

MEDICINAL IMPORTANCE OF CORIANDER (CORIANDRUM SATIVUM L.)

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Abstract: *Coriandrum Sativum* is commonly known as coriander in English and Dhania in Hindi. It is a very useful plant as every part of this plant like leaves, Stem, Seeds etc. are used. It has several medicinal properties like Antioxidant Property, Antifungal Property, Anti-diabetic Property, Anticancer Property, Anti bacterial, Hepato protective, Hypo lipidemic Property etc. It has been proved by several scientific experiments.

Keywords- Coriander, Medicinal Properties.

1. Introduction

Plants are the natural source of several important chemical compounds that are beneficial for human health and can be useful to derive several new biochemical compounds that have less side effects and high potential to fight against various diseases. These medicinal plants are cheaper, easily available, can be consumed easily and they are the part of our food habits, so they have very good potential to treat large population effectively.

Coriander is commonly known as Dhania in Hindi. It is a small herb and every part of it like leaves, seeds and stem are used by human being. It is a very important part of Indian kitchens. Its leaves are consumed in the form of several dishes, while its dried seeds and their powder are used as spice to give flavour to the food.

Table-1: Classification

Kingdom	Plantae
Subkingdom	Tracheobionta
Superdivision	Spermatophyta
Division	Magnoliophyta
Class	Magnoliopsida
Subclass	Rosidae
Order	Apiales
Family	Apiaceae
Genus	Coriandrum L.
Species	Coriandrum Sativum L.

Table -2: Common Names of *coriandrum sativum*

Language	Name
English	Coriander, Cilantro, Chinese Parsley
Hindi	Dhania
Sanskrit	Dhanyaka
Tamil	Kothamalli
Telugu	Dhaniyalu
Bengali	Dhana
Arabic	Sabit Dhanya
Gujarati	Kothmiri
Marathi	Dhana

Coriander is the part of several house hold medical preparations to cure sore bed cold, season fever, stomach problems, nausea etc. The aim of present study is to check the medicinal properties of coriander by scientific methods.

2. Methodology

In the current study first the medicinal properties of coriander were recognised. In the next step the literature related to its medicinal properties were collected with the help of organized search. The searches were performed using various data base including PubMed (<http://www.ncbi.nlm.nih.gov/pubmed>), Scopus (<http://www.scopus.com>), Scirus (<http://www.scirus.com>), Science Direct (<http://www.sciencedirect.com>), Google Scholar (<http://www.scholar.google.com>).

3. Medicinal properties of *Coriandrum sativum*

3.1. Antioxidant Property

Antioxidants are those substances which restrict oxidation process by removing free radicals from our body. These free radicals cause several problems like cancer in our body. Coriander has several phenolic compounds due to which it shows significant antioxidant property. A study showed that its seed and leaves extracts both have antioxidant properties however leaves extract of ethyl acetate shows highest antioxidant property(Anne et al. 2004). Another study showed that the main constituent of its essential oil are camphor, cyclohexanol acetate, limonene, α -pinene and its essential oil inhibits the rate of the production of primary and secondary oxidation products in cake (Darughe et al. 2012). Another study showed that the methanol extract of coriander leaves shows highest antioxidant property among methanol and water extracts of Parsley and coriander (Wong et al. 2006).

3.2. Anti bacterial Property

Anti bacterial compounds are those which have property to fight against different bacterial infections. Coriander has anti-bacterial property also. A study showed that aliphatic alkenals and alkanals characterized from fresh coriander leaves have antibacterial activity against *Salmonella choleraesuis* (Kubo et al. 2004). Another study showed that coriander oil have antibacterial activity against almost all gram positive and gram negative bacteria except *Bacillus cereus* and *Enterococcus faecalis* (Silva et al. 2011). Another study showed that ethanol extract of coriander stem has greater growth inhibition of *B. subtilis* and *E. coli* (Wong et al. 2006).

3.3. Antifungal Property

Antifungal property is the property of compounds to inhibit the growth of fungi. Coriander shows antifungal property also. A study proved that coriander essential oil inhibits the growth of fungi in cake stored for 60 days (Darughe et al. 2012). Another study showed that essential oil of coriander leaves have antifungal effect against *Candida* spp. causing oral infection (Freires et al. 2014). Coriander extract is also found suitable for inhibition of *Aspergillus parasiticus*, *Cladosporium cladosporioides*, *Eurotium herbariorum*, *Penicillium chrysogenum* and *Aspergillus carbonarius* (Dimic et al. 2014).

