

# Comparative Study of Herbal Chewable Tablet and Kofol Chewable Tablet

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**Abstract:** Developing a chewable, easily accessible pill for ginger (*Zingiber officinale*) that has antitussive qualities is the aim of this project. Solubility, hardness, friability, disintegration, and weight variation were assessed for each formulation. As a convenient and patient-friendly substitute for other dosage forms, chewable tablets have stood out, especially for patients who have trouble swallowing conventional solid oral dose forms.

**Keywords:** Antitussive, Herbal.

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## I. INTRODUCTION

- Some plant or plant extracts are used in potentially chewable herbal tablets, which are oral dosages.
- You should chew these tablets if you want to release and absorb the active elements of the herb.
- They are made to taste delicious and should just be chewed and swallowed.
- A chewable is a drug that is most absorbed or the easiest way to absorb through chewing.
- Eyewitness tablets provide a highly tolerated, safe and convenient way to provide two years of medication

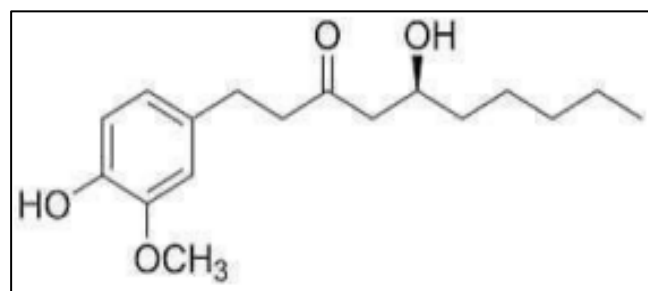


Fig 1 Herbal Chewable Tablet

## II. DRUG PROFILE

### ➤ Description:-

- Name : Ginger
- Synonyms : *Zingiber officinale*



### ➤ Structure :-

- Molecular Formula : C<sub>17</sub>H<sub>26</sub>O<sub>4</sub>
- Molecular Weight : 294.39 g/mol
- Chemical Name : *Zingiber officinale*
- Properties : Anti inflammatory
- Uses : Reduce fever and cough Physicochemical
- Properties : Water
- Soluble Melting Point : 32 °C



Fig 2 Ginger

➤ *Clove*

- Synonym- caryophyllum
- Biological source- clove is obtained from dried flowers buds of *Eugenia* Family- myrtaceae
- Use- antibacterial



Fig 3 Clove

➤ *Cinnamon*

- Synonym- Dalchini
- Biological source- obtained from dried inner bark the cinnamon zeylanicum Family - lauraceae
- Use – Carminative



Fig 4 Cinnamon

➤ *Fennel* :

- Synonym: sweet fennel
- Biological source: obtained from fruits of the plant know as *foeniculum vulgate*. Family : umbelliferae
- Uses: carminative and aromatic



Fig 5 Fennel

➤ *Almond*

- Synonym- Nut, amygdala amara, almond.
- Biological source- obtained from *prunus amygdalus*.
- Family- rosaceae
- Uses- antioxidant fight free radical damage.
- Relief from constipation.



Fig 6 Almond

➤ *Cardamom*

- Synonym- elaichi
- Biological source- the seeds of the *elettaria cardamomum* and *amomum cardamomum* plants. Family- carum carvi
- Uses- for gastrointestinal disorders. Improves blood circulation. Improves oral health



Fig 7 Cardamom



Fig 9 Marketed Product. KOFOL Chewable Tablets (Ginger)

### III. COMPARATIVE STUDY OF HERBAL CHEWABLE TABLET



Fig 8 Our Product, Herbal Chewable Tablet

### IV. MATERIALS AND METHODS

Table 1 List of Materials

| Sr. No. | Particular        | Quantity |
|---------|-------------------|----------|
| 1.      | Ginger            | 20gm     |
| 2.      | Almond            | 10gm     |
| 3.      | Cinnamon          | 15gm     |
| 4.      | Cardamon          | 15gm     |
| 5.      | Fennel            | 10gm     |
| 6.      | Clove             | 20gm     |
| 7.      | Starch            | 20gm     |
| 8.      | Talc              | 05gm     |
| 9.      | Magnesium sterate | 05gm     |
| 10.     | Lactose           | 370mg    |

#### ➤ Ingredients of Marketed Product

Table 2 Ingredients of Marketed Product

| Ingredients            | Quantity | Role              |
|------------------------|----------|-------------------|
| 1) Glycyrrhize glabra  | 20mg     | Flavoring agent   |
| 2) Zingiber Officinale | 3mg      | Antioxidant       |
| 3) Terminalia Belerica | 3mg      | Astringent        |
| 4) Piper Cubeba        | 2mg      | Antioxidant       |
| 5) Piper nigrum        | 0.5mg    | Anti-inflammatory |



|                            |       |                 |
|----------------------------|-------|-----------------|
| 6) Mentha piperata         | 4mg   | Flavoring agent |
| 7) Cinnamomum Camphora     | 2mg   | Antiseptic      |
| 8) Caryophyllus Aromaticus | 0.4mg | Antioxidant     |

## V. METHOD OF PREPARATION

### ➤ Material-

Cardamom, cloves, ginger powder, almonds, cinnamon powder, and fennel seeds were prepared in a mixer mill.

