



Formulation Of Herbal Cinnamon (*Cinnamomum Verum*) Tea In Treatment Of PCOD And Menstrual Cramps

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Abstract

The **objective** of this study is to brew a cinnamon tea bag and examine the benefits of cinnamon for PCOD and menstrual cramps. Among women of reproductive age, polycystic ovary disease is a hormonal illness. In patients with PCOD, the secretion rate and metabolism of androgens and estrogens are disturbed, leading to enlarged ovaries with small cysts on the margins. Adolescent females frequently experience menstrual issues, which can limit their social life and outdoor activities. Teenage girls who have an abnormal body mass index (BMI) experience suffering more frequently. **Methodology** = For the formulation of herbal cinnamon tea in treatment of PCOD and menstrual cramps, ingredients like cinnamon (*Cinnamomum verum*) as an API and ginger (*Zingiber officinale*), tulsi (*Ocimum sanctum*), and mint (*Mentha piperita*) are utilized as excipients. The hot air oven, mortar pestle, sieve nos. 12 and 22, and weighing scale are all used in the whole process. The IR is used to analysed the main constituent in cinnamon in treatment of PCOD and menstrual cramps. **Conclusion**=Drug development and pharmacological research benefit greatly from the study of medicinal plants. In India, one-fifth of all plants are used for therapeutic purposes. The three main chemical components are cinnamaldehyde, eugenol, and cinnamic acid. In scientific literature, cinnamon's anti-microbial and anti-inflammatory properties are mentioned. Cinnamon has long been used as a spice and has been determined to be extremely safe for animals with acute toxicity. Herbal teas are commonly known to soothe the stomach. Cinnamon herbal tea is a stimulating, aromatic beverage with a number of health advantages. It might: Reduce menstruation discomfort. According to research, drinking cinnamon herbal tea may help minimize menstrual symptoms like bleeding, discomfort, nausea, and vomiting. As per scientists, consuming cinnamon herbal tea may help reduce the severity of symptoms including nausea and menstrual cramps.

Keywords: PCOD, menstrual cramp, cinnamon and cinnamon herbal tea.

1.Introduction

Polycystic ovary disease is referred to as PCOD. Women with the syndrome experience cysts in their ovaries. As a result, the body produces more male hormones than is necessary, resulting in a hormonal imbalance. In addition to other concerns, the hormonal imbalance causes troubles with menstruation and conception. PCOD affects

5–10% of women of reproductive age, increasing to 15% in cases of infertility in women. The numerous little sacs in the ovaries fill with fluid in PCOD. Each of these contains a developing egg that never results in ovulation. The absence of ovulation results in a hormonal imbalance with a significant release of male hormone. Irregular periods, increased hair growth, weight gain, acne, and

severe bleeding are all prevalent PCOD symptoms.

Although being called "tea," herbal tea often does not contain the leaves or leaf buds of tea plants. Herbal teas' primary ingredient is tisanes, which are combinations or infusions of dried fruits, flowers, spices, and herbs in water. Tisanes have been shown to have therapeutic effect.

Drug Profile- Cinnamon (*Cinnamomum verum*)

Synonyms=Kalmi-Dalchini, Ceylon cinnamon
Biological source=The inner dried bark of Cinnamon verum tree shoots are what makes up cinnamon.

Family = Lauraceae, and the amount of volatile oil should not be less than 1.0%.

