ISSN: 2322 - 0902 (P)
ISSN: 2322 - 0910 (O)

International Journal of Ayurveda and Pharma Research

Research Article

DURIO ZIBETHINUS MOTHER TINCTURE: A NOVEL ETHNOMEDICINAL DRUG BEYOND HPI WITH FERTILITY-ENHANCING PROPERTIES AND PHYTOCHEMICAL CHARACTERIZATION

Shaalini S
Sarada Krishna Homoeopathic Medical College, Kulasekharam, Kanyakumari, Tamil Nadu, India.

Article info

Article History:
Received: 26-09-2025
Accepted: 22-10-2025
Published: 15-11-2025

KEYWORDS:
Durio zibethinus, Mother tincture, Fertility enhancement, Tryptophan, Phytochemical analysis, Ethnomedicine, Bioactive compounds.

ABSTRACT

Infertility is a global health concern affecting millions of couples, with increasing interest in natural remedies that support reproductive health. *Durio zibethinus* (durian), a tropical fruit used in traditional Southeast Asian medicine, is believed to enhance fertility due to its rich content of bioactive compounds such as tryptophan. **Aim:** To assess the fertility-enhancing potential of *Durio zibethinus* by preparing a mother tincture and performing preliminary phytochemical analysis, including qualitative identification of tryptophan. **Materials and Methods:** Fresh *Durio zibethinus* fruit was collected from the Nilgiris and processed using the Homoeopathic method of maceration into prepare a mother tincture. Preliminary phytochemical screening was performed to detect major bioactive compounds, further the presence of tryptophan was analyzed using the Hopkins-Cole test, a qualitative biochemical method. **Results:** Phytochemical analysis revealed the presence of tannins, phenols, saponins, terpenoids, glycosides, steroids, carbohydrates, and proteins, while alkaloids and flavonoids were absent. The Hopkins-Cole test showed a characteristic purple ring at the junction of the sample and acid layer, confirming the presence of tryptophan in the tincture. Tryptophan is known to support serotonin and melatonin synthesis, which influence reproductive hormones and fertility. **Conclusion:** The detection of tryptophan and other bioactive compounds in *Durio zibethinus* mother tincture provides a scientific basis for its traditional use as a fertility enhancer. This preliminary study provides a scientific basis for further pharmacological research and clinical validation, and opens the possibility of developing a Novel Homoeopathic remedy for infertility-related conditions.

INTRODUCTION

Infertility

Infertility is defined as inability to conceive after 12 or more months of unprotected intercourse. The most common identifiable female factors in developed countries accounted for 81% of female infertility. These factors included ovulatory disorders (25%), endometriosis (15%), pelvic adhesions (11%), tubal blockage (11%), other tubal abnormalities (11%) and hyperprolactinemia (7%). Male infertility accounts for about 40-50% of all infertility cases, sperm production issues (60-70%), obstructions (5-10%), hormonal imbalances (10-15%), varicocele (15-20%)[1].

Access this article online

Quick Response Code

https://doi.org/10.47070/ijapr.v13i10.3865

Durio zibethinus

Durian *(Durio zibethinus)* is a tropical fruit, belonging to the family of Malvaceae, widely known for its distinctive odor, rich nutritional content, and medicinal properties. It has been traditionally used in various cultures for its purported health benefits, including enhancing reproductive health. Several bioactive compounds found in durian, such as flavonoids, tryptophan, alkaloids, and vitamins, are believed to have potential effects on fertility[2]. Durian fruit contains a high amount of sugar, vitamin C, potassium, and the serotonergic amino acid tryptophan, and is a good source of carbohydrates, proteins, and fat. Based on this, Durian can be useful in curing PCOD like conditions in females and in case of male it can cure conditions like erectile dysfunction, alteration in motility of the sperm [3].

Health Benefits of Durian

1. Increases immunity
2. Durian fruits contain high amounts of folate or folic acid. Folate is required for the production of hemoglobin
3. Bone Health. Durian contains a number of trace metals including Potassium and calcium
4. Improves Sleep & Depression.
5. Durian fruit contains good amount of antioxidants so it has anticancer property
6. Increases and encourages fertility as it can act as a herbal medicine. Eating durian in controlled and recommended quantities in case of infertility [3].

