ABSTRACT

The present paper shows alkaloids, flavonoids, glycosides, phenol, lignins, saponins, sterols and tannins were presented. Mostly all main types of secondary metabolites were chloroform, methanol, and distilled water through cold percolation method and found different types of secondary metabolic compounds. These are present in this research.

INTRODUCTION

Medical field is the broad spectrum in which different areas are presented like allopathic, ayurvedic and unani etc. But today, nearly about 80% population believes in ayurvedic medicines or traditional medicines that are prepared from plant materials. It does not show any side effect in human body [WHO; 1993]. Therefore, it is true that the plants have important role in human lifespan and human health. The primary and secondary metabolites show key role in plant metabolic activity by which it produces different types of energy and useful products.

Different types of plant products are used by animals and human as a feeder. Growing plants had been one of the cheapest sources of feeding for animals having crude protein of 14-25% [Abdu SB. et al.; 2007, Simbayj J]; 2002]. It had been estimated that vitamins and minerals are lacking in grassland pastures [Keye RW; 1989].

Different types of medicinal plants are found all over the world but their uses are not known to all the people. Plants have two types of metabolites, one of which is primary and secondary. Primary metabolites are directly involved in plant activities while secondary are not involved.

Ziziphus is one of which that is found in all over the world and have medicinal activity. Ziziphus mauritiana Lam. is one of which that is grown in dry places. It has different morphological changes by which it is divided into different species. It is generally used for feeding cattle, camel, goats getting resistance power against different types of pathogens [Morton J.; 1987]. Ziziphus mauritiana Lam. belongs to the family of Ziziphus and to the kingdom; plantae, order; roasles; division; magnoliophyta, class; magnoliopsida, family; rhamnaceae, genus; Ziziphus, species; mauritiana. It is fast growing tree which is almost evergreen, but is deciduous during the dry season. Its height can reach up to 12 meter to 30 cm diameter at breast height [Singh J.P. 1973]. The leaves of mauritiana Lam. had been also used in the treatment of liver diseases, asthma and fever [Morton; 1987]. Different types of valuable contents as like carbohydrates, starch, proteins, sugar, mucilages and vitamins are abundantly found in ziziphus species [Clifford S.C. Paper-Characterization; 2002]. Fruits are useful in burning sensation, hyperdipsia, consumption, vomiting, constipation, flatulence, dyspepsia, nausea, leprosy, thirst, fatigue, pruritis, wounds and ulcers. Seeds are also useful in the treatment of encephalopathy, ophtalmopathy, cough and asthma, burning sensation, diarrhoea, vomiting, general debility and insomnia. Ziziphus mauritiana Lam. bark is useful in dysentery, diarrhoea, gingivitis, boils and ulcers [Kapoor LD.; 2005, Nadkarni KM.; 2002, Khare CP; 2004, Bhattacharjee SK; 2004, Sheth A.; 2005]. Ziziphus mauritiana Lam. bark has the compounds that can be used in the treatment of cancer. Cancer is the main problem all over the world.

MATERIAL AND METHODS

Collection of Plant Material

Ziziphus mauritiana Lam. is found all over the world. I had collected the plant barks material from Mandsaur district, Madhya Pradesh. Mandsaur District forms the northern projection of Madhya Pradesh. It lies between the parallels of latitude 23° 45' 50'' North and 25° 2' 55'' North, and between the meridians of longitude 74° 42' 30'' East and 75° 50' 20'' East.

Preliminary Screening of Secondary Metabolites

The plant bark was dried and powdered using mixer grinder, and subjected to cold percolation process for 48 hours with petroleum ether, chloroform, methanol and distilled water. After this process, the extracts were filtered and used for preliminary phytochemical screening such as alkaloids [Iodine, Wagner, and Dragendorff's test], flavonoids [Pew's, Shinoda and NaOH tests], glycosides[Keller-Killiani, Gne. H₂SO₄, and Molisch tests], lignin [Labat and Lignin tests], phenols [Ellagic acid and Phenol tests], saponins [Foam and Haemolysis test], sterols [Liebermann- Burchard, and Salkowski tests], tannins [Gelatin and Lead acetate tests] were carried out [Shashank Bhatt et. al,2011].