3.4. Anti-inflammatory

Anti-inflammatory are those substances that reduce inflammation or swelling. The anti-inflammatory property of coriander is proved by several studies. A study showed that lipolotion containing coriander oil displayed a mild anti inflammatory effect and it could be useful in the concomitant treatment of inflammatory skin diseases (Reuter et al. 2008). Another study showed that the ethanolic extract of aerial parts of *C. sativum* show anti-inflammatory effect on lipopolysaccharide (LPS)-stimulated RAW 264.7 macrophages. (Wu et al. 2010).

3.5. Anti-diabetic Property

Diabetes is a very common disease and it is growing day by day. There are several drugs in market to manage diabetes but they have several side-effects also. Coriander is a natural anti diabetic compound. A study proved that aqueous extract of coriander has anti hyperglycaemic, insulin-releasing and insulin-like activity (Gray et al. 1999). Another study showed that coriander seed extract have hypoglycaemic effect and useful in the treatment of diabetes (Aissaoui et al. 2011).

3.6. Anticancer Property

Cancer is a life threatening disease spreading very rapidly now a day. Anticancer are those compounds that are used to treat cancer. A study showed that methanol and aqueous extract of coriander (leaves and seeds) have significant antitumor and immunomodulating property (Gomez-Flores et al. 2010). A study also showed that green synthesized silver nanoparticles using *C. sativum* have great potential in biomedical applications such as anti-acne, anti-dandruff and anti-breast cancer treatment (Kumar et al. 2016).

3.7. Hepatoprotective

Coriander also has Hepatoprotective property which is proved by several scientific studies. A study showed that Essential oil of coriander has antioxidant and hepatoprotective property (Samojlik et al. 2010). Another study showed that coriander extract protect liver from oxidative stress induced by carbon tetra chloride in wistar albino rats (Sreelatha et al 2009).

3.8. Cardio-protective

Coriander also has cardio-protective property. A study showed that methanol extract of coriander seeds is able to prevent myocardial infarction by inhibiting myofibrillar damage (Patel et al. 2012). The cardio-protective property of coriander is also proved by its Hypolipidemic effect (Lal et al. 2004) and Hypocholesterolemic effect (Dhanapakiam et al. 2006)

3.9. Anti migraine effect

Migraine is one of the most common and debilitating neurological problems. Although several preventive drugs are used to treat migraine but they have side effects also. Coriander is a natural medicine to treat migraine and it was proved by several scientific studies. A study showed that *C. sativum* fruit is efficient in reduction of the duration and frequency of migraine attacks and in diminishing pain degree (Kasmaei et al. 2016 & Mansouri et al. 2015).

3.10. Other uses

Coriander has several other medicinal uses also. It is proved to be useful in the treatment of Neurodegenerative Disorders and Alzheimer's disease Induced by Aluminum Chloride in Cerebral Cortex of Male Albino Rats (Khalil et al. 2010). A Study showed that the hydroalcoholic seed extract of *C. sativum* resulted in a tissue-specific amelioration of oxidative stress produced by lead in brain (Velaga et al. 2014). Beside that coriander also showed anti-acne and anti-dandruff property (Kumar et al. 2016)

Table-3: scientific evidences of medicinal properties of coriander

S. No.	Medicinal Property	References
1.	Antioxidant Property	Anne et al. 2004 Darughe et al. 2012 Wong et al. 2006
2.	Antibacterial Property	Kubo et al. 2004 Silva et al. 2011 Wong et al. 2006
3.	Antifungal Property	Darughe et al. 2012 Freires et al. 2014 Dimic et al. 2014
4.	Anti-inflammatory	Reuter et al. 2008 Wu et al. 2010
5.	Anti diabetic Property	Gray et al. 1999 Aissaoui et al. 2011
6.	Anticancer Property	Gomez-Flores et al. 2010 Kumar et al. 2016
7.	Hepato-protective	Samojlik et al. 2010 Sreelatha et al 2009
8.	Cardio-protective	Patel et al. 2012 Lal et al. 2004 Dhanapakiam et al. 2006
9.	Anti migraine Property	Kasmaei et al. 2016 Mansouri et al. 2015
10.	Brain protective	Khalil et al. 2010 Velaga et al. 2014
11.	Anti dandruff	Kumar et al. 2016

4. Conclusion

The above study showed that coriander is a natural medicinal plant which has several medicinal properties like Antioxidant, Antibacterial, Antifungal, Anti-inflammatory, Anti-cancer, Anti-diabetic, Hepatoprotective, anti-acne, anti-dandruff, Cardio protective and Anti migraine properties beside this it can be useful in the treatment of Neurodegenerative Disorders and Alzheimer's disease. The above study is the compilation of the medicinal properties of coriander but there is a scope of further study of the other medicinal properties and side effect of coriander.

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