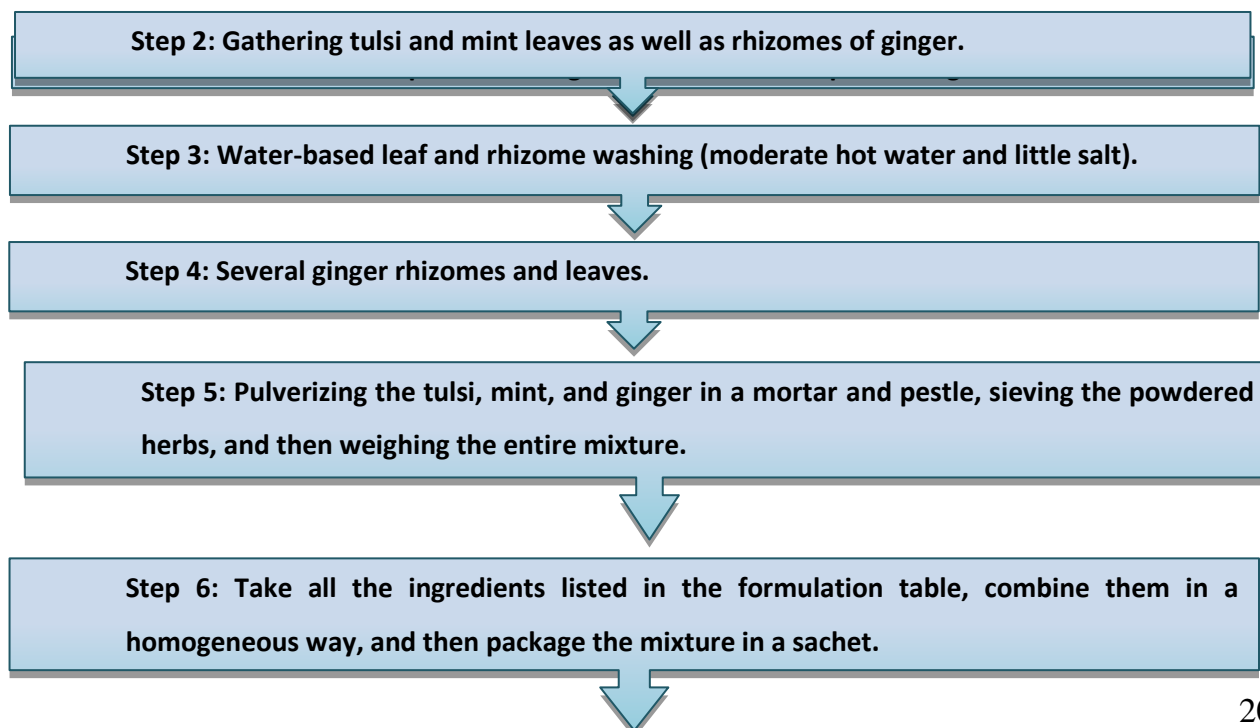
Geolocation Source=The evergreen tropical tree known as cinnamon is thought to have originated on the Malabar coast of India and Sri Lanka. Moreover, Brazil and Jamaica both have it. True cinnamon is sometimes known as Sri Lanka cinnamon because Sri Lanka meets the majority of global demand.

One of the most effective and well-known spices used globally, not only in cooking but also in conventional and modern treatments, is the bark of various cinnamon species. It appears that cinnamon tea can ease menstruation discomfort. This is due to its ability to improve blood circulation, increase endorphin levels, and decrease prostaglandin levels.

2. Materials and methods

I. Plants materials:

- i. Cinnamon powder=The cinnamon sticks should be broken into smaller sticks so they can be powdered more easily. Now use a mortar and pestle to grind it into a fine powder. Cinnamon powder should be sieved through sieves no.12 and 22.
 - ii. Tulsi powder= Selecting fresh tulsi leaves and letting them dry in the open for around five days is necessary for making tulsi powder. Use a mortar and pestle to crush them into a fine powder once they have dried. For uniform particle size pass through sieve through sieves no.12 and 22.
 - iii. Mint powder= Place the leaves on a sizable plate or baking sheet. Place the plate in direct sunlight for 6 to 8 hours. Make a fine powder out of the dry leaves by grinding them in a mortar and pestle. For uniform particle size pass through sieve through sieves no.12 and 22.
 - iv. Ginger powder= To get rid of extra moisture in the ginger, place the sliced ginger in a hot air oven. Use a mortar and pestle to grind the dried ginger into powder. Use sieves no. 12 and 22 to sieve the powder for the best results.
- II. Apparatus:
Weighing balance, Sieves no.12 and 22, Hot air oven, Mortar and pestle.
- III. Instrument: Infrared Spectroscopy (FTIR)
- IV. Procedure:



Step 7: Tea bag material:

- It is composed of non-woven material.
- Its fine tea particles move through filters with ease and have a pleasant aroma.
- The non-woven tetrahedron tea bags are superior to the original paper filter tea bag due to their competitive price advantage and outstanding filtering capacity.
- Non-woven bags can be recycled despite being constructed of non-biodegradable materials.