Among the key amino acids, tryptophan has its attention due to its role in the synthesis of serotonin, a neurotransmitter that regulates mood, appetite, and reproductive health. Tryptophan is also a precursor to melatonin, a hormone involved in regulating the reproductive cycle. Given these roles, tryptophan could potentially enhance fertility, particularly by improving sperm quality, motility, and reproductive hormone balance [4, 5].

Fig 1: Sample – *Durio zibethinus*

Tryptophan

Tryptophan (Trp) is an amino acid and an essential component of the human diet. It plays a crucial role in many metabolic functions. It plays a major role in synthesis of serotonin (5-HT) and melatonin[6]. Trp metabolism plays crucial roles in regulating inflammation, immunity, and neuronal function. The primary metabolic pathways for Trp include the synthesis of serotonin and the KP. Serotonin significantly influences the central nervous system and plays a critical role in regulating intestinal motility, emesis, vasoconstriction, platelet aggregation, and wound healing. It also serves as a precursor to melatonin, which regulates sleep and circadian rhythms in diurnal animals. As humans cannot synthesize Trp, it must be obtained from dietary sources such as turkey, chicken, eggs, cheese, fish, and plant-based proteins like pumpkin seeds, soy products, and tofu [7,8]. Durian naturally having the presence of tryptophan can aid in regulating reproductive health. The test for presence of tryptophan is done by Hopkins Cole Test by the confirmation of presence of violet ring in the junction [9].

Rationale of the Study

Infertility remains a significant medical and emotional challenge in today's fast-paced world, affecting nearly one in six couples globally. While modern medicine has made great strides in diagnosing and managing reproductive disorders, there is growing interest in natural, plant-based alternatives that are both affordable and free of harsh side effects. In traditional Southeast Asian medicine, *Durio zibethinus* (durian) has long been consumed as a fertility-boosting fruit, yet scientific validation of this ethnomedicinal claim remains limited and underexplored.

Durian is rich in tryptophan, a precursor to serotonin and melatonin- two molecules known to influence reproductive hormones, sleep cycles, and stress regulation, all of which are critical for successful conception. Furthermore, the fruit contains antioxidants, vitamins, and minerals like zinc and vitamin C, which are known to improve sperm quality, oocyte health, and overall reproductive function.

The author previously conducted an ethnomedicinal field study under the Short-Term Studentship (STSH)– CCRH, Ministry of AYUSH, and Government of India, which documented *Durio zibethinus* as a fertility-enhancing plant among the tribal communities of the Nilgiris. Building upon this finding, the present study represents the next phase of research- focusing on the preparation of a homeopathic mother tincture of *Durio zibethinus* and the phytochemical and biochemical identification of its bioactive constituents, with special emphasis on tryptophan**,** a precursor of serotonin and melatonin known to influence reproductive hormones and overall fertility. By integrating ethnomedicinal knowledge with experimental validation, this study aims to provide a scientific foundation for the potential inclusion of *Durio zibethinus* as a new entry beyond the Homoeopathic Pharmacopoeia of India (HPI) and to support further pharmacological and reproductive studies [10].

AIM AND OBJECTIVE

To assess the fertility-enhancing potential of *Durio zibethinus* by preparing a mother tincture and identifying its key bioactive compounds, with special focus on tryptophan.

Primary Objective: To prepare the *Durio Zibethinus* mother tincture by the process of maceration.

Secondary Objective

1. To perform preliminary phytochemical screening of the mother tincture to detect major bioactive constituents.

2. To qualitatively identify the presence of tryptophan using the Hopkins-Cole test.
3. To correlate the presence of bioactive compounds, particularly tryptophan, with potential fertility-enhancing properties.

Literature Review

Infertility

McLaren 2012 emphasizes a cost-effective and personalized approach, integrating emerging trends such as minimally invasive techniques and molecular diagnostics to improve outcomes. Infertility affects 10–15% of couples globally and requires a systematic evaluation approach. Female factors include ovulatory disorders (25%), tubal or uterine abnormalities, and age-related decline, while male factors contribute to 30–40% of cases, often due to abnormal semen parameters. Unexplained infertility accounts for 10–15% [11].

