

HERBAL HIBISCUS TEA USED FOR MENESTRUAL DISORDER**Disha Tanaji Waghmode* and Meera Deokar**

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ABSTRACT

To provide documentation proving the effectiveness of herbal remedies against a variety of conditions, the extraction process for these products must be examined. One well-known herbal remedy for bleeding soother irritated tissue and relxes spams is hibiscus rosa sinensis. Hibiscus rosa sinensis extracts of various kinds are also used to promote hair development. Hibiscus rosa sinensis is a member of the family Malvaceae. The comparison between microwave assisted extraction (MAE) and conventional extraction (CE) was carried out in the current study project. While both are hydrolyzed, the results for phytochemicals and physicochemical characteristics appear to differ. Both extracts contained proteins, carbohydrates, glycosides, amino acids, phenolic compounds, and tannins. The CE is discovered to be engaged in fight t E.coli, B.Subtilis, S.Aureus bacteria while MAE is found to be inactive.

KEYWORDS: dysmenorrhoea, adolescents, cramping, prostaglandin, nonsteroidal anti-inflammatory drugs.

INTRODUCTION

Menstrual cramps or unpleasant periods are referred to medically as "dysmenorrhea." You may experience other symptoms such as nausea, tiredness, and diarrhea in addition to cramps. Menstrual cramps are most frequently experienced the day before or the first of your cycle. Most people experience a reduction in symptoms within two to three days.

It's typical to have mild to moderate period cramps. However, some people have pain so intense that it interferes with their daily lives and keeps them from engaging in enjoyable activities during their menstrual cycle. For uncomfortable periods, medication and other

therapies can be helpful.

dysmenorrhea types

Primary and secondary dysmenorrhea are the two forms that exist.

First-Time Dysmenorrhea

Menstrual pains that return every time you receive your period but aren't brought on by another medical problem are called primary dysmenorrhea. Usually, the pain starts a day or two before the actual start of your menstruation. You can get mild to severe pain in your thighs, back, or lower abdomen. Usually, the pain goes away in two or three days. The most prevalent kind of dysmenorrhea is called primarydysmenorrhea.

Discontinuous dysmenorrhea

Secondary dysmenorrhea is the disorder that occurs when an infection or illness in your reproductive system causes painful periods. Comparedto regular menstrual cramps, secondary dysmenorrhea pain typically starts earlier in the menstrual cycle and lasts longer. For instance, cramps can start a few days before your period and continue until the bleeding ends entirely. Less frequently, secondary dysmenorrheaoccurs.

Secondary dysmenorrhea is a painful menstrual cycle caused by an underlying reproductive organ problem. Cramps can be brought on bythe following conditions:

Endometriosis is a disorder in which the endometrium, the tissue liningyour uterus, develops outside of it. These tissue fragments can cause discomfort, swelling, and scarring when they flow during your menstrual cycle.

Adenomyosis: A disorder in which the uterine lining develops into the uterine muscle. This disorder may result in pain, irregular bleeding, andan enlarged uterus compared to normal.

Benign tumors, or fibroids, are noncancerous growths that can develop within, outside, or within the walls of your uterus. Pelvic inflammatory disease (PID) is an illness that originates in the uterus and can progress to other reproductive organs due to bacterialovergrowth. Pain during sex or in your stomach can be symptoms of PID.

Cervical stenosis is a disorder in which the cervix narrows as a result of a procedure, medication, or another illness. Congenital conditions: Menstruation pain might result from some conditions that you are born with. This could be an atypically shaped uterus or other disorders pertaining to your fallopian tubes or ovaries.

Who is more susceptible to experiencing dysmenorrhea?

If you: Started your menstrual cycle before the age of twelve; or Experienced your first period before the age of twelve.

- You are under 20 years old.
- You have heavy or longer-than-seven-day periods.
- You take a cigarette a day.
- One of your biological parents suffers from dysmenorrhea.

To reduce cramps during menstruation

Menstrual cramps can be treated in a number of ways without the use of drugs. Among them are

- Using a hot water bottle or heating pad to your lower back or belly in order to relieve cramps.
- Obtaining more sleep.
- Avoiding caffeine-containing foods.
- Abstaining from alcohol and tobacco use.
- Giving your abdominal and lower back a massage.
- Engaging in regular exercise. Exercisers typically experience less pain during their periods.

