in a cool and dark place prior to analysis. (U.S.Khandekar et al 2015)

PHYTOCHEMICAL ANALYSIS (QUALITATIVE ANALYSIS)

Test for Alkaloids: - 0.4 g extract of each plant was mixed with 8 ml of 1% HCl, warmed and filtered. 2 ml of each filtrate was titrated separately with (a) Mayer's reagent and (b) Dragendorff's reagent (c) Wagner Test, Yellow precipitation for Mayer's reagent, Red precipitation for Dragendorff's reagent and formation of brown / Reddish precipitate for Wagner reagent was observed to indicate the presence of alkaloids. (Harborne, 1973)

Determination of flavonoids: - Two methods were used to determine the presence of flavonoids in the plant sample. (Sofowara, 1993)

Cyanide test:-Put small pieces of magnesium ribbon into extract of sample and few drop of con HCl .The presence of bubble clour ranging from orange to red with indicate flavonoids .Red to crimson indicate presence of flavonoids. Crimson to magenta indicate presence of flavonoids Green or blue was presence reaction either aglycone. (Shah et al 2011)

Test for Phenolic(Tannins) compound

Ferric chloride test: - The extract (50 mg) is dissolved in 5 ml of distilled water. To this, few drops of neutral 5% ferric chloride solution is added. A dark green color indicates the presence of phenolic compounds.

Lead acetate test: - The extract (50 mg) is dissolved in distilled water and to this, 3 ml of 10% lead acetate solution is added. A bulky white precipitate indicates the presence of phenolic compounds.

Gelatin test: - To the extract 1% gelatin solution containing sodium chloride was added. Formation of white precipitation indicates the presence of tannins. (W.C Evans et al 1989)

Test for steroids: - 0.5 ml of the each extract was dissolved in 3 ml of chloroform and was filtered. To The filtrate, concentrated sulphuric acid was added by the sides of the test tube, which formed a lower layer. A reddish brown colour ring with a slight greenish fluorescence was taken as the indication for the presence of steroids. (Sazada S et al 2009)

Test for terpenoids (Salkowski test):- 5 ml (1 mg/ml) of each extract was mixed in 2 ml of chloroform, and then 3 ml concentrated H_2SO_4 was carefully added to form a layer. A reddish brown colorations of the inter face was formed which showed positive results for the presence of terpenoids. (Harborne, 1973)

Test for Saponins:-

Foam Test: - 0.5 gm of extract was shaken with 2 ml distilled water if foam produce persist for ten minute it, indicated the presence of saponins. (Trease, GE and Evans WC, 1989)

Test for glycosides:-

Legal's Test: - Extracts were treated with sodium Nitropruside in pyridine and sodium hydroxide. Formation of pink to blood red color indicates the presence of cardiac glycosides. (Trease, GE and Evans WC, 1989)

Table 1.Phytochemical analysis of *Ageratum conyzoides*

S.N	Phytochemical	Tests performed	Methanolic extract
1	Alkaloids	Mayer Test	+
		Dragendroff's Test	++

		Wagner Test	+++
2	**Flavonoids**	Ferric Chloride	-
		Alkaline reagent test	-
		Lead Acetate	-
3	**Tannins**	Ferric Chloride Test	-
		Gelatin Test	-
4	**Terpenoids**	Salkowski Test	+
5	**Phytosterols**	Liebermann Buchard Test	++
6	**Chalcone**	----	-
7	**Cumarine**	Fluorescence test	+++
8	**Glycosides**	Legal test	+++

CONCLUSION

The presence of various bioactive compounds in the *Ageratum conyzoides* justifies the use of whole plant for various ailments by traditional practitioners. The species is believed to possess various biological activities starting from its various phytochemical contents. The extract is found to contain various phytochemicals like alkaloids, terpenoids, phytosterols, cumarine and glycosides. It offers many opportunities to investigate the various functions and prospects in pharmaceutical studies.

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