Infertility with Complementary and Alternative Medicine:

Clark NA *et al.,* Complementary and Alternative Medicine in Infertility (2013) T review examines CAM treatments for infertility. It highlights: Acupuncture: Shows promise in improving pregnancy rates, particularly with IVF. Herbal Medicine: Inconsistent evidence, with mixed results across studies. Mind-Body Techniques: Stress reduction methods may benefit emotional health, but their direct impact on fertility is unclear. The review calls for more high-quality, standardized research to confirm CAM's role in infertility treatment[12].

Infertility and Homoeopathy

Rajachandrasekar B *et al.,* 2022 in his case series tell about the usefulness of the usefulness of homoeopathic medicines for infertility. This case series explores the potential of homeopathic medicines in treating infertility. The study reports successful outcomes in several cases where homeopathy was used to address hormonal imbalances, ovulatory dysfunction, and unexplained infertility. The authors suggest that homeopathy may offer a personalized and holistic approach to infertility, though they emphasize the need for larger, controlled studies to validate these findings [13].

Durio zibethinus and its uses

The genus Durio, best known for the durian fruit, has significant ethnomedicinal importance. The review by Shamin-Shazwan*et al.,* (2021) provides an overview of its traditional and potential medicinal uses. Various parts of Durio plants, including fruits, leaves, and roots, are used in traditional medicine across Southeast Asia to treat conditions such as fever, jaundice, wounds, fertility problems and skin diseases. The genus is rich in bioactive compounds like flavonoids, polyphenols, and volatile sulfur compounds, contributing to its therapeutic properties. The authors highlight the need for further phytochemical and pharmacological research to validate traditional claims and explore the genus' potential for modern drug development [14].

Phytochemistry of *Durio zibethinus*

The study by Saminathan *et al.,* (2020) examines the phytochemical content, antioxidant, and anticancer properties of durian (*Durio zibethinus Murr.)* fruit extract. It identifies key bioactive compounds, including flavonoids, phenolics, alkaloids, and tannins. The extract shows significant antioxidant activity through DPPH and ABTS assays and exhibits dose-dependent anticancer effects on MCF-7 cells. These findings suggest Durian's potential as a functional food and natural therapeutic agent, although further studies are needed to confirm its efficacy [15].

Durian for PCOS

The article by Ansari RM (2016) explores the potential use of *Durio zibethinus* (durian) fruit as an adjunct treatment for infertility in women with polycystic ovarian syndrome (PCOS). The review suggests that durian's bioactive compounds, such as antioxidants, flavonoids, and vitamins, may help improve hormonal balance, regulate menstrual cycles, and enhance ovarian function. It highlights the fruit's ability to address common PCOS symptoms like insulin resistance and oxidative stress. While promising, the review calls for more clinical studies to substantiate durian's effectiveness and safety as a complementary therapy for PCOS-related infertility [2].

Durian with aphrodisiac activity

The study by Venkatesh P, *et al.,* (2010) investigates the aphrodisiac potential of *Durio zibethinus* (durian) fruit. The researchers isolated various bioactive compounds from the fruit and evaluated their effects on sexual health. The results showed that durian fruit exhibited significant aphrodisiac activity, likely due to its high content of flavonoids, alkaloids, and other bioactive substances. The study suggests that durian may enhance sexual function and improve libido, supporting its traditional use in treating sexual dysfunction [16].

Phytochemical chemical analysis of medicinal plants

The article by Yadav RN *et al.,* (2011) provides a comprehensive review of the phytochemical analysis of several medicinal plants. It discusses the identification of key bioactive compounds, including alkaloids, flavonoids, terpenoids, phenolics, and saponins, which contribute to the medicinal properties of these plants. The review emphasizes the importance of these compounds in treating various ailments such as infections, inflammation, and chronic diseases. The authors highlight the significance of phytochemical

screening in drug development and stress the need for further research to fully explore the therapeutic potential of these medicinal plants. So, this method can be used to get significant information on the curative properties of medicinal plants [17].

