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REVIEW ON HERBAL CHOCOLATE BY USING GINGER AND TULSI

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ABSTRACT

The aim of this study is to develop a paediatric-friendly herbal chocolate by combining medicine with one of children's favourite foods, chocolate, to make treatment more appealing. Cough and viral infections are common among children. The chocolate is most loving food of children whereas the medicine is hating substance. So, objective of present study was to formulate chocolate that contain drug i.e., herbal chocolate to prevent the diseases in children & very useful in the most common disease (Cough, common cold & Throat infection). Tulsi is the herbal drug which has several medicinal properties, antitussive, antipyretic activity, and the best-known health benefit of Ginger is its anti-microbial, antifungal and antioxidant properties, giving it the power to alleviate swelling and pain in conditions such as arthritis. Further prepared and evaluated chocolate is very useful for general pain, cancer, diabetes, cardiovascular, and neurodegenerative diseases, physical stability etc. A good quality Jaggery has glucose only slower, herbal texture, crystalline structure, boosts the body's immunity, reduces oxidative stress, rich in iron, calcium & electrolytes, relieves constipation and eases pregnancy-related symptoms like mood swings. Ginger prevents infections, reduces the extent of bronchial injury due to infections and anti-emetic and synergistic. Jaggery can be added with some different natural flavour like black pepper, ginger, lemon, cardamom.

KEYWORD: Tulsi, (extract), chocolate, honey, Jaggery, ginger (extract), Medicine.

BACKGROUND

The traditional Indian medical systems of Ayurveda, Siddha, and Unani are well-known. The Ayurvedic philosophy originated in India sometime between 2500 and 500 BC. Since Ayurveda is an old Indian system of medicine, its literal meaning is "science of life." It views man and his sickness as the main focus of treatment. It has been noted that people in good health have well-balanced metabolisms. The main source of sustaining nutritional needs is food. However, certain traditional techniques are discontinued as modernization increases. Because of this, balanced nutrition is being impacted by modern eating patterns. There is an ever-present, increasing nutritional intake inequality, which makes normal living abnormal. A popular kid-friendly delicacy, chocolate offers a promising vehicle for the delivery of herbal treatments. Chocolate is a versatile food that may be mixed to produce a wide range of flavor and textural experiences. Additionally, chocolate is an anhydrous medium that inhibits the growth of microorganisms and

the hydrolysis of active ingredients that are susceptible to water. Saturated fat, polyphenols, sterols, triterpenes, aliphatic alcohols, and methylxanthines are among the many substances found in chocolate. Chocolate is a well-liked and tasty vehicle for supplying drugs and supplements. The Mayans, who most likely cultivated the cocoa plant first in South America, are credited with starting the history of chocolate. Among the Maya, chocolate was traditionally consumed as a hot drink made with water and cocoa, often flavored with spices like pepper and cinnamon. The Aztecs, who referred to it as the 'Food of the Gods,' served it to Emperor Moctezuma II. Christopher Columbus was the first European to come into contact with cocoa in 1502. A canoe carrying cocoa beans, which were regarded as "mysterious-looking almonds" and recognized as a type of money in Mesoamerica, was discovered by him. In 1573, the Swedish botanist Carl von Linné (known as Linnaeus) gave a scientific name to the cocoa plant in his famous book Species Plantarum. The term Theobroma, meaning

'food of the gods' in Latin, was the name he assigned to it (Katz, 2003). While cocoa production and the consumption of derived products had existed for millennia, their existence was largely unknown outside Central America until the Spanish arrived in the early sixteenth century.^[4] Due to challenges with a climate that was not conducive to its growth, chocolate's qualities were long disregarded throughout Europe.

INTRODUCTION

Traditionally, chocolate has been regarded as a key ingredient and a sophisticated flavour. The drug and the chocolate base are combined to create medicated chocolate. The method through which a drug is taken up by chocolate and later released is referred to as the chocolate-based drug delivery system.^[1] Chocolate is a complex and flexible delicacy that can be combined to create distinct flavours and sensations. Chocolate's anhydrous nature prevents microbial development and hydrolysis of water-sensitive active compounds. Chocolate can be an effective approach to distribute medicinal chemicals. Chocolate is a versatile food that may be mixed to produce totally distinct flavour and tactile experiences. Herbal formulations mix many herbal preparations with an active agent or substance.^[2] The herbal remedy Tulsi, or Osmium sanctum, has a number of therapeutic benefits, one of which is its antitussive action. It is therefore necessary to create a chocolate that contains an aqueous Tulsi extract that has antitussive properties. Chocolate have been shown to help our body produce chemical known as "Serotonin". It makes feel relaxed. Further chocolate is also having some

