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## ERBA TII-antioxidant rich and anti-diabetic herbal tea

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**Abstract**

Tea is an aromatic beverage commonly prepared by pouring hot or boiling water over leaves. The term herbal tea usually refers to infusions of herbs made without the tea plant. Herbal teas are mostly imbibed for physical and medicinal impacts, especially for relaxant, stimulant, or sedative properties. In this product *Dalbergia sissoo* (Sheesham) is used as functional ingredient. It has been used for therapeutic purpose from thousands of years and now there is a growing demand for plant based health product, cosmetics and medicines. *Dalbergia sissoo* is a widely growing plant which is used traditionally as anti-inflammatory, antipyretic, analgesic, anti-oxidant, anti-diabetic and as antimicrobial agent. According to several studies chemical constituents have been isolated and identified from different parts of the plant belonging to the category of alkaloids, glycosides, flavanols, tannins, saponins, sterols and terpenoids. Compounds isolated from *Dalbergia sissoo* like an isoflavone, biochanin is a potent chemotherapeutic cancer preventive agent with a distinct estrogenic activity. After commencement of many trials, 4<sup>th</sup> trial was considered best because it was good balanced between nutrient and taste. The challenges faced were its flavor astringency and odor. These challenges were overcome in this trial. It is used as a local stimulant as a powder and infusion stops vomiting and nausea, relieves flatulence and diarrhea and can also be employed to stop hemorrhage of the womb.

**Keywords:** Sheesham leaves, mango leaves, antioxidant, antidiabetic

**Introduction**

Herbal tea look like tea and is brewed as the same way as tea, but in reality it is not considered a tea at all. This is due to the fact that they do not originate from the *Camellia sinensis* bush, the plant from which all teas are made [1] Herbal teas are actually mixtures of several ingredients, and are more accurately known as 'tisanes'. Tisanes are made from combinations of dried leaves, seeds, grasses, nuts, barks, fruits, flowers, or other botanical elements that give them their taste and provide the benefits of herbal tea. [1] These days consumers are cautious of their health so they are demanding for more natural and health benefitting food so tea seems to be a good vehicle in this respect because of its good taste and aroma. Hence this tea belongs to a quickly growing market of wellness beverages. [2] Medicinal plants are naturally very good antioxidant source where antioxidant activity is ascribed due to presence of phenolics, flavonoids, vitamins and secondary metabolites. [3] In this product several ingredients are used like *Dalbergia sissoo* (Sheesham leaves), *Mangifera indica* (mango leaves), (tulsi leaves). Giloy, Black peeper, cardamom and cinnamon these are added to impart flavor in tea.

**Materials and methods****Collection of materials**

Raw material was collected from Jiwaji University, Gwalior to prepared herbal tea. Ingredients like Sheesham leaves, mango leaves, tulsi leaves and giloy were collected and dried. Black pepper, cardamom and cinnamon were taken from local market.

**Ingredients**

Sheesham leaves, mango leaves, tulsi leaves, giloy, Black pepper, cardamom and cinnamon.

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### *Dalbergia sissoo* (Sheesham)



*Dalbergia sissoo* Linn is Indian rosewood which is a deciduous forest tree. It is natively found in Indian subcontinent. It is called as Sheesham<sup>[4]</sup> *D. sissoo* is a widely growing plant which is used traditionally as anti-inflammatory, antipyretic, analgesic, anti-oxidant, anti-diabetic and antimicrobial agent<sup>[4][5]</sup>. Leaves of Sheesham show antioxidant activity.<sup>[4]</sup>

### Mango



*Mangifera indica* commonly known as mango, is a species of flowering plant in family Anacardiaceae. Mango leaves possesses anti-diabetic, anti-oxidant, anti-viral, anti-inflammatory properties. It also shows various effects like antibacterial, anti-fungal, anthelmintic, anti-parasitic, anticancer, anti HIV, antipyretic, antidiarrheal, immunomodulation, hypolipidemic, anti-microbial properties etc. The leaves of *Mangifera indica* are used for antidiabetic Properties also.<sup>[6]</sup>

### Tulsi



Tulsi (*Ocimum sanctum*) is an aromatic shrub in the basil family Lamiaceae (Tribe Ocimeae) that is thought to have originated in north central India and now grows native throughout the eastern world tropics.<sup>[7]</sup> One of the study shows that Tulsi is effective for diabetes, by reducing blood glucose levels. The same study also showed significant

reduction in total cholesterol levels<sup>[8]</sup>. Tulsi's beneficial effect on blood glucose levels is due to its antioxidant properties. Tulsi also shows some promise for protection from radiation poisoning and cataracts.<sup>[8]</sup>