New drug source in Homoeopathy

The article by Chattopadhyay R, Gupta S, Chakraborty S, Saha S, and Bhar K (2022) focuses on the preparation and standardization of mother tincture from *Strychnos potatorum* (commonly known as the clearing nut), a new drug source in homeopathy. The study emphasizes the medicinal potential of *S. potatorum*, traditionally used for its detoxifying and purifying properties. The researchers discuss the process of preparing the mother tincture, its chemical constituents, and the methods used to standardize the extract to ensure consistency and potency. By this even Durian can be made into a tincture and can be helpful to know its further therapeutic efficacy [18].

MATERIALS AND METHODOLOGY

Materials

1. Fresh *Durio zibethinus* fruit
2. Tincture preparation- Ethyl alcohol, glass Jar, weighing scale, measuring cylinder, muslin cloth, funnel.
3. Hopkins Cole Test - Glyoxylic acid, conc. sulphuric acid, distilled water, test tube, dropper.

Location of Study

Durio zibethinus fruit sample was collected from Nilgiris. Nearly 4 to 5 fresh fruits were collected. The research was conducted in a laboratory environment equipped with instruments needed for mother tincture preparation and chemical analysis.

Methodology

1. Collection and Preparation of Samples

Fresh *Durio zibethinus* fruit without any microbial infection and free of pesticide was collected from Nilgiris. The outer shell was washed with water. The fruit was chopped into smaller pieces to increase the surface area for the extraction of medicinal compounds.

2. Mother Tincture preparation

The tincture preparation was prepared as per the standard protocol of homoeopathic mother tincture preparation. The method used was maceration because *Durio zibethinus* has a hard, gummy and mucilaginous nature and standard preparation methods was followed [19].

Fig 2 and Fig 3: Extraction of pulp

Fig 4: Pulp in maceration jar

Fig 5: Adding ethanol to the sample

Fig 6: Sample after adding alcohol

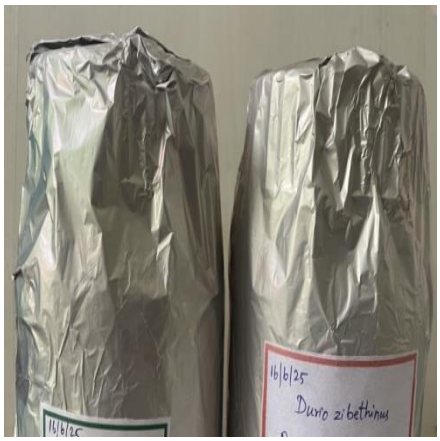

Fig 7: Sealed jar placed for 21 days

Fig 8: and Fig 9: Collecting the supernatant fluid after 21 days

Fig 10: and Fig 11: Extracted *Durio zibethinus* mother tincture

Phytochemical Qualitative Analysis

The *Durio zibethinus* mother tincture was subjected to preliminary qualitative phytochemical screening to detect major classes of bioactive compounds using standard procedures.

1. **Alkaloids (Mayer's Test)**

   The extract was evaporated in a test tube. To the residue, dilute HCl was added, shaken, and filtered. Mayer's reagent was added to 2–3ml of filtrate. Formation of a yellow precipitate indicates the presence of alkaloids [20].

2. **Flavonoids (Alkaline Reagent Test)**

   2ml of 2% NaOH was added to the extract. Formation of a concentrated yellow color indicates the presence of flavonoids [21].

3. **Tannins (Braymer's Test)**

   2ml of extract was mixed with 5% ferric chloride solution. Blue, green, or violet coloration indicates the presence of tannins [22].

4. **Phenols (Ferric Chloride Test)**

   The extract was diluted with 5ml distilled water, and a few drops of neutral 5% ferric chloride were added. Dark green coloration indicates phenolic compounds [23].

5. **Saponins (Foam Test)**

The extract was shaken vigorously with water. Persistent foam indicates the presence of saponins[20].

6. **Terpenoids (Chloroform–Sulfuric Acid Test)**

2ml chloroform and a few drops of concentrated H2SO4 were added to the test solution. Formation of a reddish-brown interface indicates terpenoids [24].

7. **Glycosides (Keller-Killiani Test)**

2ml extract was treated with glacial acetic acid, one drop of 5% $FeCl_3$, and concentrated H_2SO_4. Reddish-brown color at the junction and bluish-green upper layer indicates glycosides [20].

