



## Study on Ajwain (*Trachyspermum Ammi*) Activity on Candidiasis

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### ABSTRACT

*Trachyspermum Ammi* is commonly known as Ajwain. The plant is used traditionally as stimulant, carminative, abdominal tumours, bronchial problem, lack of appetite, asthma. Medicinally, it has been proven to possess various pharmacological activities like antifungal, antioxidant, antimicrobial, antitussive, anthelmintics, antispasmodic, bronchodilating actions, diuretic. Studies reveal presence of various phytochemical constituents mainly carbohydrates, glycosides, saponins and volatile oils like thymol. *Trachyspermum Ammi* shows action on fungal infection. The infection caused by species *Candida* can be treated with ajwain. Candidiasis is a fungal infection caused by yeast (a type of fungus). It affects the mouth and throat. Further studies, reveal the treatment of Candidiasis and formulation related to the disease.

**Keywords** - Ajwain, candidiasis, *trachyspermum ammi*, antifungal, thymol, lozenges

### 1. Introduction



**Fig : Ajwain seeds**

*Trachyspermum Ammi* commonly known as “Ajwain” is distributed throughout India and it is cultivated in Gujarat & Rajasthan [3]. The use of plants and seeds in medicine is almost as old as human civilisation [1]. *Trachyspermum Ammi*, belonging to family **Apiaceae** is a highly valued medicinally important seed spice [2]. The roots are diuretic in nature & the seeds contain excellent properties [3]. **Candida** species are currently the 4<sup>th</sup> leading cause of hospital acquired bloodstream infection [4]. Ajwain oil, which is 2-4.4% brown in colour, is found in seeds. [2] The major ingredient in this oil is thymol, which is used to treat gastrointestinal issues appetite loss [2]. **Candidiasis** is the most prevalent, with *Candida albicans* capable of causing more invasive infections than any other fungus [4]. Fungi have become a major source of human disease [2]. Candidiasis is most common of the disseminated mycoses [2]. Oral Candidiasis is a superficial infection that affects the palate region [5]. It is the infection produced by microorganism of the genus *Candida*; *Candida Albicans* is most common pathogenic species [5]. More than 20 types of *Candida* can cause infection with *Candida Albicans* being most common [2]. Individuals at risk for invasive candidiasis include low birth weight babies, people recovering from surgery, HIV, Cancer, & people admitted to an intensive care unit [2]. The *Candida* species that survive on skin and on environmental surfaces may be exogenous or endogenous where in fungal infection are caused by species [2].

## 2. Collection of plant material

The collected plant material was air-dried in darkness at room temperature (20°C) seeds of dried plant were separated from plant and stored in tight seal container until needed [6].

## 3. Formulation



Fig :- Lozenges

### 3.1 Formula:-

Ingredients	Quantity	100%
Jaggery	90 gm	90%
Ajwain	6.5gm	6.5%
Lemon	4-5 drops	2.5%
Clove	0.4	0.4%
Tulsi	2 gm	2%

### 3.2) Uses

#### Jaggery



Saccharumofficinarum Jaggery, also known as "Gur" in Hindi it is a type of unrefined cane sugar. In herbal lozenges, jaggery can be used as natural sweetener and binding agent [7].

#### **Ajwain**



Ajwain can be used as key ingredient to help to relieve coughs and sore throats. It can also help to break up mucus in the respiratory system, which can help to reduce congestion and promote easier breathing [7].

#### **Lemon**



Lemon can be used as a key ingredient to help to relieve sore throats and coughs. Its acidic properties can help to break up mucus and phlegm in respiratory system and making it easier to expel. The high vitamin C content of lemon can also boost the immune system and help to fight off infections [7].

**Clove**

Clove is known as *Syzygium aromaticum*, in herbal lozenges, clove can be used as a key ingredient to help to reduce inflammation in the respiratory system. The essential oil of clove contains eugenol, which is a powerful antimicrobial agent that can help to fight infections in the respiratory system [7].

**Tulsi**

Tulsi is known as holy basil, is an herb that has been traditionally used in Ayurvedic Medicine for its various health benefits . It is known for its anti-inflammatory, anti-bacterial and anti-viral properties, which makes it a popular ingredient in herbal remedies for coughs, colds, and other respiratory ailments[7].

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**4) Preparation of formulation**

- 1.Measure the raw material
- 2.Take ajwain, clove, tulsi and dry the ingredients through hot air oven to remove moisture content
- 3.After drying the ingredients powder them through mixer jar and then pass powder through seive to get finer particles to get dissolved

4. liquify jaggery on medium flame until it get melts
5. During melting add ajwain, clove, tulsi powder accordingly
6. Continue agitating mixture and add required quantity of lemon drops to it
7. Keep the mould ready
8. After mixing the entire ingredient transfer mixture into mould
9. Keep it at room temperature until it gets harder , then hard lozenges are stored for one to two days in refrigerator [7].

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## 5) Discussion

The ajwain activity and the uses of various herbal ingredients are discussed above. The study is done on the formulation of lozenges and the activity of ajwain on the fungal disease Candidiasis. The preparation and formulation of lozenges is discussed above. The herbal ingredients used in lozenges are as follows: lemon, tulsi, clove. The uses of all herbal ingredients are discussed.

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## 6) Conclusion

The activity of Ajwain (*Trachyspermum Ammi*) on the Candidiasis was investigated in this work. The uses of various herbal ingredient along with ajwain and the formulation of lozenges are studied. Herbal ingredient in combination with Ajwain are used and is effective against fungal species (*Candida Albicans*)

### Author contribution

Both the author involve equally in collection a information and designing of manuscript.

### Disclosure of interest

The author declare that they have no conflict of interest concerning the article

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