advantages like quick onset of action, reduction in the drug dose of manufacture and scale, increases drug loading capacity. Some drugs are bitter in taste due to which oral administration of bitter drugs leads to patient incompliance especially in children. It is a best drug delivery system specifically for those people who don't take any kind of drug. The aim of the present study was to prepare Herbal Chocolate. Furthermore, to evaluate the physiochemical parameters of the prepared formulations so that they can be further standardized and used commercially. Chocolate is one of the most popular foods among children, while medicine is often disliked. This study aims to create a "medicated chocolate," combining chocolate with a medicinal ingredient to aid in disease prevention. Common ailments in children include coughs and viral infections. Osmium sanctum, or Tulsi, is a herb known for its medicinal properties, including antitussive (cough-relieving) effects. This project focuses on formulating a chocolate Infused with Tulsi extract to provide antitussive benefits. Ginger is its anti-microbial, antifungal and antioxidant properties, giving it the power to alleviate swelling and pain in conditions such as arthritis.^[3] Dark chocolate's inherent characteristics have made it a popular ingredient in medicinal remedies. One of its main features is its antioxidant capacity. Cocoa beans contain polyphenols, which are the principal antioxidant phytonutrient. Cocoa powder has high levels of flavonoids, including catechism and anthocyanin. Chocolate has been identified as a functional food due to its association with decreased cardiovascular activity. Dark chocolate stands out among other varieties.^[4]

GINGER



Ginger, is one of the most widely used species of the ginger family (Zingiberaceae), botanically known as **Zingier officinal**. It is commonly used for various foods and beverages. Since 2,500 years it has been medicinally used in China and India, specifically for colds, headaches, nausea and rheumatism. Ginger is native to South Asia but is now widely grown in Jamaica, Nigeria, China, India, Fiji, Sierra Leone and Australia.

Biological name - Zingier Officinal Biological source - rhizome (underground stem) of zingiber officinale plant.

Family – Zingiberraceae.

Appearance - It is reed - like herb with long, narrow, green leaves and rhizome is a rough, knotty, light brown

to cream - coloured underground stem.

Chemical constituents - 1 to 12 % volatile oil, gingerol, alpha - zingiberol, gingerone, shogaol.

Uses

1. It is helpful natural remedy for paediatric coughs due to its anti -inflammatory & antimicrobial properties.
2. It can help fight off infections that might be causing the cough.
3. used as flavouring agent.
4. used in remedies of cough and asthma.^[5]

TULSI

Tulsi (*osmum sanctum*) is a medicinal herb widely recognized for its therapeutic properties, particularly its antitussive (cough-suppressing) effect. This study aims to develop a ***chocolate formulation containing an aqueous extract of Tulsi, thereby creating a herbal medicated chocolate*** that is both tasty and functional. *Ocimum tenuiflorum* (Tulsi) - *Ocimum tenuiflorum* is a many branched, erect, stout and aromatic herb about 75 cms high. This small herb is found throughout India and is cultivated, worshiped in temples and houses of Hindus. This is commonly known as Vishnu-Priya, Tulsi in Sanskrit, Kala Tulsi in Hindi and India's Holy Basil in English. The leaves, seeds and root of this plant have been used in indigenous Ayurvedic medicine.

Scientific Name: *Ocimum tenuiflorum* **Common Name:**

Tulsi, Holy Basil **Family:** Lamiaceae

Parts Used: Leaves and the flowering tops

CINNOMON

Cinnamon is a popular, aromatic spice derived from the inner bark of evergreen trees in the genus ***Cinnamomum***. Known for its unique flavor, it is used worldwide in both sweet and savory dishes, as well as in traditional medicine and cosmetics. The main types of cinnamon are Ceylon and Cassia, which differ in their chemical composition, flavor, and health implications.

CINNAMON: A flavouring agent of herbal chocolate with potential health benefit like anti-inflammatory agent.

Botanical Name: *Cinnamomum verum*

Family: Laurasia

Synonyms: Ceylon Cinnamon: *Cinnamomum zeylanicum*
Cassia Cinnamon: *Cinnamomum aromaticum*

Active Principles: Bioactive compounds include oleanolic acid, rosmarinic acid, ursolic acid, eugenol, linalool, carvacrol, β elemene, β caryophyllene, germacrene.

Health Benefits

- Great for Healing skin problems Boosts the immunity
- Good dental health Digestive health
- Good source of Vitamin K
- Promotes respiratory health Promotes eye health
- Helps cure fever naturally Fights Allergies
- Improves Skin Curing Common Cold Improves Oral Health
- Gives Relief from Pain
- Improves Bowel Movement
- Gives relief from Indigestion.^[3]

Morphological Characteristics

- Ceylon Cinnamon: Thin, papery bark with a mild flavour.
- Cassia Cinnamon: Thicker, rougher bark with a stronger, spicier taste.
- Leaves: Aromatic, opposite or alternate.
- Flowers: Small and inconspicuous, clustered.
- Microscopic Characteristics:
- Ceylon Cinnamon: Thin, single-layered inner bark cells.