8. **Steroids (Salkowski Test)**

2ml extract was mixed with 2ml chloroform and 2ml concentrated H_2SO_4. A red chloroform layer and greenish-yellow fluorescence in the acid layer indicate steroids [25].

9. **Proteins (Ninhydrin Test)**

1ml of test solution was mixed with a few drops of Ninhydrin reagent and heated for 2 minutes. Purple color indicates the presence of proteins [26].

10. **Carbohydrates (Fehling's Test)**

1ml each of Fehling's solution A and B were mixed with 2ml of extract and boiled. Formation of brick-red precipitate indicates carbohydrates [27].

Interpretation was noted as Presence (+) or absence (−) of each phytochemical was recorded as per standard observations.

Qualitative Analysis of Tryptophan

Procedure: Hopkins-Cole test

1ml of prepared mother tincture was taken and added with 1ml of acetic acid glyoxylic acid reagent, in a test tube and mixed. Then conc. H_2SO_4 was added along the side of the test tube, keeping the tube in an inclined position [28].

OBSERVATION

1. Phytochemical Qualitative Analysis

Phytochemical constituent	Results
Alkaloid	–
Flavonoid	–
Tannin	+
Phenol	+
Saponin	+
Terpenoids	+
Glycoside	+
Steroids	+
Carbohydrate	+
Protein	+

This result shows that *Durio zibethinus* mother tincture shows favorable results of presence of all phytochemical constituents except for alkaloid and flavonoid.

Fig 12: Results of Phytochemical Analysis

2. Qualitative Analysis of Tryptophan

The prepared tincture was subjected to Hopkins - Cole Test. The test showed purple - violet rings appeared at the junction of the tincture and the conc. sulphuric acid. The formation of the ring confirms the presence of tryptophan.

Fig 13: Hopkins Cole Test

RESULT AND INTERPRETATION

Preliminary phytochemical screening of the *Durio zibethinus* mother tincture revealed the presence of tannins, phenols, saponins, terpenoids, glycosides, steroids, carbohydrates, and proteins**.** Alkaloids and flavonoids were not detected under the applied qualitative tests. The Hopkins–Cole test gave a characteristic purple ring confirming the presence of tryptophan in the tincture. This shows that *Durio zibethinus* may enhance reproductive health through neuroendocrine influence.

The phytochemical profile indicates a broad spectrum of bioactive constituents in the *Durio zibethinus* mother tincture. The confirmed presence of tryptophan, an essential amino acid and precursor for serotonin and melatonin, provides a plausible biochemical basis for reported fertility-related effects and warrants further pharmacological investigation. Other detected classes (phenols, saponins, terpenoids, glycosides, steroids) are commonly associated with

diverse biological activities and may contribute synergistically to the observed ethnomedicinal activity.

DISCUSSION

The present study was conducted to investigate the presence of biologically active constituents in *Durio zibethinus* (durian) with a focus on its fertility-enhancing potential. Specifically, the study was aimed to detect the presence of tryptophan, an essential amino acid known to influence reproductive hormones, using the Hopkins-Cole test. The positive outcome of the Hopkins-Cole test, as evidenced by the formation of a distinct purple ring, confirmed the presence of tryptophan in the plant extract.

In the context of ethnomedicinal knowledge, durian has long been used by various tribal and Southeast Asian communities as a fertility booster and aphrodisiac. However, there exists a paucity of biochemical evidence to support these traditional claims. This study attempts to fill that gap by providing a biochemical validation of the traditional use of durian in enhancing reproductive health.

These findings can also be useful to prepare Homoeopathic dilution which can play a vital role in treating infertility after further research and proving. Despite the promising results, this study has certain limitations, including the absence of quantitative data and the lack of correlation with clinical or animal model outcomes. Future research should aim to isolate the active constituents, validate their pharmacological activity, and explore potential synergistic effects with other herbal or homeopathic formulations.

