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A Review on Phytopharmacological Evaluation of Lantana Camara Leaves' Smoke

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Abstract: *Lantana is considered one of the most important medicinal plants in the world. This plant has been used in different communities to treat different diseases. Plants have been found to have antibacterial, antitumor, antifungal, anthelmintic, antihyperglycemic and antioxidant activities. Smoke from the leaves of plants has also been found to be effective against mosquitoes. Current research was conducted to assess the phytochemistry of leaf smoke. This study revealed the presence of some compounds from the smoke. It was found that the acetone extract contained several alkaloids, the methanol extract contained tannins, flavonoids, alkaloids and sterols, and the aqua extract contained only flavonoid. Further studies are needed to determine the structural composition, mechanism of action, and effects of these compounds in the in vivo environment.*

Keywords: Lontanocomura, leaves, phytochemicals, smoke.

I. INTRODUCTION

Lantana camara (Figure 1) has been named as one of the maximum critical medicinal alants withinside the world. The plant has been utilized in diverse groups for remedy towards diverse diseases, The plant has. been determined to have antibacterial hobby, anticancer hobby, anti-fungal hobby, anthelmintic hobby, anti hyperglycemic hobby and antioxidant hobby. The plant`s leaves smoke has additionally been determined to have mosquito repellent hobby.

Fig.1

Medicinal plants are available in nature and therefore the grand's have information about their medicinal value traditionally. the data about natural healing methods was passed from grand's to children and grandchildren from one generation to a different. With growing knowledge on technology and civilization this information transfer isn't any longer taken seriously within the society, hence, endangering the knowledge of traditional methods of treatment, one in all them is that the use of medicinal plants. This concerns a good have to have the knowledge on medicinal plants reserved and kept for future reference. The utilization of traditional plants has been practiced since yore, however; the isolation of active compounds like morphine, quinine and alkaloids within the past 200 years ushered within the dawn of a replacement era within the use of medicinal plants and marked the start of recent research within the use of plants to cure diseases.

Out of the 600 species of medicinal plants from 125 families tested against P.gallinaceum in chicks, P.cathemerium and P.lophurae in duckling 33 species were found to possess high potential within the treatment against the microbes, with the very best being plants amaryllidaceae and simaroubaceae family. With the rise in diseases caused by the modes of living and emerging drug resistant microbes, back-to nature is becoming a standard acronym for several people within the world today. the employment of plants within the past clearly expresses the fascinating relationship between mankind and plants since times of yore. because of lack of clear knowledge of the mode of treatment of certain plants, people within the past have attributed the healing of diseases using medicinal herbs to supernatural forces because of their

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indisputable healing capability. Medicinal plants have since history been wont to treat many illnesses which affect humankind even today. Many traditionalists have done this for quite it slow and thus prevented many deaths within the past few decades. However, this has been finished little scientific prove on the efficacy and therefore the toxicity of the extracts on the affected individuals.

Plants are known to possess multiple medicinal properties, hence, enabling them to possess several uses within the pharmaceutical industry. Studies on several plants are done everywhere the planet and plants have shown great potential within the treatment of diseases affecting both humans and animals. Study reports on plants have shown them to own anti-hyperglycemic, hypoglycemic, anti hyperlipidemic, antitumor, antioxidant, anti-inflammatory and anti-ulcerogenic properties. the employment of medicinal plants is as old as man. within the past few decades medicinal plants are tested extensively and located to own several pharmacological uses, like antibacterial activity, antifungal activity, anti-diabetic activity, anticancer activity, antioxidant activity, hepatoprotective activity, haemolytic activity, anti-inflammatory activity, larvicidal activity, anthelmintic activity, central systema nervosum activity and pain relief activity.

Herbal medicine remains a matter of argument within the current world with many still skeptical on its efficiency. This has been thanks to greedy practitioners who want to become wealthy by pretending to understand much about the diseases which their clients claim to possess, hence, resulting in the appliance of wrong treatment and administration of wrong drugs which don't cure the patient and thus resulting in the worsening of matters or perhaps the death of the victim. Much scientific data must be provided. so as to make the needed confidence within the use of medicinal plants.

Many side effects related to allopathic medicines and dependencies are common reasons why many folks are hospitalized today. so as to counteract the consequences many of us are now turning to nature in pure form to forestall and cure diseases: using natural medicinal herbs or natural health alternatives.

