“Exploring the Potential of Papaya ,Ginger and Pineapple: Management of Menstruation regularity through Natural Means”

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Abstract -Menstruation is regular uterine bleeding that occurs at more or less regular monthly periods during a woman’s active reproductive life. The menstrual cycle and the accompanying physical and mental symptoms can often have a negative impact on daily life and activities. Papaya is rich in vitamins A and C, which can help regulate the menstrual cycle and promote regularity. This can be especially helpful for women with irregular periods.[1]Menstruation is regular uterine bleeding that occurs at more or less regular monthly periods during a woman’s active reproductive life. The menstrual cycle and the accompanying physical and mental symptoms can often have a negative impact on daily life and activities. Papaya is rich in vitamins A and C, which can help regulate the menstrual cycle and promote regularity. This can be especially helpful for women with irregular periods.[1]

This study provides a practical review and experimental investigation of the effects of herbal jelly made from pineapple, banana, and papaya on menstrual control. Infertility affects a large proportion of the female population and requires effective and effective treatment. Through an extensive literature review, we explore the historical and cultural significance of traditional medicinal seeds and their purported effects on ritual health. We then conducted a study of Female participants to evaluate the effects of consumption of green leafy vegetables such as pineapple, banana and papaya on menstruation and related symptoms. The results of this study reveal a promising approach to menstrual control and indicate that further research is needed to identify faster and more effective dosing methods. This research makes a significant contribution to the knowledge of natural treatments for menstrual health and confirms the ability of these Seeds to solve menstrual problems. (2)

Keywords -Menstrual regulation , herbal remedies, pineapple,Ginger, papaya, herbal jelly,systemic review,Experimental study , Menstrual health, women’s health.

Introduction

Menstruation in a woman is considered irregular if it lasts less than 21 days or more than 35 days and is accompanied by less or heavier bleeding. Menstruation

rates vary from country to country. Irregular periods can occur due to changes in the body's hormone levels of estrogen and progesterone, which disrupts the normal menstrual pattern. Menstrual disorders have been found to be associated with various diseases and medical conditions.

A significant association between Irregular menstruation and the risk of pregnancyrelated hypertensive disorders and an increased risk of adverse birth and perinatal outcomes has been confirmed. Therefore, irregular menstruation is considered an important indicator of women's health. Physical, psychological, social, psychological and reproductive problems are often associated with menstrual disorders.[3]

Menstruation is the occasional excretion of progestins from the endometrium along with blood loss. (4)Menstruation is regular uterine bleeding that occurs at more or less regular monthly periods during a woman's active reproductive life. Menstrual cycles and the associated physical and mental symptoms can often have a negative impact on daily life and activities.(5)Menstrual cycle disorders are caused by an imbalance of FSH or LH, so estrogen and progesterone levels are not normal. In general, the most common menstrual disorders are irregular or irregular menstrual cycles and excessive or abnormal bleeding, including complications such as abdominal pain, dizziness, nausea or vomiting. Menstrual cycle disorders usually occur in young people and are caused by many factors, including psychological, hormonal disorders, genetics, organic disorders, and nutritional status (6).

Papaya

Papaya (Carica papaya linn) is known worldwide for its unique nutritional and medicinal properties. Since ancient times, the entire papaya plant, including its leaves, seeds, ripe and unripe fruits and juice, has been used as traditional medicine. The fruits have a large oval shape, a yellow-green skin and yellow flesh. Today, papaya is considered a nutritious fruit due to its many medicinal properties. The main medicinal properties of Papaya

Are antifertile, uterotonic, diuretic, antihypertensive, hypolipidemic, anthelmintic, wound healing, antifungal, antibacterial, antitumor and anti-inflammatory activities.Phytochemicals, whole plant enzymes (papain), carotenoids, alkaloids, monoterpenoids, flavonoids, minerals and vitamins. (7)