Step 8: Filling procedure:

I. Take an empty tea bag.

II. Fold in the centre.

IV. Stuff the measured quantity of powder combination into a tea bag that is empty.

IV. Tetrahedrally fold the tea bag.

V. Take a thread, put it on the tea bag, and properly staple it.

Ingredients name	Quantity taken	Therapeutic activity
Cinnamon powder	1.5gm	Reduces chances of PCOD and menstrual cramps
Ginger powder	0.18gm	Preservative and antimicrobial
Tulsi powder	0.16gm	Antioxidant agent
Mint powder	0.16gm	Flavouring agent and cooling effect
Total quantity	2gm	

Table no. 2.1. Formulation table

3.Observation / Result

Qualitative Phytochemical Analysis study of Cinnamon powder: The preliminary phytochemicals test was performed to determine the presence of several compound present in the cinnamon

A) Test for Alkaloids

that could be responsible for potential activity. The test and complete protocol for the test were listed in following table.

Sr no.	Test	Procedure	Inference
1	Dragendroffs test	In 2-3ml filtrate or extract add few drops of dragendroffs reagent, gives orange brown precipitation.	Test is present

2	Mayers test	In 2-3ml filtrate or extract add few drops of Mayer's reagent, gives cream present.	Test is present
3	Hager's test	In 2-3ml filtrate or extract add few drops of Hager's reagent, gives yellow precipitation is formed.	Test is present
4	Wagner's test	In 2-3ml filtrate or extract add few drops of Wagner's reagent, gives reddish brown precipitation.	Test is present

Table no.3.1 Test for Alkaloids**B) Test for Tannin**

Sr. No.	Test	Procedure	Inference
1.	FeCl ₃ solution	In 2-3ml filtrate or extract add few drops of 3%FeCl ₃ solution, gives deep blue-black color is formed.	Test is present
2	Lead acetate solution	In 2-3ml filtrate or extract add few drops of Lead acetate solution gives white precipitation is formed.	Test is present

Table no. 3.2. Test for Tannin**C)Test for Saponin**

Sr. No.	Test	Procedure	Inference
1	Foam test	Shake the extract or dry powder vigorously with water persistent foam is observed.	Test is present

Table no. 3.3. Test for Saponin**D)Test for Steroids / Terpenoid**

Sr. No.	Test	Procedure	Inference
1	Salkowski test	2ml of extract, add 2ml of chloroform add 2ml of conc. H ₂ SO ₄ shake well, chloroform layers appear red and acid layer shows greenish yellow fluorescence.	Test is present

Table no. 3.4. Test for Steroids / Terpenoid**E) Test for Flavonoid**

Sr. No.	Test	Procedure	Inference
1	Sulphuric acid test	Sulphuric acid 60% flavonols dissolve in to it and give a deep yellow solution chalcones gives red bluish solution.	Test is present
2	Lead acetate test	Small qty of residue add lead solution yellow precipitate color is formed.	Test is present
3	Sodium hydroxide test	Addition of increasing amount of sodium hydroxide to the residue shows discolorize after the addition of solution.	Test is present