Your doctor will talk to you about treatment options for secondary dysmenorrhea if tests reveal that you have this painful condition. This could entail surgery, other kinds of drugs, or oral contraceptives.

Which alternative remedies are effective for treating menstrual cramps? When going through a painful phase, people frequently look for natural solutions to ease their discomfort. The outcomes of studies using complementary or alternative approaches have not been conclusively established. Here are a few natural remedies for period pain relief:

- Yoga.
- Both acupressure and acupuncture.
- Breathing techniques or relaxation techniques.
- Consuming green tea and eating anti-inflammatory foods like almonds, ginger, and leafy greens.
- Taking anti-inflammatory vitamins, such as magnesium or vitamin D, may assist.

An antispasmodic drug is a treatment that reduces, stops, or relieves muscle spasms, particularly those that affect smooth muscle, such as the gut wall.

HERBAL REMEDY

Dysmenorrhea is the medical name for menstrual cramps. Pains that start in the lower abdomen and pelvis, or below the waist, are known as menstrual cramps. The cramps may hurt a lot or only be a mild ache. They could be ongoing or sporadic. Dysmenorrhea is treated with traditional medicines made from more than 10,000 plant species.

Plants have been used as models for medicine since ancient times. Plants are mentioned in Ayurveda and other Indian medical system texts as treatments for a variety of human illnesses. There are over 45,000 plant species in India, and many of them are thought to possess medicinal properties. Recent decades have seen studies on herbs that have been traditionally used to treat dysmenorrhea or that have been mentioned in ancient literature. According to this review, plants and their extracts are used as a treatment for dysmenorrhea. Every month, a lot of women struggle with different menstrual issues. Hibiscus is a natural cure that is becoming more and more well-known for its advantages. This article explores the use of hibiscus in Ayurveda and how it can help with menstruation issues. The bright blossoms of the genus *Hibiscus*, which belongs to the Malvaceae family of flowering plants, are well-known. Beyond just being beautiful, hibiscus has a long history of usage in traditional medicine, particularly for issues related to menstruation. Some of these traditional uses are beginning to receive support from scientific studies. Hibiscus and Issues with menstruation.

Drug Profile

Drug Name: Herbal Antispasmodic Drug

Biological name: *Hibiscus rosasinesis* L.

Kingdom: Plantae

Family: Malvaceae

Genus: *Hibiscus*

Species: *Rosasinensis*

Chemical Constituents: anthraquinones, quinines, phenols, flavanoides, alkaloids, terpenoids, saponins, carbohydrates,

Microscopic Structure



Colour: Pinkish red

Taste: Sharp and Slightly astringent

Calyx: Brief calyx and 5 lobed

Corolla: Gamopetalous

Pista and Stamen: Polydelphous

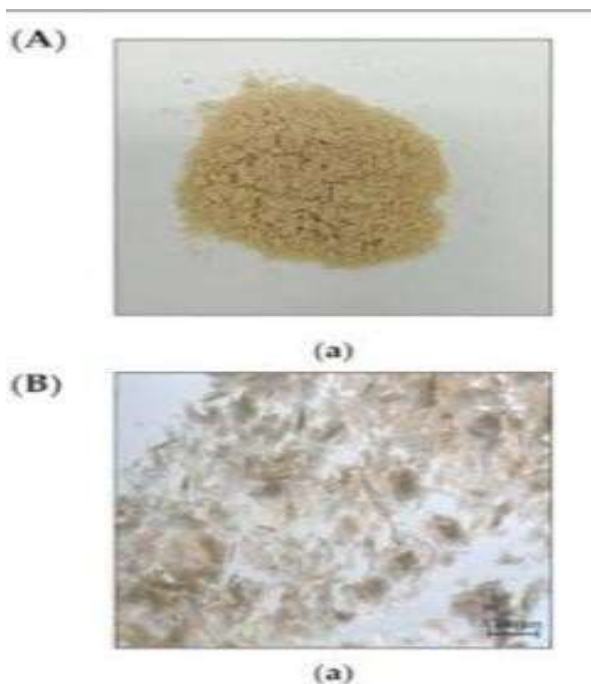
2. Drug Name: Herbal Antispasmodic Drug

Biological Name: Zingiber

Family: Zingiberaceae

Chemical Constituent: Tannins, phlobatannins, saponins, cardiac glycosides, flavonoids, terpenoids. ergosterol, citric, tartaric and oxalicacids. Phenolic, ascorbic acid