The use of smoke within the preservation of foodstuffs: has been in use, especially within the developing countries with great success. Traditionally cereals like maize are put within the kitchen roofs which use firewood as fuel. When the firewood is burnt plenty of smoke is produced which upon coming into contact with the cereals they form a protective layer on top the cereals hence protecting it from insects. the utilization of volatile compounds are studied within the past and proved to possess significant repellent effect. the employment of Lantana camara has been found to own immense repellency against female Anopheles mosquitoes. Traditionally, people inhale the smoke of certain parts of plants in treatment of varied diseases. the present study was done to research the phytochemical composition Lantana camara leaves smoke.

II. MATERIALS AND METHODS

2.1 Sample Collection and Preparation:

The herb was randomly collected within the natural forest around University of dr. Babasaheb Ambedkar. The plant samples were collected and identified by a taxonomist within the academic department dr. Babasaheb Ambedkar University. The samples were allowed to dry at temperature under a shade. The dry samples were then crushed in fine powder and stored in tightly. sealed polyethylene bags.

Fig. 2

2.2 Extraction Procedure

The plant smoke was harvested by burning it under an inverted glass filter funnel. The funnel was connected to a conical flask containing different solvent, one at a time (Fig.2). A pump was connected to the conical flask so as to make a partial vacuum within the flasks hence sucking within the smoke through the solvent. Each incoming pipe was dipped into the

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solvent and therefore the un-dissolved smoke sucked from the highest of the flask through the leaving pipe to the subsequent conical flask. This process was allowed to continue flask. This process was allowed to continue until the solvents turned color, indicating presence of dissolved matter. The resulting solution was then concentrated employing a rotor vapor machine and therefore the extracts obtained and stored in a very refrigerator at 4°C, to be later used for the analysis.

Fig. 2

Boiling. The mixture was then filtered and 1% of fecl3 was added to the filtrate and observations made. At brownish green color or a blue, black coloration indicated the presence of tannins.

2.3 Qualitative Phytoconstituents Analysis

The extracts' phyto-constituents: analysis for identification of bioactive chemical constituents was done using standard procedures with slight modifications.

- **Tannins:** About 0.5 g of the sample was put in an exceedingly tube and 20 ml of water was added and heated to
- **Saponins:** The crude extract was mixed with 5 ml of water and vigorously shaken. The formation of stable form indicated the presence of saponins.
- **Flavonoids:** A portion of the aqueous extract was added during a tubing. To this, 5 ml of dilute ammonia and a pair of ml of concentrated acid was added. the looks of a yellow color indicated the presence of flavonoids,
- **Terpenoids:** The extracts of the stuff were taken during a clean tubing, 2 ml of chloroform was added and vigorously shaken then evaporated to dryness. To this, 2 ml of concentrated acid was added and heated for about 2 minutes. A grayish color indicated the presence of terpenoids.
- **Glycosides:** Salkowsks' test: The solvent extract of the material was mixed with 2 ml of chloroform so 2 ml of concentrated oil of vitriol was carefully added and shaken gently, then the observations were made. A red brown color indicated the presence of the steroid ring (glycone portion of glycoside)
- **Alkaloids:** The crude extract was mixed with 1% of HCI during a tube. The tubing was then heated gently and filtered. To the filtrate, some drops of Mayer's and Wagner's reagents were added into the tube. A resulting precipitate confirmed the presence of alkaloids,
- **Steroids:** Liebermann Burchard reaction: About 2 g of the mixed with 2 ml of a combination of carboxylic acid then. concentrated acid is added along the side of the tube. Blue green ring indicated the presence extract was put in an exceedingly tubing and 10 ml of chloroform was added and filtered, then 2 ml of the filtrate was of steroids.
- **Phenols:** The plant's solvent extract was put during a tube and treated with some drops of twenty-two of FeCl, Formation of bluish green coloration indicated the presence of phenols.

III. RESULT

From the study the plant leaves smoke was found to contain several compounds (table 1). Acetone extract was found to contain only alkaloids, methanol extract was found to contain tannins, flavonoids, alkaloids and steroids while the aqua extract contained only flavonoids.The presence of those important phytochemicals is a sign of the nice pharmacological importance of the plant when utilized in the standard way.

Alkaloids which are secondary metabolites, they'll be defined as cyclic compounds which have nitrogen in a very negative oxidation number. They affect the chemical transmitters' action of the system. They even have other pharmacological

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activities like analgesic, antispasmodic, antihypertensive, anti arrhymic and antibacterial effects. Alkaloids are found to own antimalarial activity. The compounds have also been used clinically to treat malaria, colic and stomach ulcers and employed in anticancer drugs. consistent with Karou , much study has been done on pharmacological properties of alkaloids on antiprotozoal, cytotoxic and anti-inflammatory properties.