Table no. 3.5. Test for Flavonoid**F) Test for Carbohydrates**

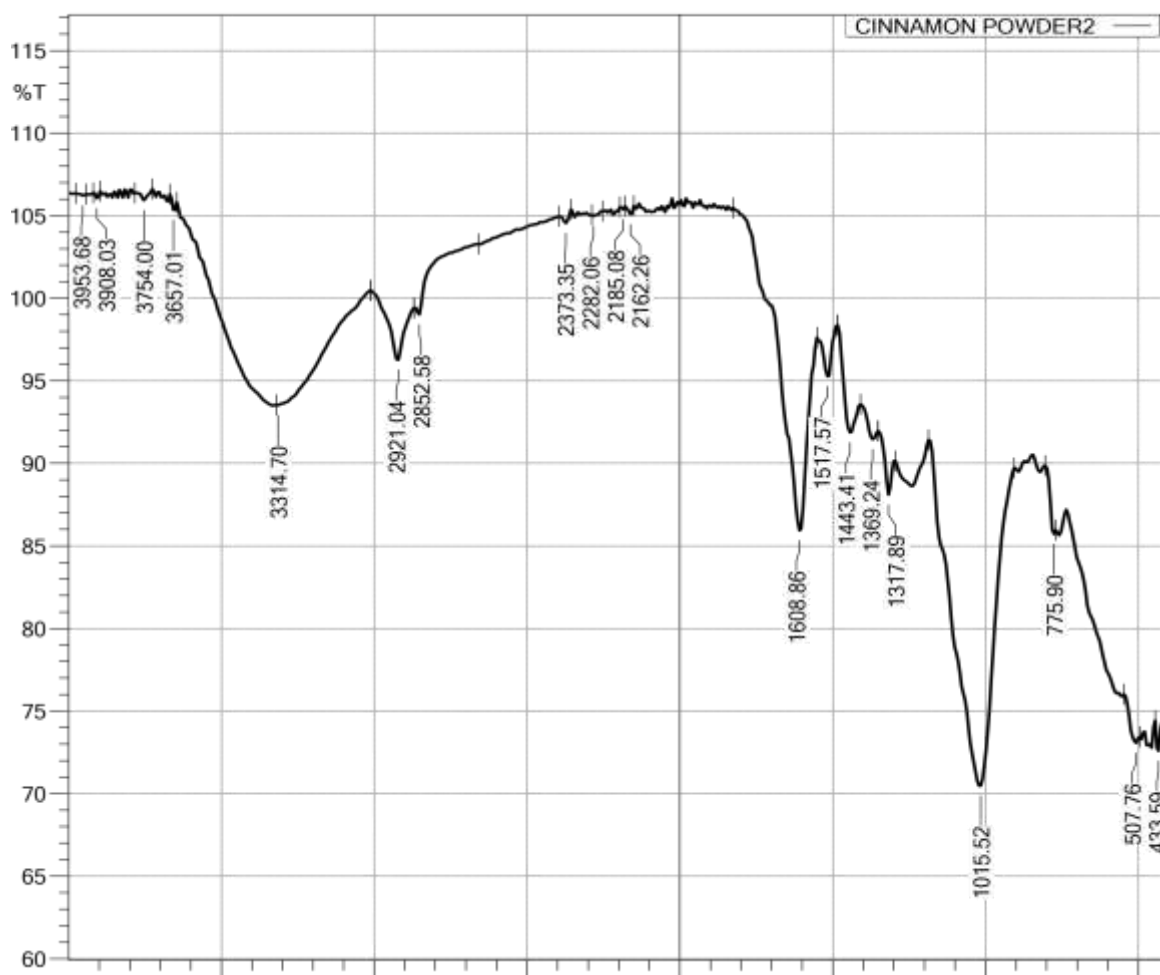
Sr. No	Test	Procedure	Inference
1	Molisch test	Filtrate + 2 drops of alcoholic alpha naphthol formation of violet color ring at junction of two liquid.	Test is present
2	Benedicts test	Filtrate + benedicts reagent heat genentally gives orange red precipitate.	Test is present
3	Fehling's test	Filtrate + hydrolyzed dil. HCL neutralized with alkali and heated with Fehling A and B solution formation of red precipitation.	Test is present

