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REVIEW ARTICLE

From Kitchen to Clinic: Translation of *Tila*, *Maasha* and *Guda*-based *Ayurvedic* Nutraceuticals in *Artava Kshaya*: A Drug Review

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ABSTRACT

Background: Artava Kshaya, characterised by scanty or delayed menstruation, is commonly associated with poor nutrition, anaemia, hormonal imbalance, and inadequate uterine health. Hence, management should focus on improving nourishment, blood quality, and endocrine balance rather than providing only symptomatic relief. Traditional dietary substances such as Maasha, Tila, and Guḍa are known for their strengthening and reproductive-supportive properties and may offer a natural therapeutic option.

Aim and Objectives: To review the Ayurvedic and modern scientific literature regarding the role of Tila, Guda and Maasha as nutraceuticals in Artava Kshaya, with special emphasis on their pharmacological properties, nutritional significance, and probable therapeutic utility in improving menstrual and reproductive health.

Materials and Methods: An integrative review of classical Ayurvedic descriptions and modern nutritional and phytochemical evidence was conducted to evaluate the roles of Vigna mungo, Sesamum indicum, and Jaggery in the management of Artava Kshaya.

Discussion: The combined use of these nutraceutical foods offers a simple, safe, and holistic approach that nourishes dhatus, supports hormonal regulation, improves uterine circulation, and restores menstrual flow. This food-based strategy addresses the root causes of Artava Kshaya and offers a practical, sustainable solution to improve women's reproductive health.

Conclusion: The review suggests that Tila, Guda, Maasha possess significant nutritional and Ayurvedic therapeutic properties that may help in the management of Artava Kshaya . Their Rasayan, Balya, and Artavajanana effects, along with their rich nutritional profile, indicate their potential role as safe and cost-effective dietary interventions for promoting female reproductive health.

1. INTRODUCTION

Artava Kshaya is a condition characterised by scanty or delayed menstruation, mainly caused by poor nourishment of *Rasa* and *Rakta dhatus* along with disturbed *Apana Vata*. In modern terms, it is often associated with anemia, hormonal imbalance, weak endometrial growth, oxidative stress, and nutritional deficiencies, as well as scanty menstruation.[1] Therefore, management should focus not only on regulating menstruation but also on improving overall nutrition, blood quality, and reproductive health.

Classical Ayurveda recommends nourishing and strengthening foods for such conditions. In this context, *Maasha* (*Vigna mungo*), *Tila* (*Sesamum indicum*), and *Guḍa* (Jaggery) are traditionally known for their *brimhana* (tissue-building), *balya* (strength-promoting), and reproductive-supportive properties. These foods help replenish *dhatus*, improve blood formation, and support normal menstrual function.

Modern research also supports these benefits. *Maasha* provides high-quality protein, iron, and antioxidants that help tissue repair and improve hemoglobin.[2] Sesame seeds and their extracted oils show promising potential for addressing sexual health issues in both men

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and women.[3] *Guḍa,* being rich in iron and minerals, acts as a natural hematinic and a healthier alternative to refined sugar, helping correct anemia and improve energy levels.[4] Together, their phytoconstituents offer antioxidant, hormonal, and nutritive support.

Thus, the combined use of *Maasha*, *Tila*, *and Guḍa* provides a simple, natural, and food-based approach to improve nourishment, restore hormonal balance, and effectively manage *Artava Kshaya*. Hence, management requires agents that provide hormonal modulation, antioxidant protection, anti-inflammatory action, and *dhatu-poshana*.[5]

1.1. Aim of Study

This study is designed as a drug review to critically analyze the Ayurvedic references mentioned in the Sushrut Samhita in the Artava Kshaya management, which consists of *Agneya Dravya* such as *tila*, *guda and maasha*. This study analyses the pharmacological properties and contemporary scientific evidence of selected drugs used in this formulation. Data were collected from classical *Ayurvedic* texts, including *Samhitas*, *Nighantus*, and standard *Dravyaguna* and references to compile information on *rasa*, *guna*, *veerya*, *vipaka, karma*, and *stree roga* indications of the drugs. Modern scientific data regarding botanical identification, phytoconstituents, pharmacological activities, and clinical evidence were obtained from electronic databases such as PubMed, Google Scholar, Scopus, Ayush Dhara, and Ayush Research Portal. The selected drugs were included based on their classical indications and availability of supportive research. The collected information was systematically organized, tabulated, and analysed to correlate *Ayurvedic* properties with modern pharmacological actions and to establish the probable mode of action of the formulation in improving menstrual function. As this study was purely literature-based, no ethical clearance was required.