Phytochemical profile *of Durio zibethinus* mother tincture and its implications

The qualitative phytochemical screening of *Durio zibethinus* mother tincture revealed the presence of tannins, phenols, saponins, terpenoids, glycosides, steroids, carbohydrates, and proteins, whereas alkaloids and flavonoids were absent. The presence of these major secondary metabolites suggests that the tincture possesses significant pharmacological potential. Phenolic compounds and tannins are known for their strong antioxidant and free radical-scavenging properties, which play a vital role in protecting reproductive tissues from oxidative stress-a key factor in infertility. Saponins have been reported to influence spermatogenesis and enhance reproductive hormone secretion, while terpenoids and steroids are associated with hormone modulation and gonadal function, supporting fertility-enhancing effects. The presence of glycosides may contribute to energy metabolism and cellular protection, whereas carbohydrates and proteins indicate that the extract retains essential macromolecules involved in enzymatic and metabolic processes.

The absence of alkaloids and flavonoids suggests that the fertility-enhancing potential of *Durio zibethinus* is likely attributed to non-alkaloidal compounds such as phenolics, steroids, and saponins rather than flavonoid-mediated antioxidant mechanisms. Overall, the phytochemical profile corroborates the ethnomedicinal use of *Durio zibethinus* as a fertility-promoting agent, providing a biochemical foundation for its potential inclusion as a novel entry beyond the Homoeopathic Pharmacopoeia of India [29,30,31,32].

From empirical use to evidence

The study by Jassim et al. demonstrated improved semen parameters and ICSI outcomes in infertile males following durian supplementation. This study not only confirms the fertility-enhancing potential of *Durio zibethinus* but also identifies the presence of tryptophan, an essential amino acid known to support sperm function, hormone regulation, and antioxidant defense. This biochemical finding provides a possible mechanistic explanation for the reproductive benefits observed and adds molecular depth to the empirical observations reported by Jassim et al [3].

Durian for PCOS

The article by Ansari RM (2016) explores the potential use of *Durio zibethinus* (durian) fruit as an adjunct treatment for infertility in women with polycystic ovarian syndrome (PCOS). The review suggests that durian's bioactive compounds, such as antioxidants, flavonoids, and vitamins, may help improve hormonal balance, regulate menstrual cycles, and enhance ovarian function. It highlights the fruit's ability to address common PCOS symptoms like insulin resistance and oxidative stress. This study, on the other hand, focuses on the highlights the presence of tryptophan in Durian, a key amino acid involved in sperm health, hormonal balance, and antioxidant defense. This biochemical insight adds a new dimension to the understanding of durian's reproductive potential [2].

Antimicrobial property of Durian

Sah et al. (IJPSR) conducted an investigation into durian's biological effects, reportedly emphasizing antimicrobial and antifungal activity, and suggested its adjunctive potential in treating PCOS-related female infertility and infections like candidiasis. This also shows the presence of tryptophan which is a serotoninergic amino acid responsible for treating infertility.

In contrast, this study focuses on assessing the tryptophan presence in Homoeopathic mother tincture which can be used for discovering a new drug to the system of Homoeopathy [6].

New mother tincture preparation

Chattopadhyay et al. (2022) focused on the preparation and standardization of a mother tincture from *Strychnos potatorum*, aiming to introduce a new drug source in homeopathy. Their study emphasized pharmacognostic evaluation, physicochemical parameters, and standardization protocols to ensure quality and reproducibility of the tincture. In contrast, this study on *Durio zibethinus* not only follows a similar tincture preparation approach but also includes phytochemical analysis, specifically identifying the presence of tryptophan, a key amino acid linked to reproductive health. This contributes to expanding the homeopathic materia medica, to bring more therapeutic drugs for the disease [16].

Limitations

The present study was limited to a preliminary qualitative phytochemical screening and the detection of tryptophan in the *Durio zibethinus* mother tincture. Quantitative estimations and instrumental analyses such as HPLC or LC–MS were not performed to confirm or measure the concentration of bioactive compounds. The tincture preparation was carried out using a single batch without replication, which may not reflect variations due to environmental or extraction factors. Additionally, no pharmacological or toxicity evaluations were conducted to validate the safety or fertility-enhancing potential of the tincture. Hence, the findings should be interpreted as an initial step toward exploring the therapeutic prospects of *Durio zibethinus* rather than conclusive evidence of its pharmacological efficacy.