Table no. 3.6. Test for Carbohydrates**IR Spectroscopy of Cinnamon powder:**

3500 3000 2500 2000 1500 1000 500
cm⁻¹

R SPECTRA OF CINNAMON POWDER

SHIMADZU



- R Spectra of Cinnamon powder showing presence of:
 - i. Cinnamaldehyde
 - ii. Cinnamic acid
 - iii. Eugenol

Discussion

Polycystic ovarian disease (PCOD) affects the female ovaries and results in cyst growth, which ultimately affects fertility. Irregular menstruation, heavy bleeding, weight gain, and acne are symptoms. PCOD is caused by hormonal imbalance and infertility. Menstrual cramps Prostaglandins are secreted while a woman is menstruating because her uterus's harmonic secretion is out of balance, which results in inflammation and menstrual pain. Getting started with herbal tea: Herbal tea is a mixture of herbs made from the leaves, seeds, and/or roots of medicinal plants. Teas made from herbs are favoured since they have little toxicity and negative effects.

Summary of Cinnamon - Biological Name:

Cinnamomum verum

Cinnamaldehyde, eugenol, and cinnamic acid are the active ingredients in cinnamon.

Course of action: Obtaining raw drugs (Cinnamon- *Cinnamomum verum*); obtaining excipient. (Ginger (*Zingiber officinale*), mint (*Mentha piperita*) and Tulsi (*Ocimum sanctum*))







Use a mortar and pestle to grind cinnamon into powder. then make the tulsi, ginger, and mint powders using a mortar and pestle. To ensure consistent size, sieve each powder and then weigh each one. Then powders should be combined with a mortar and pestle. Fill a bag with the powder mixture. QA And QC Test: Three bags are randomly chosen from the batch of prepared bags and weighed; the weight of the three bags must be the same (2gm). The active components of cinnamon (cinnamaldehyde, eugenol, and cinnamic

acid) are detected using the IR spectroscopy method for quality control testing.

6. Conclusion

For the past 50 years, PCOD has been the subject of extensive research; however, relatively little is still known about its causes. Yet, there has been significant progress in research of this disease's effects and treatment. The study of medicinal plants has a significant impact on drug development and pharmacological research. The three primary chemical components of cinnamon—cinnamaldehyde, eugenol, and cinnamic acid—help to lower the risk of PCOD, which is why cinnamon herbal tea is made. One-fifth of all plants are used for pharmacological purposes in India. Cinnamon's antibacterial and anti-inflammatory qualities are acknowledged in scientific literature. For animals with acute toxicity, cinnamon has been found to be extremely safe and has been used for

centuries as a spice. Teas made from herbs are frequently used to calm the stomach. A stimulating, aromatic beverage with a wide range of medicinal benefits is cinnamon herbal tea. It might: make menstruation less painful. Consuming cinnamon herbal tea may help lessen menstrual symptoms like bleeding, pain, nausea, and vomiting, according to study. Studies have shown that drinking cinnamon herbal tea can minimize the intensity of symptoms including nausea and menstrual cramps. Based on the results of the phytochemical screening as well as research papers and literature reviews, the prepared tea will be used to diagnose menstrual cramps and lessen the likelihood of PCOD. The presence of alkaloids (cinnamaldehyde), carboxylic acids (cinnamic acid), and the phenol (eugenol) that exhibits anti-inflammatory properties. As concluded, the presence of active ingredients were detected using IR Spectroscopy.

			
<p>Fig.no.1. Cinnamon (<i>Cinnamomum verum</i>)</p>	<p>Fig.no.2. Tulsi (<i>Ocimum sanctum</i>)</p>	<p>Fig.no.3. Mint (<i>Mentha piperita</i>)</p>	
			
<p>Fig.no.4. Ginger (<i>Zingiber officinale</i>)</p>	<p>Fig no.3.5& Qualitative Phytochemical Analysis study of Cinnamon powder</p>		<p>Fig no. 7 Cinnamon Tea</p>

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