Microscopic Structure



Powder microscopy of GINGER

Colour: Buff Colour

Odour: Aromatic

Taste: Pungant

★ Identification Test

1. Hibiscus flower powder

Detection of alkaloids

Solvent free extract, 50 mg was stirred with 5 mL of dilute hydrochloric acid and filtered. The filtrate was tested carefully with various alkaloidal reagents as follows.

- i) Mayer's test:** To a few mL of filtrate, two drop of Mayer's reagent added by the side of test tube. A white or creamy precipitate indicated the test as positive.
- ii) Wagner's test:** To a few ml of filtrate, few drops of Wager's reagents were added by the side of the test tube. A reddish-brown precipitate confirmed the test as positive.
- iii) Hager's test:** To a few ml of filtrate 1 or 2 of Hager's reagent (saturated aqueous solution of picric acid) were added. A prominent yellow precipitate indicated the test as positive.



Detection of Carbohydrate

- i) **Fehling's test:** One ml of filtrate was boiled on water bath with 1 ml each Fehling's solutions A and B. Red precipitate indicates the presence of sugar.
- ii) **Barfoed's test:** To 1 ml of filtrate, 1 ml of Barfoed's reagent was added and heated on a boiling water bath for 2 min. red precipitate indicates the presence of sugar.



Detection of phenolic compounds and tannins

- i) **Ferric chloride test:** The extract (50 mg) was dissolved in 5 ml distilled water. To this few drops of neutral 5% ferric chloride solutions were added. A dark green color indicates the presence of phenolic compounds.



Chemical Test	Extract
Alkaloids	+
Polyphenols	+
Flavonoides	+
Anthocyanins	+
Tannins	+
Quinones	—
Saponins	+

2. Ginger Powder Detection of alkaloids

Wagner's test was accomplished by adding 2 drops of Wagner's reagent to 3 ml of the extract solution along the sides of the test tube. The positive result showed brown/reddish precipitate.

Identification test for alkaloid



S. No.	Test	Ginger Extract
1	Alkaloids	Present
2	Amino Acids	Present
3	Carbohydrates	Present
4	Proteins	Present
5	Steroids	Present
6	Glycosides	Present
7	Flavonoids	Present

Ash value Test

The ash value test is a crucial analytical procedure used to assess the quality and purity of crude drugs, particularly when they are in powdered form.

Total Ash Value

- Purpose: To determine the total inorganic content in the crude drug.
- Procedure: Weigh approximately 5 grams of the powdered drug in a tarred silica crucible.

Gradually increase the heat using a muffle furnace until the sample is free from carbon.

Cool the crucible and weigh the resulting ash.

Calculate the percentage of total ash relative to the air-dried sample. Significance: The total ash reflects the care taken during drug preparation.



Ash value

Ash Value of sample 3% Decrease in moisture after heating

Powder Mixing method**Trituration**

It is a technique mixing of hard powder by mincing or pulverizing them inside mortar and pestle. This techniques mix powders by reducing their size. Two kinds of mortar and pestle are used in trituration. If you want to simply mixing two powders together without diminishing their grain size then you should select glass mortar. If small sized particles are desired, then you should use wedgewood mortar. This mortar is preferred for milling and pulverization as it has coarse interior.

Advantages

This technique creates fine sized particles.

Therapeutic effects of powders are enhanced by trituration. Limitation

Trituration is a laborious process and does not have much efficiency. Hard metals are difficult to mix by trituration.

**Evaluation Test****Physiochemical Evaluation****Bulk density**

Bulk density and tap density were determined by densitometer. 50 cm³ of powder was introduced into the 50 ml graduated cylinder. The dropping interval of the cylinder was two sec at the height of 2 cm three times on the hard wooden surface. The bulk density was calculated by dividing the weight of the sample in grams by the final volume in cm³ of the sample contained in the cylinder.



