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Research Article

PHYTOCHEMICAL SCREENING IN SOME CUCURBITACEAE MEMBERS

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Abstract: A Phytochemical is a natural bioactive compound produced by plant body as secondary metabolites (mostly in fruits, vegetables and nuts) that works with nutrients and dietary fibre to protect against pathogenic attack. Phyochemicals are usually associated to plant pigments. So, fruits and vegetables thats are bright colours – yellow, orange, red, green, blue and purple. Current article deals with the Phytochemical screening of cucurbitaceae members viz. *Lagenaria vulgaris, Luffa acutangula and Momordica subangulata.* The Phytochemical test of these plants were carried out by standred methods with reference to Alkaloids, Flavonoid, Saponin, Tannin, Carbohydrates, Glycoside, Anthocyannin, etc.

Key**words:** Cucurbitaceae*, Lagenaria vulgaris, Luffa acutangula, Momordica subangulata,* Phytochemicals

INTRODUCTION

India is the largest producer of medicinal herbs and appropriately called the Botanical garden of the world[1]. Pharmacognostical study is the preliminary step in the standardization of crude drugs. Since ancient times plants have been traditionaly used in therapeutic practices for the treatment of different types of ailments [2-6]. There are a number of crude drugs where the plant source has not yet been scientifically identified. A phytochemical is a natural bioactive compound found in plants foods that works with nutrients and dietary fibre to protect against diseases. Many researchers suggest that, phytochemical working together with nutrients found in fruits, vegetables and nuts. They can have complementary and overlapping mechanism of action in the body including antioxidant effect. Hence here is an attempts have been done for preliminary phytochemical screening of alcoholic and aqueous extracts was performed from *Lagenaria vulgaris, Luffa acutangula* and *Momordica subangulata* plants of Cucurbitaceae family. Phytochemicals are non-nutritive plant chemicals that have protective or disease preventive properties some of the well known of them are Lycopene in tomato, isoflavones in soy & flavonoids in fruits[7]. Recently, the perform of traditional herbal medicines became popular throughout the world.

Family cucurbitaceae consist of various sqashes, melons and gourds including crops such as cucurbits, pumpkins, luffas and watermelon. The family predominantly distributed around the tropics, were those with edible fruits were among the earliest cultivated plants in both the old and new worlds. It is an important family consisting 125 genera and 960 species, mainly in regions tropical and subtropical, all species are sensitive to frost. Most of the plants in this family are annual vines, but there are also woody lianas. Thorny shrubs and trees (Dendrosicyos). Many species have large, yellow or white flowers. The stem are hairy and pentangular, tendrils are present at 90 degree to the leaf petioles at nodes, leaves are exstipulates, alternate, simple, palmately lobed or palmately compound, the flower are unisexual with male and female flowers on different plants (dioecious) or on the same plants (monoecious). The female flowers have inferior ovary. The fruits are often a kind of modified berry called pepo[8].

MATERIALS AND METHODS

Plant Material and Extraction

The leaves of *Lagenaria vulgaris, Luffa acutangula, & Momordica subangulata* were collected from in and around Satara. The dry leaf powder was successively extracted with distilled water & Alcohol. These extract was then used for phytochemical tests.

Screening for phytochemical analysis

The plant extract was subjected to qualitative tests adopting standard procedure for the identification of the phyto constituents present in plants by Harborne [9] & Kokate *et al.* [10].

RESULTS AND DISCUSSION

Phytochemical screening is of paramount importance in identifying new source of compound having medicinal significance, to make the best and judicious use of available natural wealth. Phytochemicals are non-nutritive plant chemicals that have protective or disease preventive properties. Plant produces these chemicals to protect itself, but recent research demonstrates that many phytochemicals can protect human against various diseases. A general screening conducted to characterize chemical composition of *Lagenaria vulgaris, Luffa acutangula & Momordica subangulata* leaves. Results of phytochemical analysis of alcoholic and aqueous dried leaf extracts of cucurbitaceae members are shown in Table 1.