CONCLUSION

The present study investigated the potential fertility-enhancing effects of *Durio zibethinus* (durian) by evaluating tryptophan levels via the Hopkins-Cole test, alongside preliminary phytochemical screening. The presence of bioactive compounds such as tannins, phenols, saponins, terpenoids, glycosides, steroids, carbohydrates, and proteins suggest multiple mechanisms- neuromodulatory, hormonal, and antioxidant- that may contribute to reproductive health. Elevated tryptophan levels further support its possible role in modulating reproductive hormones and fertility. This research bridges ethnomedicine and modern science by providing initial biochemical and phytochemical validation of *Durio zibethinus*'s traditional fertility-enhancing use, encouraging further exploration of plant-based interventions in reproductive health.

From a homeopathic perspective, these findings open pathways for the preparation of a mother tincture or potentized form of *Durio zibethinus*. Subsequent steps including drug proving and clinical evaluation could enable its inclusion in the Homeopathic Materia Medica for indications such as male infertility, hormonal imbalance, and reduced vitality.

Acknowledgement

Special thanks are extended to the tribal communities of the Nilgiris region for generously sharing their ethnomedicinal knowledge and for their cooperation during field visits and interviews. Their invaluable traditional insights on *Durio zibethinus* served as the foundation for this scientific exploration and helped bridge indigenous wisdom with modern research perspectives. I also extent my sincere gratitude to the laboratory members, staff and guide for their guidance.

Summary

This study evaluated the fertility-enhancing properties of *Durio zibethinus* (durian) by preparing a homeopathic mother tincture and detecting the presence of tryptophan through the Hopkins-Cole test. The purple ring observed during the test confirmed the presence of tryptophan - a key amino acid involved in the synthesis of serotonin and melatonin, known regulators of reproductive health. The findings offer scientific validation to traditional uses of durian as a fertility booster and pave the way for its integration into homeopathic and ethnomedicinal treatments. This project also contributes to the formulation of a new drug source for future homoeopathic applications. Further studies involving quantitative phytochemical analysis and clinical evaluation are needed to assess its broader efficacy.

REFERENCES

1. Carson SA, Kallen AN. Diagnosis and management of infertility: a review. Jama. 2021 Jul 6; 326(1): 65-76.
2. Ansari RM. Potential use of durian fruit (Durio zibenthinus Linn) as an adjunct to treat infertility in polycystic ovarian syndrome. Journal of integrative medicine. 2016 Jan 1; 14(1): 22-8.
3. Jassim LR, Abbas SH, Hussein SM. ICSI Outcome After Use of Durian for Infertile Male.
4. Liu A, Shen H, Li Q, He J, Wang B, Du W, Li G, Zhang M, Zhang X. Determination of tryptophan and its indole metabolites in follicular fluid of women with diminished ovarian reserve. Scientific Reports. 2023 Oct 10; 13(1): 17124.
5. Agarwal A, Mulgund A, Hamada A, Chyatte MR. A unique view on male infertility around the globe. Reproductive biology and endocrinology. 2015 Dec; 13: 1-9.
6. Sah BP, Pathak T, Sankar S, Suresh B. Phytochemical investigations on the fruits of Duriozibenthinus Linn. for antimicrobial activity. International Journal of Pharma Sciences and Research. 2014; 5(12): 878-91.
7. Paillé V. Boosting Fertility through Tryptophan: Linking Diet, Hormones, and the Gut Microbiome. The Journal of Nutrition. 2025 Jun 18.