Phytochemical	Acetone	methanol	water
Tannins	-	+	-
Saponins	-	-	-
Flavonoids	-	+	+
Terpenoids	-	-	-
Glycosides	-	-	-
Alkoloids	+	+	-
Sreroids	-	+	-
Phenols	-	-	-

Table.1

Alkaloids are isolated from different plants and their medicinal values tested. the foremost important use of alkaloids already known with its originality from plants is that the use of alkaloids compounds within the treatment of malaria. consistent with Ameyawn, many of the antimalarial drugs used today are alkaloids derived from plants. Alkaloids are identified for his or her functions, which include analgesic, anti-plasmodic and anti-bacterial activity. consistent with Ayitey, bitter leaves containing alkaloids are capable of reducing headache related to hypertension.

Flavonoids will be used as anti-diabetic. consistent with Namki , flavonoids may be accustomed prevent synthesis of flavours that are caused by fat oxidation. Flavonoids are found to possess antibacterial activity thanks to their ability to complex with extracellular and soluble proteins and to complex with bacterial cell membrane. Flavonoids are produced by plants in response to microbial infection and studies have shown that they need antibacterial activity against a good range of micro-organisms. Flavonoids are known to contain specific compounds called antioxidants, which protect human, animal and plant cells against the damaging effects of free radicals. Imbalance between free radicals and antioxidants results in oxidative stress, which has been related to inflammation, autoimmune diseases, cataract, cancer, brain disease, aging and arteriosclerosis. It also plays a task in heart diseases and neurodegenerative diseases. Flavonoids have also vasodilator activity, a property which is beneficial in improving blood circulation within the brain and in Alzheimer disease. Several isoflavone is accustomed improve blood circulation. Furanocoumarins a sort of flavonoids has been found to inhibit growth of tumor in mice. Free radicals, including the hydroxyl, peroxide, superoxide and lipid peroxide are related to variety of diseases like disorder, cataracts, diabetes, gastrointestinal inflammatory diseases, cancer, asthma, disease, devolution, periodontal disease and other inflammatory process.

Tannins also are secondary metabolites in plants. they're glycosides of garlic or protocatechvic acids. There astringent property makes them useful in preventing diarrhea and controlling hemorrhage thanks to their ability to precipitate proteins, mucus and constrict blood vessels. this is often the rationale why traditional healers use plants rich in tannins to treat wounds and burns since they're able to cause clotting. Some tannin has been reported to inhibit HIV replication selectively besides the employment of diuretics. This shows how traditional medicinal plants rich in tannins may be accustomed control this dangerous disease. Tannins have also shown antiparasitic effects. per Bajal , tannins can even be wont to protect the kidney since when taken the polio virus, herpes complex virus and various enteric viruses are inactivated. Foods rich in tannins are often accustomed treat hereditary hemochromatosis, which may be a genetic disorder characterized by excessive absorption of dietary iron. per Chung , many tannin molecules are shown to scale back the mutagenic activity of variety of mutagens. The anti-carcinogenic and anti-mutagenic potentials of tannins is also associated with their antioxidative property which is very important in protecting cellular oxidative damage including lipid peroxidation. The growths of the many fungi, yeast, bacteria and viruses are proven to be inhibited by tannins. Tannins have also been reported to exert physiological effects, like to accelerate pressure, decrease the serum lipid level, and produce liver necrosis and module immune responses. The dosage and sort of tannins are critical to those effects

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IV. CONCLUSION

From the results obtained in this study, it can be said that the presence of these important phytochemicals makes the smoke of Lantana camara very useful as a remedy. The resistance to plant smoke noted by Akumu may be directly due to the presence of these compounds. The data obtained in this study provide the scientific basis for the traditional use of plant smoke to preserve cereals. The methanol extract had better repellent activity than all other solvents used, an observation clearly supported by the present study which included methanol. The extract was found to have the highest number of phytochemicals in the current study. According to the results obtained in the present study, compared with the previous study on plant smoke, it should be the present study, compared with the previous study on plant smoke, it should be concluded that the pharmacological activity of plant smoke may be due to the synergistic effect of two or more phytochemicals. Further research is needed to determine the exact active compounds, their pharmacological value, mode of action, and in vivo toxicity.

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