Fig.1 Papaya

Ginger

Ginger (Zingiber officinale Roscoe), a member of the Zingiberaceae family and Zingiber genus, has been widely used as both a spice and an herbal remedy for various ailments . The root of ginger is utilized to alleviate and treat several common conditions such as headaches, colds, nausea, and vomiting. Ginger contains numerous bioactive compounds including phenolic and terpene compounds. It has a rich history of traditional use and is composed of constituents such as gingerol, gingerdiol, gingerdione, beta-carotene, capsaicin, caffeic acid, and curcumin. Studies have demonstrated that ginger inhibits cyclooxygenase (COX) and lipooxygenase, leading to reduced synthesis of leukotrienes and prostaglandins. Therefore, ginger is employed as an anti-inflammatory agent through its inhibition of prostaglandin synthesis.

Fig.2 Ginger

Pineapple

Pineapple (Ananas comosus, family Bromeliaceae) is a tropical fruit that grows in tropical and subtropical regions. It is widely grown in India and is currently the second largest producer of the fruit after Brazil. Pineapple is grown mainly for its seeds, which are used fresh or roasted. The fruit is a good source of manganese and contains plenty of vitamins C and B1. Pineapple contains an enzyme called bromelain, which can reduce appetite. Some causes of irregular menstrual periods include inflammation. Some people believe that eating pineapple can help regulate menstruation, but research shows there is no link between the two.

Fig.3 Pineapple

Extraction of papaya (beta carotene)

Soxhlet Extraction

B-Carotene and Add up to Phenolics were extricated from dried papaya glue powder by Soxhlet (dissolvable) extraction. Copy, precisely weighed tests of dried papaya powder (approx. 5 g) were put in cellulose extraction thimbles. The thimbles were set within the Soxhlet extraction unit and extricated for 20 hours with approximately 150 ml of solvents.

Ethyl acetic acid derivation, petroleum ether, n-Hexane solvents were utilized.