Tapped density

50cm³ of powder was introduced into the 50 ml graduated cylinder. The dropping interval of the cylinder was two sec at the height of 2 cm 100 times on the hard wooden surface. The tap density was calculated by dividing the weight of the sample in grams by the final volume in cm³ of the sample contained in the cylinder.



Particle size

Bond and hold are fascinations which occur at surfaces, particle size will impact the flow ability. Particles with more surfaces to mass proportions are stronger than coarser particles that are affected by gravitational powers.^[2] Molecular size bigger than 250 μm are typically moderately free-flowing, wherein the molecules with size lower than 100 μm are firm and have no flow issues.^[14] Those having a molecule size under 10 μm are generally firm and oppose flow below gravity, aside from potentially as bigger aggregates.

Particle shape

Powders with comparable molecule estimates yet disparate shapes have extraordinarily unique flow characters attributable to contrasts in interparticulate contact areas.

For instance: A gathering of circles consists of base between molecule contact with an ideal flow character, although a gathering of molecule chips have an exceptionally high surface to volume proportion and helpless flow characters.

Packing property

A set of particles can be filled into a volume of space to produce a powder bed which is in static equilibrium due to the interaction of gravitational and adhesive/cohesive forces. The change in bulk volume has been produced by rearrangement of the packing geometry of the particles. In general, such geometric rearrangements result in a transition from loosely packed to more tightly packed. More tightly packed powders require a higher driving force to produce powder flow than more loosely packed particles.

Angle of repose

Maximum angle possible between the surface of pile of powder sample and horizontal plane.

$$\tan \theta = h/r$$

Where, h = Height of powder sampler = Radius of circle

$$\theta = 45^\circ$$

It is passable**Carr's Index**

The Carr Index and the Hausner Ratio are both meant as being indicators of the flowability of bulk solids. It is thus not always obvious to characterize the solid flowability with the few set of data that Engineers usually have in hand during design or troubleshooting.

Both Carr and Hausner attempted just that: assuming that the compressibility of a solid is related to its flowability, they proposed to measure the and calculate a ratio in order to estimate how the material will flow. The lower the Carr Index or Hausner Ratio, the more flowable is a material.

Carr's Index Formula

$$\text{Carr_Index} = (\rho_{\text{tapped}} - \rho_{\text{bulk}}) / \rho_{\text{tapped}} * 100$$

Sr. No	Ash	Result
1	Total	3%
2.	Bulk density	0.4169
3.	Tapped density	0.5535
4	Angle of repose	41-45
5.	Carr's index	24.68%
6 .	Hausner ratio	1.3277

★ MATERIAL AND METHODS

The plants containing antispasmodic property were selected according to their medicinal uses from various categories like anti-bacterial, anti-oxidant, anti-diabetic, anti-obesity. The crude drugs like Hibiscus, zinger and sugar used to prepare herbal tea was collected from local market and were authenticated from Piramal Life Sciences. The formulation will be beneficial for every individual to develop immune system.

The materials were shade dried and reduced to coarse powder. The powder was passed through appropriate sieve and was weighed accurately. The F2A, F2B and F2C were formulated as per the table no. 1.

Approximately 2g powder was packed in a single tea bag.



★ Simple Formulation of herbal tea

Hibiscus tea is caffeine free herbal tea from a special type of hibiscus, called Hibiscus Sabdarrifa specifically, the tea is made out of the dried fruit part of Roselle, called calyx. It is in red color and tastes like berries and ingredient as dry ginger powder and preparation of Hibiscus Tea

First, collect the hibiscus fruits/flowers and Zinger wash them clean, and air dry or dry them in an oven at 70 degree C for 3 days.

- b. Peel off the calyx and store them in air-tight containers.
- c. To make tea, simply take 2 grams of the dried calyx, and 2 gram of dried zinger powder crash them into small pieces using a wooden roller.
- d. Put them in a tea bag or a net, bring out your favorite mug, add 8 oz of boiling water, keep it for 2-4 minutes, add sugar if desired or add other flavours of your choice such as few drops of lemon juice.

