

# Formulation And Evaluation of Herbal Green Tea Tablet for Multipurpose

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**Abstract-** The development of a polyherbal green tea tablet offer a convenient shelf-stable alternative to traditional infusion, providing a concentrated source of antioxidants and therapeutic phytochemical. This formulation utilizes a synergistic blend of Green tea (*Camellia sinensis*) and tulsi for immunity and stress relief, combined with the digestive and anti-inflammatory benefits of Ginger, Cardamom, Clove and peppermint. Particularly, Cinchona Bark is included for its historical role in metabolic balance and digestive support. To ensure structural integrity and palatability starch is employed as binder and disintegrant, while Honey and milk powder serve as natural flavour and sweetener and binder. The resulting tablet is designed for multipurpose tablet rapid disintegration and efficient release of bioactive compound such as catechins, eugenol, and alkaloids like quinine.

**Keywords:** Herbal green tea (*Camellia sinensis*), Clove, Honey, Ginger, Cardamom, Peppermint, Milk powder, Tulsi, Cinchona Bark, Starch, Herbal green tea tablet.

## I.INTRODUCTION

Herbal green tea has gained significant importance in recent years due to its natural health benefits and minimal side effects. The present project focuses on the formulation of a herbal green tea tablet using selected medicinal and aromatic ingredients such as honey, ginger, milk powder, peppermint, starch, tulsi, green tea powder, cinchona bark powder, cardamom, and clove. These ingredients are well known in traditional medicine systems for their therapeutic

properties, including antioxidant, digestive, immunomodulatory, and refreshing effects.

Green tea powder serves as the primary source of antioxidants, while tulsi and ginger contribute anti-inflammatory and immunity-boosting properties. Peppermint, cardamom, and clove enhance flavor, aroma, and digestive benefits. Cinchona bark powder is traditionally used for its tonic properties. Honey and milk powder improve palatability and nutritional value, where starch acts as a suitable binding agent in tablet formulation. The objective of this project is to develop a convenient, stable, and palatable herbal green tea tablet that combines health benefits with ease of use. This formulation aims to provide a natural beverage alternative that supports overall wellness and promotes a healthy lifestyle.



II.MATERIALS AND METHODS

Table: Ingredients and Quantity with there uses

Ingredients	Quantity	Uses
Green tea powder	180mg	CNS Stimulant
Ginger powder	30mg	Digestive aid
Tulsi Powder	60mg	Immunity Booster
Clove Powder	10mg	Antimicrobial
Milk Powder	30mg	Improve Mouthfeel
Honey	50mg	Sweetner and Binder agent
Starch	110mg	Binder and disintegrant
Cinchona Bark Powder	5 mg	Bitter Tonic ,Stimulant
Peppermint Powder	15 mg	Flavor , Digestion

Method of Preparation:

- Direct compression Method:
  - [1] Weight the all ingredients
  - [2] Add the powder of Clove, Cardamom, Cinchona Bark, Tulsi, Ginger, Green tea, Milk powder, Starch.
  - [3] Pass these powder and excepinent through a standard sieve no 20 or 60 ensure uniform particle size, which is critical to for preventing segregation.
  - [4] Add Honey and peppermint extract and mixing it to form a homogeneous mixture.
  - [5] Add the homogeneous mixture of powder into a tablet punching machine, Compress the powder into a tablet and eject the Finished product

Figure format:



Fig: Green tea tablet

Physical evaluation of Herbal green tea tablet:

Evaluation test:

The prepared herbal green tea tablets were evaluated for various physical and quality control parameters to ensure uniformity, stability, and suitability for consumption.

1. Organoleptic Evaluation

Parameters: Color, odor, taste, appearance

2. Thickness

Purpose: To ensure uniform tablet thickness.

Procedure:

Select 10 tablets randomly.

Measure thickness using a vernier caliper or micrometer screw gauge.

Calculate the average thickness.

3. Hardness Test

Purpose: To determine tablet resistance to mechanical stress.

Procedure:

Select 5 tablets randomly.

Place each tablet between the jaws of a Monsanto or Pfizer hardness tester.

Record the force required to break the tablet.

Express hardness in kg/cm<sup>2</sup>.

4. Weight Variation Test

Purpose: To ensure uniform tablet weight.

Procedure:

Weigh 20 tablets individually.

Calculate average weight.

Compare individual weights with the average as per pharmacopoeial limits.

5. Friability Test

Purpose: To evaluate tablet resistance to abrasion.

Procedure:

Weigh a sample of tablets (usually 10 tablets).

Place them in a Roche friabilator.

Rotate at 25 rpm for 4 minutes (100 rotations).

Remove tablets, dust them, and reweigh.

Calculation:

Friability (%) =  $\frac{\text{Initial weight} - \text{Final weight}}{\text{Initial weight}} \times 100$

Limit: Not more than 1%.

#### 6. Disintegration Test:

Purpose: To determine the time required for tablets to break down.

Procedure:

Place one tablet in each tube of the disintegration test apparatus.

Use distilled water at  $37 \pm 2^\circ\text{C}$  as medium.

Operate the apparatus and note the time taken for complete disintegration.

#### 7. Solubility / Dissolution Test:

Purpose: To assess drug release from the herbal tablet.

Procedure:

Use USP dissolution apparatus (Type I or II).

Fill with suitable dissolution medium.

Maintain temperature at  $37 \pm 0.5^\circ\text{C}$ .

Withdraw samples at specified intervals and analyze for active constituents.

#### 8. pH Test :

Small chemical tablets used to measure the pH of water (pools, aquariums, drinking water, labs).

When dissolved, they change the water's color based on acidity/alkalinity. Using pH meter

### III.RESULT

TEST	RESULT
Colour	Light greenish to brown
Odour	Pleasant aromatic
Taste	Mildly Sweet, spicy, refreshing
Appearance	Smooth, uniform, circular tablet
Thickness	4.2+ 0.1mm
Hardness	4.5kg /cm <sup>2</sup>
Weight variation	+5%
Friability	0.6%
Disintegration time	6 minute
Solubility /Dissolution time	2-3 minute
pH	6.2

### IV.CONCLUSION

The Herbal green tea tablet is natural well balanced formulation designed to combine the antioxidants benefits of green tea with supportive herbal ingredients. Each tablet contains a blend of green tea powder, milk powder, Honey, Cardamom powder, clove powder, cinchona bark powder, Starch carefully measured to create a harmonious flavour and functional profile. The inclusion of natural binders ensure proper tablet formation without the need for synthetic additives.

This tablet offers convenient and portable way to enjoy herbal wellness ingredients in a controlled dose. It support general well-being, provide mild antioxidants and digestive support, and present a

pleasant aromatic taste from cardamom and clove. While not meant for medical treatment, it serve as a natural herbal supplement suitable for everyday use when consumed responsibly.

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