Preliminary Screening of Phytochemical Test

Phytochemical Screening

The filtrate obtained was subjected to preliminary phytochemical screening.

Test for Alkaloids

Iodine Test: A few drops of dilute iodine solution were added into 3 ml test solution added. Blue colour appeared; and disappeared on boiling and reappeared on cooling [Khandewal K.R., 2008].

Wagner's Test: Few drops of Wagner's reagent were added into 2 to 3 ml extract. Formation of reddish brown precipitate indicates the presence of alkaloids [Kokate C. K. et. al; 2001].

Dragendorff's Tests: Few drops Dragendorff's reagent were added into 2 to 3 ml extract. Formation of reddish brown precipitate indicates the presence of alkaloids [Kokate C. K. et.al; 2001].

Test for Flavonoids

Pew's Tests: Zinc powder was added into 2-3 ml extract, followed by drop wise addition of conc. HCl. Formation of purple red or cherry colour indicates the presence of flavonoids [Peach K., Tracey MV. 1956].

Shinoda Tests: 2-3 ml extract and few fragments of magnesium metal were added into a test tube, followed by dropwise addition of
concentrated HCl. Formation of magenta colour indicates the presence of flavonoids [Kokate C. K. et al; 2001].

NaOH Tests: 2-3 ml of extract and few drops of sodium hydroxide solution were added into a test tube. Formation of intense yellow colour that became colourless on addition of few drops of dilute HCl indicates the presence of flavonoids [Khandewal K.R., 2008].

Test for Phenols

Ellagic Acid Test: The test solution was treated with few drops of 5% (w/v) glacial acetic acid and 5% (w/v) NaNO2 solution. The solution turned muddy or niger brown precipitate occurred in the extract. It indicates the presence of phenols solution [Gibbs R.D., 1974].

Phenol Tests: 0.5 ml of FeCl3 (w/v) solution was added into 2 ml of test solution, formation of an intense colour indicates the presence of phenols [Gibbs R.D., 1974].

Test for Lignins

Lignin test: 2 ml of 2% (w/v) furfuraldehyde was added into the test solution. Formation of red colour indicates the presence of lignin [Gibbs R.D., 1974].

Labat test: The test solution was mixed with gallic acid; it developed olive green colour indicating the positive reaction for lignins [Gibbs R.D., 1974].

Test for Tannins

Flavonoids have inherent ability to modify the body’s reaction to allergen, virus and carcinogens. They show ant-allergic, antimicrobial and anticancer activity by which it can be used for different diseases that is generally found in bark.

Tannins have general antimicrobial and antioxidant activities [Rievere et al; 2009].

Current reports show that tannins may have potential value such as cytotoxic and antineoplastic agents [Aguinaldo et al, 2005]. Saponins have antifungal properties [Aboada and Efutwape, 2001; Mohanta et al, 2007]. These contents are shown different types of activity against different pathogens. Therefore, it can be used in the treatment of diseases.

Saponins are used in hypercholesterolemia, hyperglycemia, antioxidant, anticancer, anti-inflammatory and weight loss etc. according to medical field. It is a bioactive antibacterial agents of plants [Mandal et. al; 2005; Manjunatha, 2006].

Plant steroids have cardiotonic activity, possess insecticidal and antimicrobial properties. It is generally used in herbal medicines and cosmetic products (Gallow; 1936).

Phenolic compounds have anti-oxidative, antidiabetic, anticarcinogenic, antimutagenic and anti-inflammatory (Arts and Hollman; 2005; Scalbert et. al; 2005).
CONCLUSION
According to this research work I have concluded that different types of secondary metabolites are present that have different specific functions against pathogens, bacteria, viruses etc. mostly all secondary metabolites are present in the mauritiana bark that can be used in the treatment of cancer, allergy most common diabetic mutation and other bacterial and virus disease. The plant bark should be used in the preparation of medicinal drug for the treatment of cancer, antimicrobial and antifungal activity.

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