Chemical Constituents: Cinnamaldehyde: Primary compound responsible for the characteristic flavour. Eugenol: Present in varying amounts, contributing to aroma Coumarin: Found in higher levels in Cassia cinnamon, potentially harmful in large quantities.

Uses

- o Medicinal: Traditional use for various health benefits, including anti-inflammatory properties.
- o Fragrance: Aromatic component in perfumes and

potpourri.

- o Culinary: Flavouring agent in both sweet and Savoy dishes. It has anti-microbial, anti-parasitic, anti-oxidant and free radical scavenging properties.^[6]

Jaggery

Jaggery is a natural sweetener obtained by concentrating the juices obtained from sugarcane and/or palm trees. Jaggery can be used as a base for a number of sweet dishes in different countries because it has a sweet, winy fragrance and delicious flavour which lies between brown sugar and molasses. It contains nutrients like protein, vitamins and minerals like iron and copper. It is also used as an energy food having therapeutic advantage so, it can be used for blood purification, regular functioning of liver and keeping blood healthy.

- **Synonyms:** Gur, unrefined sugar, or non-centrifugal sugar.

Source: Concentrated juice of sugarcane Saccharin officinarum cap.

- **Physical characteristics:** A good quality product is golden yellow, hard, and has a sweet, slightly earthy flavour.

- **Texture:** Hard, crystalline structure indicates good quality.
- **Moisture content:** Lower moisture content is desirable for a longer shelf life.
- **Purity:** Organic versions are preferred as they are free from chemical additives like sulphur dioxide, citric acid, and alum.

- **Medicinal uses**

- **Blood purification:** Considered an effective blood purifier.
- **Liver function:** Aids in the cleansing and regular functioning of the liver.
- **Digestive health:** Helps improve digestion and relieves constipation.
- **Energy boost:** Acts as an energy-giving food.
- **Antitoxic properties:** Has been associated with antitoxic and anti-carcinogenic properties.^[7]

Standardization and quality

- **Colour:** Golden yellow is a marker for quality.

MATERIAL AND METHODS

S.R	Ingredients	Description And Uses
1	Dark Chocolate Compound	Palatability, taste masking
2	Ginger	Anti-inflammatory, Antimicrobial
3	Tulsi	Antipyretic, Antiviral
4	Cinnamon	Preservative
5	Jaggery	Digestive agent, boost immunity
6	Honey	Natural sweetener
7	Cocoa Butter	Solidifying agent
8	Water	As vehicle

THERAPEUTICS BENEFITS OF HERBAL CHOCOLATE

1. **Respiratory relief:** The warming and expectorant properties of ginger and Tulsi can help clear congestion, soothe sore throats, and ease coughing.
2. **Immune support:** Both herbs are rich in

antioxidants and possess antimicrobial, antiviral, and anti-inflammatory properties that help strengthen the immune system and protect against seasonal illnesses.

3. **Full fill some nutrition:** - Natural Jaggery which increased immunity booster and also support the

digestion. It contains natural minerals like iron, potassium, and magnesium, which are lost during the refinement of white sugar.

4. preventing from recurrent cough and cold: - A ginger and Tulsi herbal chocolate combines the traditional properties of these herbs to help prevent and relieve the symptoms of recurrent coughs and colds. The ingredients work together to provide immune-boosting, anti- inflammatory, Antiviral and

antimicrobial effects.

5. Harmless because of herbal extracts: -Theo bromine possesses relaxant properties. It induces relaxation of the smooth muscles of the cardiac tissues.

6. Improving memory: - Consumption of hot chocolate has a positive effect on the functioning of the brain and memory enhancement by improving neurovascular coupling.

Evaluation Parameter

Sr. No.	Parameter	Observation
1	Colour	Brown
2	Odour	Chocolate
3	Taste	Slightly Sweet
4	Mouth feel	Smooth
5	Appearance	Glossy
6	pH	5
7	Hardness	Good

Need of work

Children often exhibit aversion to conventional medicines, which can negatively impact treatment adherence. Chocolate is a widely favoured food among paediatric populations and therefore presents an ideal medium for drug delivery. This study aims to formulate a chocolate- based medicinal product incorporating herbal extracts with proven efficacy in alleviating common cold, throat infection and cough symptoms. The herbal components were extracted using standardized methods to ensure purity and potency. The resulting formulation leverages the appealing colour, aroma, and texture of chocolate to enhance palatability and acceptance among children, thereby potentially improving therapeutic outcomes.

CONCLUSION

Paediatric herbal chocolate is a new and smart way to give herbal medicine to children. Since many kids don't like the taste of regular medicine, combining it with chocolate makes it easier for them to take. This can help improve how well the medicine works, because children are more likely to take it regularly. There are some challenges, like the sugar in chocolate and making sure the herbs stay effective, but the idea has a lot of promise. With more research, better recipes, and clear safety rules, herbal chocolates could become a popular and helpful option in children's healthcare.

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