### Pomegranate peel



Pomegranate (Family: Punicaceae) is rich source of antioxidant and polyphenols. Fruit peel has the highest antioxidant activity, which is in line with its high content of polyphenols. It has therapeutic properties like antitumor, anti-inflammatory, antiviral, antibacterial, antidiarrheal, and antiobesity<sup>[9]</sup> Natural antioxidants like dietary flavanoids are powerful antioxidants (due to their content of polyphenols (tannins, ellagic and gallic acids) and received increasing attention as potential protectors against a variety of human diseases, in particular cardiovascular disease and cancer.<sup>[10]</sup>

### Black pepper



Black pepper fruit (*Piper nigrum* L.) is one of the most famous pungent and flavor spices in the world, it is known as the king of spices.<sup>[11]</sup> Piperine exhibits diverse pharmacological activities like antihypertensive and antiplatelets, antioxidant, antitumor, antipyretic.<sup>[12]</sup> In herbal tea black pepper is used as flavoring agent.

### Cardamom



Cardamom (*Elettaria cardamomum*) is queen of spices. It has pleasant aroma and flavor. It is used for flavoring hot

beverages such as tea and coffee as well as sweets. It possessed antioxidant, antihypertensive, gastro protective, antispasmodic, antibacterial, antiplatelet aggregation and anticancer properties.<sup>[13]</sup>

**Giloy**



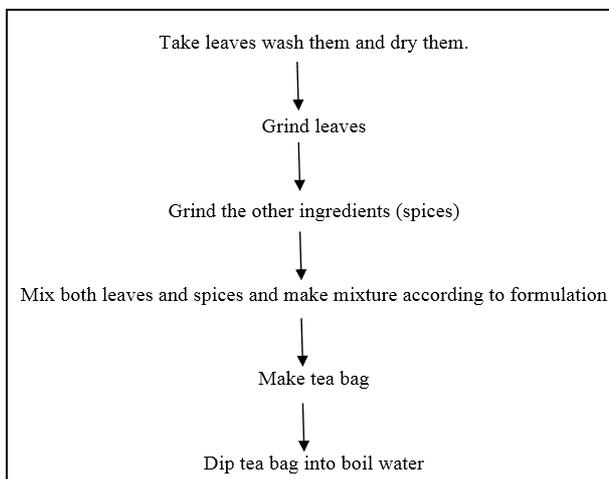
Giloy is traditional medicinal plant which helps to cure many diseases. It has high content of potassium and chromium<sup>[14]</sup>. The extract of *T. cordifolia* stem ameliorates the derangements in lipid metabolism caused by diabetes mellitus. *T. cordifolia* stem was found to have potent antidiabetic property by reducing blood sugar level.<sup>[15]</sup>

**Cinnamon**



Cinnamon (*Cinnamomum verum*) is an ever green tree of tropical area. The spice is derived from the bark of an evergreen tree, which belongs to the family Lauraceae. Cinnamon is known for its aromatic fragrance. It has been found to be extremely helpful in the treatment of Type 2 diabetes mellitus and insulin resistance.<sup>[16]</sup>

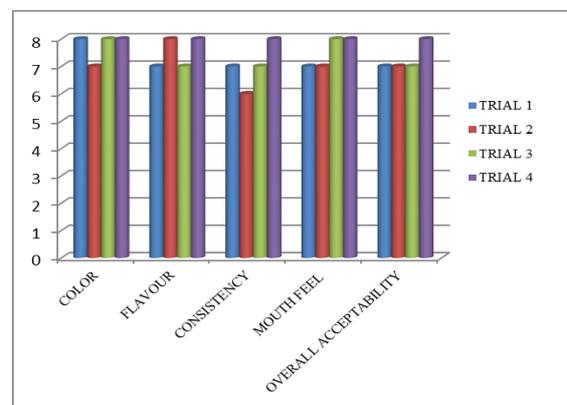
**Flow chart of preparation of tea**



**Sensory evaluation**

The sensory evaluation was carried out by an untrained panel in the age 20 – 30 years consisting faculty and post graduate students of the laboratory of centre for food technology, Jiwaji University. Sensory evaluation of Erba tea samples for different parameters like Color, taste, aroma and texture were evaluated on nine point hedonic scale (9-1) basis.

Trials	Color	Flavour	Consistency	Mouth feel	Overall acceptability
1	8	7	7	7	7
2	7	8	6	7	7
3	8	7	7	8	7
4	8	8	8	8	8



**Fig 1:** Comparable data of trials

**Result and Discussion**

Finalization of product was done on the basis of sensory evaluation. To enhance the flavor of tea several ingredients are added like black pepper, cardamom, cinnamon. Many trials were formulated out of which 4<sup>th</sup> trial was finalized. Overall acceptability was found to be good which 8 according to hedonic scale is. Erba tea is rich in antioxidant and also cures diabetes. It can also serves with honey as per taste preference.

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