Table 1: Preliminary phytochemical studies of aqueous leaf extracts of *Lagenaria vulgaris, Luffa acutangula* and *Momordica subangulata*

Sr. No.	Test		*Lagenaria vulgaris*	*Luffa acutangula*	*Momordica subangulata*
1	**Alkalaloids**				
		Mayer's reagent	-	-	-
		Wagner's reagent	-	-	-
		Dragendof's reagent	+	+	+
2	**Flavonoids**		-	-	-
3	**Tannin**				
		Lead acetate	+	+	+
		KOH	-	-	-
4	**Carbohydrates**				
		Molisch's test	-	-	-
		Barfoed's test	+	+	+
		Bials test	+	-	-
		Benedict's test	+	-	-
5	**Saponin**				
		Frothing test	+	+	+
		Emulsion	-	-	-
6	**Anthocyanin**		-	-	-
7	**Steriods**		-	-	-
8	**Terpenoids**		+	+	+
9	**Triterpenoids**		+	+	+

The Phytochemical analysis of above three plants showed the presence of Alkaloids, Tannis, Carbohydrades, Saponin in aqueous extracts only, Steriods in alcoholic similar kind of results recorded in *Ipomoea obscura* by Mungole *et al.* [11], Terpenoids, Triterpenoids in aqueous extracts only (Table 1 & 2.). Similar kind of work done by Thite *et al.* [12] on 7 crude plant drugs available in market. It is well documented that the presence of these chemicals is responsible for various medicinal properties and reported time to time by various researchers. There are many reports available to support the role of phytochemicals constituents and their activity against specific disease[13].

Lagenaria vulgaris (bottle gourd) have some medicinal properties such as, the pulp around the seed is emetic & purgative. A poutice of the crushed leaves has been applied to the head to treat headaches. The flowers are an antidote to poison. The stem, bark and the rind of the fruits are diuretic; the fruit are antilithic, diuretic, empetic and refrigerant. Extract of the plant have shown antibiotic activity. In many parts of china 3 gms per day of this species has been as single treatment for diabetes mellitus[14]. It is evidence from result that *Lagenaria vulgaris* shows the presence of carbohydrates, saponin and triterpenoid in aqueous extract only while, these are found absent in alcoholic extract. Only alcohol soluble steroids found present in this plant.

Luffa acutangula (ridge gourd) another Cucurbitaceous member shows the medicinal properties as below- the ridge gourd is endowed with number of medicinal properties & used in a variety of home remedies, all parts of ridge gourd plant, fruits , leaves, seeds & even roots are used for their medicinal property. Ribbed gourd has diuretic property. Ridge gourd is used as an expectorant & hypoglycaemic. Ridge gourd is used as bitter tonic. Seeds ridge are used as laxative & purgative. It is evidence from result that *Luffa acutangula* shows similar kind of result that of *Lagenaria vulgaris* for triterpenoid and steroids. Aqueous extract of *Momordica subangulata* (bitter gourd) shows similar kind of result that of *Luffa acutangula* for all phytochemicals studied. In alcoholic extracts only alkaloids have shown different trends than that of *Luffa acutangula* (Table 1)

Bitter gourd is effective in treating skin diseases or skin infection, eczema & psoriasis. It also helps in keeping the skin free from blemishes & keeps the skin glowing. Bitter gourd has blood purifying properties. As a result, the juice is used in the treatment of blood disorders like blood boils & itching due to blood poisoning. Ayurvedic doctors also prescribe bitter gourd juice for digestive problems & to boost resistance because it contains cellulose which is very good source of fibre. Thus it is preventing constipation. It also helps stimulating the secretion of gastric juices. Bitter gourd contains a chemical called "Charantin" which lower the urine & blood glucose levels & hence the best home remedy for diabetes. Fresh juice of bitter gourd is good for patients suffering from piles[15].

CONCLUSION

Aqueous extracts shows good results regarding presence of phytoconstituents hence these plants may directly use in medicine preparation or for the development of novel agents

for various pathological disorders. Further research on the health benefits of phytochemicals in Cucurbitaceous members may be warranted.

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