

## PHYTOCHEMICAL ANALYSIS OF SOME INDIAN SPICES

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**Abstract:** A spice is a dried fruit, leaves, flowers, bark and root,seed of plants, it is used making curry flavour,food preservative due to presence of various biochemical constituents which possess medicinal properties hence used to cure various diseases.the present investigation carried out screen bioactive constituents of aqueous extract of spices namely (Black pepper) *Piper nigrum L.*, (Clove) *Syzygium aromaticum*, (Cinnamomum) *Cinnamomum verum*, (Turmeric) *Curcuma longa*, (Curry Leaf) *Murrayakoenigii (L.) Spreng.*, and (bay Leaves)*Cinnamomum tamala*. The qualitative screening of phytochemicals of these spice extracts shows the presence of phytochemicals like alkaloid, flavonoids, saponin, tannin, phenol, terpenoids, etc. this result revealed that spices have potential medicinal property for human health.

**Key words:** spices, phytochemicals, human health

### INTRODUCTION

In India spices are mostly grown for the commercial cultivation. All types of spices were use from the ancient time in our food for daily so they fulfill the body requirements on routine basis. Many of these substances are also used in traditional medicines. Spices used in making curry, preserving food. Spices contain important phytochemical which are most medicinal important .All types of spices were use from the ancient time in our food for daily,Spices have been recognized for their value of preserving foods and medicinal values due to the presence of bioactive antimicrobial compounds (1). Spices have been used for not only flavor and aroma of the foods but also to provide anticancer, antiviral, antimicrobial properties (2).A wide range of spices were use from the old time in our kitchen for day by day so they satisfy the body prerequisites on routine premise. Huge numbers of these substances are likewise utilized in customary medicine.

### MATERIALS AND METHODS

Spices were purchased from local market namely mentioned above washed and dry in shady places and making powder using mixture grinder and stored in air tight bottles.so they fulfill the body requirements on routine basis. Many of these substances are also used in traditional medicines. Providing several health benefits play a major role in curing diseases like diabetes, cold, cough,arthritis etc.

#### Extract preparation

10 g of powdered samples were weighed and mixed with 100 ml of distilled in conical flasks and kept in rotatory shaker at 150 rpm for 24 hours. After 24 hours it was filtered with Whatman No.1 filter paper. The filtrates were evaporated in a hot air oven at 400 C until dry. The extracts were stored in sample bottles at 400 C prior to use. (Harborne1998)

#### Preliminary phytochemical screening

The aqueous extracts of selected spices were used to screen the phytochemicals like tannins, alkaloids, saponins, flavonoids, phenolic compounds, by standard method (4,5,6) .

**Alkaloids:** The extracts were mixed with dilute hydrochloric acid. Shaked well and filter.with filtrate added one or two drops of Mayer's reagent. The solution gives white precipitation.indicates presence of alkaloid.

**terpenoids:** the extract mixed with 2 ml of trichloroacetic acid. formation of a red precipitate indicating presence of terpenoids

**Saponins:** The extracts were mixed with water and shacked well. The solution changed into persistent foamshowed the presence of saponins.

**Flavonoids:** The extract mixed with 95% ethanol and adding few drops of concentrated hydrochloric acid magnesium solution turning in to pink colour indicates the presence of flavonoids.

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**Tannin:**The solution mixed diluted with chloroform and added few drops acetic anhydride and, minimum amount sulphuric acid was added carefully by the side of test tube to the solution. A green colour was formed which showed the presence of tannins.

**Phenol:**The test extract in alcohol was taken with a bit of magnesium and one drop of neutral ferric chloride. Change of intense colour in the test content, showed positive result for phenolic compounds.

### RESULTS AND DISCUSSION

The phytochemical constituents of aqueous extracts of, (Turmeric) *Curcuma longa*, (Clove) *Syzygium aromaticum*, (Cinnamomum) *Cinnamomum verum*, (Curry Leaf) *Murrayakoenigii* (L.) Spreng, (Black pepper) *Piper nigrum* L., and (Bay Leaves) *Cinnamomum tamala* the result incorporated in table.

| Spice common name | Botanical name                      | family        | alkaloids | terpenoid | flavonoids | tannin | saponin | phenol |
|-------------------|-------------------------------------|---------------|-----------|-----------|------------|--------|---------|--------|
| Turmeric          | <i>Curcuma longa</i>                | Zingiberaceae | +         | +         | +          | -      | +       | +      |
| Clove             | <i>Syzygium aromaticum</i>          | Myrtaceae     | +         | +         | +          | -      | -       | -      |
| Cinnamomum        | <i>Cinnamomum verum</i>             | Lauraceae     | +         | +         | +          | -      | +       | -      |
| Curry Leaf        | <i>Murraya koenigii</i> (L.) Spreng | Rutaceae      | +         | +         | -          | +      | -       | +      |
| Pepper            | <i>Piper nigrum</i> L.              | Piperaceae    | +         | +         | +          | +      | -       | -      |
| Bay Leaves        | <i>Cinnamomum tamala</i>            | Lauraceae     | +         | +         | +          | -      | -       | +      |

+ present , - absent

This research work was conducted on six selected plants used as spices to determine the qualitative phytochemicals present in them. The results revealed that secondary metabolites of the selected spices include alkaloid, terpenoids, flavonoids, tannin, saponin and phenol. The spices, plant extracts and their secondary metabolites have been reported for anti-inflammatory, anti-diarrheal, antimicrobial, antioxidant and insecticidal activities (7) .

### CONCLUSION

The results of this study revealed that the selected six spices consist of many useful phytochemical compounds having important biological properties such phytochemicals include alkaloids, terpenoids, flavonoids tannin, saponin and phenol. The study also revealed that alkaloids was the most abundant phytochemical in all the spices. Therefore, the above plants extract could be explored for its highest therapeutic efficacy by pharmaceutical companies.

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