8. Yan J, Chen D, Ye Z, Zhu X, Li X, Jiao H, et al. Molecular mechanisms and therapeutic significance of Tryptophan Metabolism and signaling in cancer. Molecular Cancer. 2024 Oct 30; 23(1).
9. Vollmer EL. Development of Procedures for the Determination of Tryptophan.
10. Shaalini S, Chandran S. A field study on ethnomedicinal plants among tribal communities of Nilgiris. Unpublished project report. Central Council for Research in Homoeopathy (CCRH), Ministry of AYUSH, Government of India
11. McLaren JF. Infertility Evaluation. Obstetrics and Gynecology Clinics of North America. 2012 Dec 1; 39(4): 453.
12. Clark NA, Will M, Moravek MB, Fisseha S. A systematic review of the evidence for complementary and alternative medicine in infertility. International Journal of Gynecology & Obstetrics. 2013 Sep 1; 122(3): 202-6.
13. Rajachandrasekar B, Sunny A. The usefulness of homoeopathic medicines for infertility–A case series. Indian Journal of Research in Homoeopathy. 2022; 16(2): 5
14. Shamin-Shazwan K, Shahari R, Amri CN, Nordin MS, Go R. A review on medicinal uses of genus Durio. Medicinal Plants-International Journal of Phytomedicines and Related Industries. 2021; 13(3): 388-95.
15. Saminathan V, Doraiswamy R. Phytochemical analysis, antioxidant and anticancer activities of durian (Durio zibethinus Murr.) fruit extract. J Res Pharm. 2020 Nov 1; 24(6): 882-92
16. Venkatesh P, Hariprasath K, Soumya V, Francis MP, Sankar S. Isolation and aphrodisiac screening of the fruits of Duriozibenthinus Linn. Asian J Biol Sci. 2010 Jun 2; 3(1): 1-7.
17. Yadav RN, Agarwala M. Phytochemical analysis of some medicinal plants. Journal of phytology. 2011 Dec 14; 3(12).
18. Chattopadhyay R, Gupta S, Chakraborty S, Saha S, Bhar K. Preparation and Standardisation of Mother Tincture from Strychnospotatorum: A New Drug Source in Homoeopathy. Homeopathic Links. 2022 Mar; 35(01): 003-9.
19. Kumar, D. (2010, September 13). How to prepare homeopathic mother tincture: A Ansari, S. H. 2006. Essentials of pharmacognosy, 1st edition, Birla publications, New Delhi. pp. 357-359, 588-590.
20. Gul R, Jan SU, Syed F, Sherani F, Nusrat Jahan. Preliminary Phytochemical Screening, Quantitative Analysis of Alkaloids, and Antioxidant Activity of Crude Plant Extracts from Ephedra intermedia Indigenous to Balochistan. The Scientific World Journal, 2017, 1-7.
21. Singh V, Kumar R. Study of Phytochemical Analysis and Antioxidant Activity of Allium sativum of Bundelkhand Region. International Journal of Life Sciences Scientific Research. 2017; 3(6): 1451-1458.
22. Mukherjee, P. K. 2002. Quality control of herbal drugs, business horizons pharmaceutical publishers, New Delhi. 356 - 358.
23. Horbone, J.B., In: Phytochemical methods, 2nd edition. Chapman and Hall, New York,1984.
24. Indian Pharmacopoeia (IP). 1996. Govt. of India, Ministry of Health and Family Welfare Published by the Controller of Publications, New Delhi, A-47, A-53, A-54.
25. Rajan.S and Selvi Christy R., 2018, "Experimental Procedures in Life Science", Pg:383, 396-397.
26. Brain KR, Turner TD. The Practical Evaluation of Phyto-pharmaceuticals. Bristol: Wright-Scientechnica; 1975. pp. 4–9.
27. Molecules of Life- BBCCL-102., page-44, Qualitative test for amino acid and protein.
28. Harborne, J. B. (1998). Phytochemical Methods: A Guide to Modern Techniques of Plant Analysis. 3rd ed., Chapman and Hall, London.
29. Kokate, C.K., Purohit, A.P., & Gokhale, S.B. (2010). Pharmacognosy. 46th ed., Nirali Prakashan, Pune, India.
30. Trease, G.E., & Evans, W.C. (2002). Pharmacognosy. 15th ed., Saunders, London.
31. Singh, R., Gupta, N., & Singh, B. (2017). Phytochemical evaluation and pharmacological potential of bioactive constituents in medicinal plants. Journal of Pharmacognosy and Phytochemistry, 6(3), 75–81.

Cite this article as:
Shaalini S. Durio Zibethinus Mother Tincture: A Novel Ethnomedicinal Drug Beyond HPI with Fertility-Enhancing Properties and Phytochemical Characterization. International Journal of Ayurveda and Pharma Research. 2025;13(10):16-24.
https://doi.org/10.47070/ijapr.v13i10.3865
Source of support: Nil, Conflict of interest: None Declared

***Address for correspondence**
Dr. Shaalini S
¼, Rajamanickam Nivas,
Umari Cottage, College Road, Coonoor,
Nilgiris, Tamilnadu, India.
Email: shaalini.yes@gmail.com