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PHYTOCHEMICALS FROM LEAVES OF *Mentha spicata* AND *Artemisia pallens*

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ABSTRACT

Plants have been used for medicinal purpose. The present study evaluates with alcoholic extract of different plnts leaves namely Mint *(Mintha spicata*) amd Davana (*Artemisia pallens*) were prepared separately. The crude extract of the leaves of the above plnt were taken for the study. Phytochemical screening of various solvent extract of Minta and Davana was carried out by standard method for performing qualitative phytochemical analysis for studying the presence of bioactive compounds like tannin, flavonoids, terpenoids, saponin, carbohydrates, alkaloids, cardiac glycoside, proteins and phenol. It was found that alkaloids, phenol, glycoside, flavonoids, and protein were present in leaves of Mint and Davana.

KEYWORDS: *Artemisia pallens Mentha spicata*, phytochemical analysis

Plants have the ability to synthesize a wide variety of chemical compounds that are used to perform important biological functions and to defend against attack from predators such as insects, fungi and herbivorous mammals. At least 12,000 such compounds have been isolated so far; a number estimated to be less than 10% of the total (Tapsell *et al*.,2006), (Lai and Roy, 2004). Plants are rich in phytoconstituents like , tannins, reducing sugars, flavonoids, alkaloids, saponins, coumarins, phenols, carboxylic acids, terpenes etc. These phytoconstituents confer specific characteristics and properties to plants. The constituents of plants are known for their medicinal value to treat various ailments since time immemorial. (Balandrin *et al.*, 1985)

Mentha also known as Mint from Greek Mintha, is a genus of plants in the family Limiaceae family it is estimated that 13-18 species exist, and the exact distinction between species is still unclear hybridization between some of the species occurs naturally, many other hybrids as well as numerous cultivars, are known(Bunsawat *et al.*,2004). Leaves are crumpled, opposite, ovate - lanceolate, 3-7 cm long. The leaves are sessile with bright green colour free from purple. Inflorescence is slender, interrupted cylindrical spikes are crowded lanceolate spikes with 7-10 cm long bracts. *M. Spicata* contains volatile oils, resins, tannins. Coumarins ,Flavonoids, Steroids, Alkaloids.(Naseem *et al.,* 2011). The clinical effectiveness of many existing antibiotics is being threatened by rapid emergence of multidrug resistant pathogens (Penner and Medson, 2005) down the ages there has been an increasing interest in the use of plant extracts and essential oils as alternative remedies for the treatment of various infectious diseases. Essential oils have been shown to possess antibacterial, antifungal, antiviral, insecticidal and antioxidant properties (Burt, 2004; Kordaly *et al.*, 2005).

Artemisia pallens commonly known as " Davana " in Ayurveda is a versatile medicinal plant used singly or it combine with other medicinal plants for treating ailments like antidiabetic activity. *Artemisia pallens*, family composite, mainly found in Mysore city and are a shrub plant. Davana is mostly cultivated in red soil region in south India as Maharashtra, Andhra Pradesh, Karnataka,Tamil Nadu and Chhattisgarh (Kulkarni, 1991). Pharmacological activities of *Artemisia pallens* have been reported: perfumenes and as an antifungal and antibacterial agent (Alakararao *et al.*,1981). Davana is widely used in Iraqi and Indian folk medicine for the treatment of diabetes mellitus (Subramoniam *et al.,* 1996). It is observed that most of the people eat that many parts of the plant. Therefore the objective of this investigation was to evaluate many types of phytoconstituents are present in the leaves parts of *Artemisia pallens* and *Mentha spicata* plant.

MATERIALS AND METHODS

Collection of the Plant Samples

Fresh plant parts were collected randomly from Durg district of Chhattisgarh. The plants were identified and studied according to their families. Fresh plant materials were collected and washed under tap water, shade dried and then homogenized to fine powder and stored in airtight bottles.

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Preparation of Extract

The crushed leaves and rhizome were taken in mortar and pestle and to which different solvents were added individually and mixed well. The solvents used were acetone, and methanol. This was then centrifuged at 1000 rpm for 15 min and the supernatants were collected separately for further study. Antimicrobial activity were determined after 24hrs of incubation at 37°C. The diameters of the inhibition zone were measured.

Phytochemical Screening

- **Test for Alkaloid(Wagner's Test) –** Added 1ml of plant extract and 3-5 drops of Wagner's reagent.
- **Test for Flavonoids (Alkaline Reagent Test)-** Added 1 ml of extract and add 5-6 drops of 5% quos ferric chloride solution.
- **Test for Terpenoids (Salkowski's Test)-** Added 1 ml of extract and added 0.5 ml of chloroform along with 3-5 drops of conc. H_2SO_4.(Abdul *et al.*,2013).
- **Test for Saponons (Foam Test)-**Added 1 ml of extract and added 5 ml of distilled water and shaken vigorously .
- **Test for Tannins (Braymre's Test)-** Added 1 ml of extract and treat it with 1 ml of 10% alcoholic ferric chloride solution
- **Test for Phenols (Ferric Chloride Test)-** Added 1ml of extract and add 5-6 drops of 5% aquos ferric chloride solution.(Herin sheeba gracelin*et al.*,2013).
- **Test for Cardiac Glycosides (Keller Kelliani's Test)-** Added 1 ml of extract and treat it with 1 ml of glacial acetic acid and 2-3 drops of 5% ferric chloride solution. To this mixture add 0.5 ml dilute HCl indicates the presence of flavonoids. (Ndam *et al.*,2014)
- **Test for Carbohydrate(Molisch's Test)**-Added 1 ml of plant extract and add 3-5 drops of molisch's reagent , along with this add 1 ml of concentrated sulphuric acid down the test tube. Then allow the mixture to stand for 2-3 min.

RESULTS AND DISCUSSION

In the present study plants were collected and were authenticated. Then they were shade dried and powdered and were subjected to phytochemical screening. The dried powdered leaves of Mint and Davana were subjected to soxhlet extraction with different solvent. The qualitative phytochemical tests for the extracts were performed. The investigation showed that Mintcontains alkaloid, tannins, flavonoids, saponin, glycoside, protein and phenols are present where as in Davana plant leaves alkaloid, tannins, flavonoids, carbohydrate, glycoside, protein and phenols are present.

Table 1: Phytochemical Evaluation ofleaves of *Mint spicata*

S.No.	Phytochemical test	Result
1	Alkaloid	+
2	Tannins	+
3	Cardiac glycosides	+
4	Flavonoid	+
5	Tarpenoids	+
6	Phenol	+
7	Carbohydrate	-
8	Saponin	+

Note: (+) = Present, (-) = Absent

Table 2: Phytochemical Evaluation ofleaves of *Artemisia pallens*

S.No.	Phytochemical test	Result
1	Alkaloid	+
2	Tannins	+
3	Cardiac glycosides	+
4	Flavonoid	+
5	Tarpenoids	+
6	Phenol	+
7	Carbohydrate	+
8	Saponin	-

Note: (+) = Present, (-) = Absent

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