### ➤ Formulation Development

- The convenience of wet granule methods for small formulations has resulted in their selection. Other components of the individual formula and standardized extracts were whipped, ground, and filtered by sieve number 80.
- Following mixing, the powder mass was sieved through number 18 to extract the granules, and a vacuum dryer was used to dry it at 35Å°C. Following drying, the granules were placed in desiccators after being once more filtered through sieve number 18



Fig 12 Cardamom Powder



Fig 10 Ginger Powder



Fig 13 Cinnamon Powder



Fig 11 Clove Powder



Fig 14 Starch



Fig 15 Talcum Powder



Fig 18 Lactose



Fig 16 Fennel Seed



Fig 17 Magnesium Stearate

➤ *Preparation of Herbal Chewable Tablets :-*

- The tablet granules were made with lactose as a filler, talc as a lubricant, magnesium stearate as a glidant, acacia gum as a binder, and starch as a disintegrator.
- Using hand rotating single punch tablet presses with an 11 X 8 mm punch set with the proper compression pressure, power mixes were compressed into 500 mg tablets. Prior to punching, the granules were combined with magnesium stearate and talc, and the die cavity was modified to accommodate the necessary weight.
- The granules were then punched into tablets.



Fig 19 Herbal Chewable Tablet

➤ *Preformulation Studies*

• *Hardness Test:*

The hardness of 20.0 randomly selected tablets in any language was measured Using a Monsanto cure tester.



Fig 20 Hardness Test

• **Percentage Friability Test:**

Roche friabilator was used to assess the tablets' friability. Twenty tablets were chosen at random select in a friability apparatus to determine the percentage of weight loss. after four minutes of rotating at 25 rpm, and the weight reduction



Fig 21 Friability Test

• **Disintegration Test:**

The digital microprocessor-based disintegration test device (basket rack assembly, Lab India) was used to measure the disintegration time of tablets. The assembly was suspended in a water-filled 1000 mL beaker. The amount of water was such that the wires mesh at both the top and bottom of the beaker. The temperature of the equipment was kept at  $37 \pm 2^\circ\text{C}$ .



Fig 22 Disintegration Test

➤ **Weight Variation :-**

Weigh each of the twenty tablets, then determine the average weight. Calculate each tablet's weight percentage variation from the average weight.

## VI. RESULT AND DISCUSSION

➤ **Observation Table:**

Table 3 Observation Table

| Parameter           | Observation of herbal Chewable tablet | Observation of Kofol Chewable tablet |
|---------------------|---------------------------------------|--------------------------------------|
| Shape               | Rectangular                           | Spherical                            |
| Diameter length     | 2.0cm                                 | 130mm                                |
| Diameter width      | 0.5cm                                 | 85mm                                 |
| Weight variation    | 0.5gm                                 | 120mg                                |
| Friability test     | 0.52%                                 | 0.6%                                 |
| Hardness test       | 2.40 kg/cm                            | 5.4mm                                |
| Thickness test      | 3mm                                   | 3mm                                  |
| Disintegration Time | 15min                                 | 6min                                 |

➤ **Result and Discussion:-**

- The evaluation of herbal chewable tablets were performed successfully and mentioned in table above.
- It was found that the herbal chewable tablets were of greenish yellow colour, and of rectangular and flat shape.

- The thickness of tablets found 3mm and has 11mm of diameter
- The herbal chewable tablets were taken for physical analysis based on colour, shape, thickness and diameter.
- The other tests performed as disintegration time was found of 15min. based on analysis the formulated tablets prepared was pure and of good quality.



## ➤ Identification Test

Table 4 Identification Test of Chloramphenicol

| Sr. No. | Physical properties & test | Observation of herbal Chewable tablet | Observation of Kofol Chewable tablet |
|---------|----------------------------|---------------------------------------|--------------------------------------|
| 1.      | Physical state             | Solid                                 | Solid                                |
| 2.      | Color                      | Brownish yellow                       | Brownish                             |
| 4.      | Solubility                 | Water soluble                         | Water soluble                        |

**VII. CONCLUSION**

Chewable tablets are essential to the pharmaceutical industry and offer a number of advantages that make them beneficial in medical settings.

Their chewable form increases patient compliance, especially for those who have difficulty swallowing regular tablets or capsules, such as elderly patients, children, and patients with specific medical conditions.

Zingiber officinale's underground stem, or rhizome, is used to make ginger, a spice and herbal remedy.

The Middle English word gingivere, which is derived from the Sanskrit word srngaveram, which means "horn root," is where the word "ginger" originates.

Around the world, ginger is utilized in cuisine, medicine, and cosmetics.

It is frequently used in Asian cooking and is believed to treat a number of ailments, such as heart problems, colic, diarrhea, arthritis, nausea, vomiting, and gastrointestinal upsets.

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