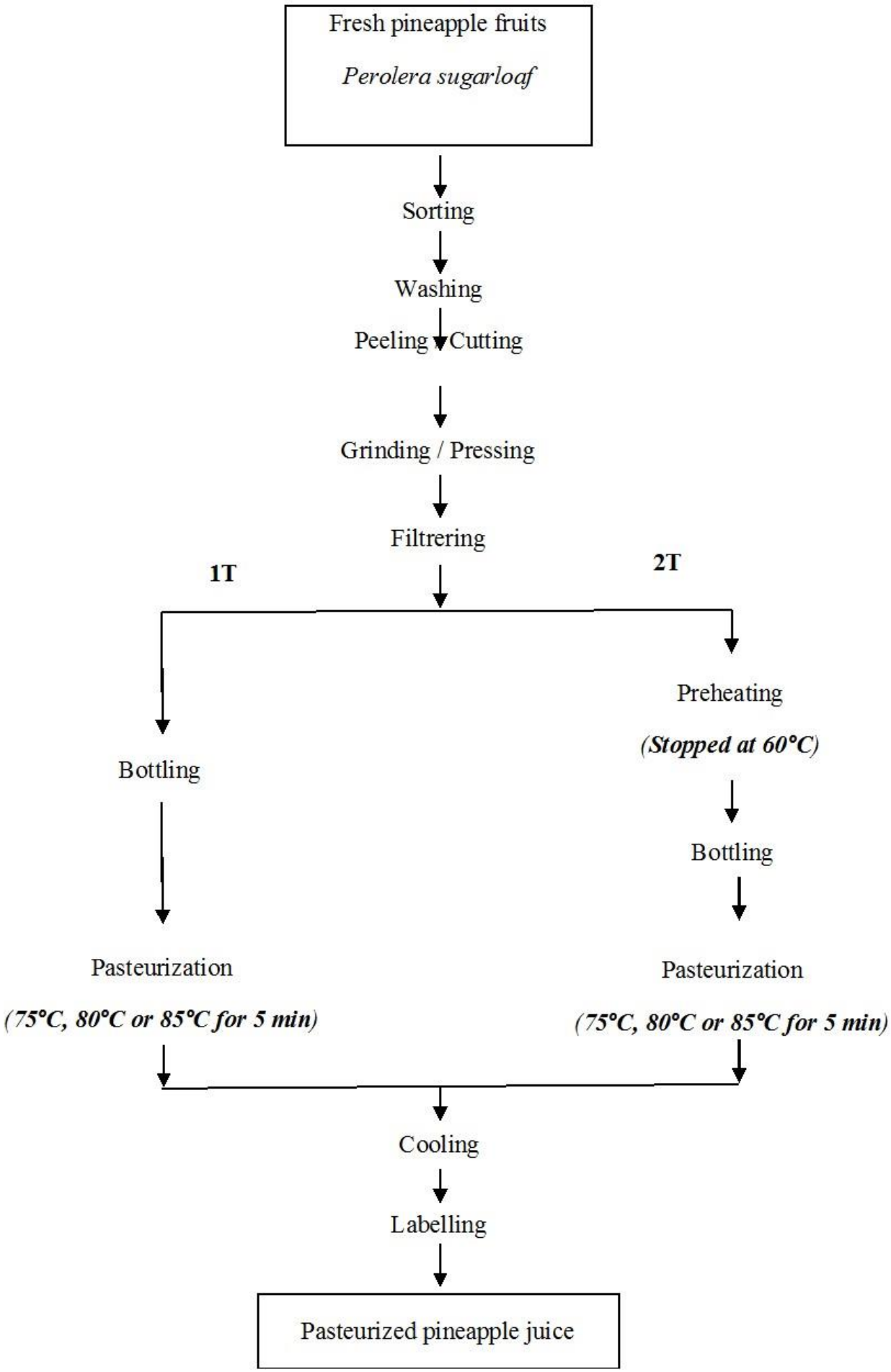
Ginger extraction – The traditional method of removing the peels using straining or Soxhlet has resulted in increased gingerol production but is unfortunately time consuming and time consuming (Shukla, Das, and Goud, 2020). Extraction of active ingredients from ginger and SE has been investigated in many reports. For example, the conventional SE method was used for the extraction of 6-, 8- and 10-gingerol and 6-shogaol from ginger, and the best solution for gingerol extraction is known as 95% ethanol with a yield of 7.806 mg/da . G. dry weight. Similarly, the degradation product of gingerol, i.e., 6-shogaol, was extracted using 95% ethanol at different temperatures, i.e., room temperature, 60°C, or 80°C, to determine the optimum

extraction temperature. The maximum yield of 6-shogaol was reached at 80 °C, and the extraction of 6-shogaol was seven times higher than at room temperature. The yield was reported to be about 22 mg/g dry. Another study showed the importance of using

Water for ginger extract using water and bioethanol as treatment. Among different concentrations of ethanol–water solutions, 70% ethanol showed the best results in terms of gingerol recovery and yield, yielding 12.2, 2.1, and 4.1 mg/g of 6-, 8-, and 10-gingerol. A recent study optimized the extraction of bioactive compounds from ginger using a response method using Box-Behnken design for

Independent factors, including ethanol concentration (0-70%), extraction temperature (extraction time 50-70 °C). min also showed a significant effect on the amount of gingerol recovered, but the overall effect was highly dependent on the type of solvent used. Keosaeng et al. 8-&10-Shogaol have been used as insecticides against Spodoptera species. Larvae with an LD50 of 9.92 and 8.40 μg/larva after 24 and 48 hours. Extraction efficiencies (wt/wt) were found to be comparable to hexane, dichloromethane, ethyl acetate, and methanol at 1.2% to 2%, with hexane showing the best yield.