Ingradients	quantity	Activity
Hibiscus powder	2gm	Antispasmodic
Zinger powder	2 gm	Antioxidant/Antispasmodic
Water	In ml	—
Sugar	In gm	Flavour



Evaluation of herbal tea

Colour	Deep CRIMSON
Odour	Aroma
Taste	Tart and Sweet

★ Health benefits of hibiscus tea

There are many potential benefits of hibiscus tea that could help with a number of health issues and support your overall well being. If you have pre-existing health conditions or if you're pregnant, always talk to your doctor before consuming hibiscus tea in large quantities.

• High in antioxidants

Hibiscus tea is naturally caffeine-free and packed with antioxidants. Antioxidants are molecules that help fight free radicals, which cause oxidative damage to cells and exacerbate the body's aging process. Consuming antioxidants can prevent diseases and illnesses, and can reduce inflammation in the body and on the skin (including wrinkling). Studies using hibiscus extract have shown an increase in antioxidant enzymes and properties in rats, though more research is required in humans.

• Supports the immune system

Ideal in supporting overall health, hibiscus tea contains vitamin C, another antioxidant that keeps us healthy, and iron, which helps balance the red blood cells in our bodies. Vitamin C also aids the absorption of iron into our blood. Some research also shows that hibiscus extract could support kidney and liver functions.

• Decreases high blood sugar

Drinking hibiscus tea may decrease blood sugar levels, but it depends on whether you're diabetic or not, and what diabetic medications are being taken. Again, more research is needed in humans before claims can be made.

• Helps with high blood pressure

Some studies suggest that drinking hibiscus tea every day for two to six weeks lowers blood pressure by a small amount, and may be equally effective or more effective in individuals who are already taking certain prescription drugs for high blood pressure. Because some evidence shows hibiscus tea can work as a natural diuretic by pulling salt and water out of the body, it can therefore presumably reduce blood pressure.

• May lower levels of cholesterol

It's worth noting that some early research illustrates that drinking hibiscus tea can lower cholesterol levels and other blood fats in people who have metabolic disorders, including diabetes. Other studies show that if cholesterol levels are already high, hibiscus tea doesn't

necessarily help lower cholesterol to a normal level.

- **May aid in weight loss**

Some evidence shows that hibiscus tea is associated with weight loss. In one study, participants who took hibiscus extract after 12 weeks demonstrated a reduction in body weight, fat and overall BMI. Plus, drinking a refreshing and flavorful herbal tea after meals can help kick cravings by changing the taste in your mouth. Skip the sugar or add only a small amount for taste.

- ★ **Side Effect of tea**

When eaten by mouth: Foods often include hibiscus sabdariffa. If used at medicinal doses, it might be harmless. It is safe to consume up to 720 milliliters of Hibiscus sabdariffa tea every day for a maximum of six weeks. Although they are rare, side effects could include constipation, gas, and upset stomach.

Pregnancy: It may not be safe to take Hibiscus sabdariffa during pregnancy. It may have effects that could end a pregnancy or accelerate the menstrual cycle. Remain cautious and refrain from using.

Breastfeeding: It may not be safe to use Hibiscus sabdariffa at this time. It could have negative consequences for the baby. Remain cautious and refrain from using.

Children: Hibiscus sabdariffa may be safe for use in teenagers aged 12 to 18 when taken orally three times a day for a maximum of four weeks at a dose of two grams. To determine whether it is safe for kids less than twelve, there isn't enough trustworthy information available.

During and after surgery, Hibiscus sabdariffa may have an impact on blood sugar levels, making blood sugar control challenging. Give up using Hibiscus sabdariffa at least two weeks before to the planned operation.

CONCLUSION

Dysmenorrhoea is a health problem that affects the daily activities and quality of life of many women. Establishing the accurate prevalence of dysmenorrhoea is compromised due to the variety of diagnostic criteria. Primary dysmenorrhoea is caused by excessive levels of prostaglandins, with subsequent contraction of the uterus during menstruation, while

secondary dysmenorrhoea may be caused by a number of underlying pathologic conditions. Women often seek non-prescription medication as first-line treatment, therefore pharmacists should be knowledgeable and actively involved in providing counselling about the management of dysmenorrhoea.

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