Pineapple juice


Fresh pineapple fruits
Perolera sugarloaf
Sorting
Washing
Peeling
Cutting
Grinding / Pressing
Filtrering
1T
2T
Bottling
Preheating
(Stopped at 60°C)
Bottling
Pasteurization
(75°C, 80°C or 85°C for 5 min)
Pasteurization
(75°C, 80°C or 85°C for 5 min)
Cooling
Labelling
Pasteurized pineapple juice

Ingredients	Quantity
Herbal extracts (ml)	10
Gelatin %1.5	3
Glycerine (ml)	2
Citric acid %	1
Propylene glycol	3
Sugar %	60
Colouring agent (ml)	0.5
Flavouring agent (ml)	1 ml
Distilled water	Q.S

Preparation of herbal jelly –

i. The jelly is prepared by heating with different amounts of polymers.

ii. Sugar soup is being prepared.

iii. A gelling agent is added to the sugar syrup with constant stirring and heating.

iv. When the gel formation is completely dissolved, stabilizer and solubilizer are added and mixed thoroughly and boiled for a few minutes.

v. The mixture was completely dissolved with constant stirring.

vi. Medicines (herbs) are then added and other attractants, colorants and flavors are added, allowing the jelly to settle and mix well.

vii. Final weight corrected for fresh water

viii. Finally, it is transferred to a mold and the mixture is cooled to room temperature to make jelly (15).

Evaluation parameter for Herbal jelly include

Oral jelly was rated for quality, odor and color.

1. Weight variation : This variable is based on the average weight of 10 jellies removed from the mold, weighed, and mixed individually in a beaker. 9 plus mineral salts that act as retarders, such as trisodium citrate. These retarders usually stop pregelation by raising the pH of the formula before acid is added. The lower the curing temperature and the longer the curing time as the retarder is more concentrated, helping the gel cure and pour.

2.pH determination: pH is determined by dispersing the jelly in distilled water (50%) and preparing a 1% solution with a digital pH meter, pH is determined. (17)

3. Content Reconciliation: This review is performed on each drug approval form. The jelly is crushed and mixed, extraction is carried out using a special medium and the amount of drug is calculated using analytical methods (18.19)

4. Viscosity: A Brookfield viscometer is used to measure viscosity and a new sample is used each time. Time (

Calculated as follows: Call reading factor + viscosity in the centipoise (20)

5. Diffusion: Diffusion is evaluated by placing jelly between two glasses and then placing it together with a 1000 g weight. The diffusion separation time of the two pieces is calculated (20)

Determined by a. $S = m \times L/T$

b. Here m = weight of the upper water

c. T = time required

d. L = length moving along the glass line

6. Stability studies: Stability studies are carried out in accordance with ICH standards and can be evaluated by storing the produced gel at room temperature for 90 days and analyzing the physical changes that occur. (21)

7. Collapse. Study: jelly was eluted in vitro using a USP paddle type 2 apparatus and 900 ml of phosphate buffer 6.8 as dissolution medium at 3 p.m. The temperature was maintained at 37°C plus or minus 0.5°C. At predetermined time points of 5, 10, 15, 20, 25, 30, 35, and 40 min, 5 ml of the sample was removed from the dissolution medium and replaced with a fresh one. Middle. Temperate. A UV indicator was used to determine the release mechanism and release studies were calculated using the kinetic model (22)

8. Syneresis: Syneresis is the shrinkage, storage and separation of water from the gel. It is especially noticeable in jellies where the lower part of the gelling agent is used. All jellies showed signs of syneresis at room temperature (25°C ± 5°C) and 8°C ± 1°C.

Conclusion

The potential of using papaya, ginger, and pineapple for managing menstruation regularity through natural means is promising. These fruits possess certain properties that may aid in regulating menstrual cycles:

Papaya: Contains enzymes like papain which may help in regulating periods by promoting the production of estrogen, thereby supporting a balanced menstrual cycle.

Ginger: Known for its anti-inflammatory properties, ginger can help alleviate menstrual cramps and reduce discomfort associated with irregular periods.

Pineapple: Contains bromelain, an enzyme with anti-inflammatory properties that may help in regulating periods and reducing bloating commonly experienced during menstruation.

Incorporating these fruits into a balanced diet can potentially contribute to better menstrual health. However, it's essential to consult with healthcare professionals for personalized advice and to address any underlying health concerns related to irregular menstruation. While natural remedies can be beneficial, they should complement comprehensive menstrual health management approaches tailored to individual needs.

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