2. REVIEW OF THE DRUG

2.1. Tila/Sesame (*Sesame Indicum*)

Scientific Name - *Sesamum indicum*[6]

Family - Pedaliaceae

Sesame seeds, a staple of various Asian dietary patterns, are highly regarded for their therapeutic and nutritional profiles. Characterised by a high concentration of lignans – specifically sesamin and sesamolin – as well as gamma tocopherol (Vitamin E), unsaturated fatty acids, and dietary fiber, recent empirical studies categorize *Sesamum indicum* as a potent phytoestrogen, antioxidant, and hypolipidemic agent.[7] The present findings highlight the beneficial role of sesame consumption in improving hormonal status, antioxidant defence, and cardiovascular risk factors in postmenopausal women.[8]

2.1.1. Hormonal modulation

Following the onset of menopause, the precipitous decline in estrogen synthesis, coupled with the persistence of elevated androgenic precursors such as dehydroepiandrosterone sulfate (DHEAS), predisposes individuals to endocrine disruptions, cardiovascular pathologies, and hormone-dependent malignancies. Clinical observations indicate that *Sesamum indicum* intake facilitates a mild regulatory influence on endocrine homeostasis without inducing supraphysiological estrogenic stimulation. Specifically, sesame consumption significantly attenuates serum DHEAS levels, thereby reducing androgenic excess and enhancing hormonal equilibrium. Concurrently, it upregulates sex hormone binding globulin (SHBG), a glycoprotein that sequesters circulating free estrogens and androgens to decrease their bioavailability. Elevated SHBG concentrations are associated with a protective effect against mammary carcinogenesis and adverse cardiovascular outcomes.[9]

In addition, sesame improves estrogen metabolism by shifting it toward the safer 2-hydroxylation pathway, increasing the 2-OHE1/16α-OHE1 ratio. This favors non-carcinogenic estrogen metabolites and reduces estrogen-related risks. Importantly, estradiol and estrone levels do not increase, indicating that sesame acts as a mild phytoestrogen rather than a hormone replacement therapy. Thus, sesame functions as a natural, safe hormonal modulator rather than a stimulant.[10]

2.1.2. Lipid-lowering and cardioprotective effects

Menopause is associated with increased cholesterol and atherosclerotic risk. Regular sesame consumption improves the lipid profile by reducing total cholesterol, low-density lipoproteins (LDL) cholesterol, and the LDL/high-density lipoprotein (HDL) ratio without lowering protective HDL levels. These changes decrease plaque formation and reduce cardiovascular risk. The benefits are attributed to sesame lignans, dietary fiber, and unsaturated fatty acids.[11]

2.1.3. Antioxidant protection

Furthermore, *Sesamum indicum* enhances the recycling of Vitamin E, augments hepatic function, and shields systemic tissues from oxidative stress. Specifically, sesamin modulates lipid metabolism by attenuating total cholesterol levels and elevating HDL concentrations. Sesame oil also facilitates hepatic detoxification and mitigates cellular damage induced by reactive oxygen species, including nitric oxide and various free radicals. Empirical studies demonstrate that sesame coat extract inhibits the oxidation of LDL and confers cytoprotective benefits, underscoring its potent anti-inflammatory and antioxidant properties.[12] By protecting cell membranes and mitigating oxidative stress, sesame supports the health of vascular and reproductive tissues [Table 1].

2.2. Major Phytoconstituents

Sesame seeds contain a diverse range of bioactive phytochemicals that contribute to hormonal regulation, antioxidant protection, and improvement of ovarian function. In polycystic ovarian syndrome, the main pathological features include hyperandrogenism, chronic inflammation, oxidative stress, and impaired follicular maturation. The phytoconstituents of sesame help address these mechanisms through phytoestrogenic, anti-androgenic, anti-inflammatory, and cytoprotective actions, thereby supporting normalization of the hypothalamic–pituitary–ovarian axis and restoration of regular ovulation.[13]

2.3. Major Constituents and their Actions[14]

2.3.1. Lignans

Lignans form the principal active group in sesame and are well known for their phytoestrogenic and antioxidant activities.

- Sesamin exhibits mild estrogen-like and antioxidant properties, helps restore estrogen–androgen balance, reduces testosterone levels, and supports regular menstrual cycles
- Sesamolin functions as a hormonal modulator and improves feedback control of the hypothalamic–pituitary–ovarian axis, thereby helping maintain a normal luteinizing hormone and follicle-stimulating hormone ratio
- Sesamol shows strong anti-inflammatory and antioxidant effects, inhibits inflammatory mediators and oxidative stress, and protects ovarian follicles from damage
- Sesaminol acts as a free radical scavenger and promotes better follicular maturation by reducing oxidative injury within the ovary.

2.3.2. Phytosterols

Phytosterols mainly contribute to anti-androgenic activity and hormonal stabilization.

- Beta-sitosterol blocks androgen receptor binding and helps reduce hyperandrogenism
- Stigmasterol decreases testosterone activity and supports improvement in ovulation
- Campesterol regulates steroid hormone synthesis and contributes to overall endocrine balance.

2.3.3. Flavonoids

Flavonoids provide additional antioxidant and follicle-protective effects.

- Quercetin prevents follicular degeneration and reduces the formation of cystic follicles
- Kaempferol improves granulosa cell survival through its anti-inflammatory action and supports healthy follicle development
- Apigenin protects ovarian tissue from oxidative damage and improves ovarian morphology.

2.3.4. Other antioxidants

Other naturally occurring antioxidants further enhance reproductive protection.

- Polyphenols and tocopherols reduce lipid peroxidation and safeguard oocytes from oxidative stress
- Sesquiterpenes show mild estrogen-like activity and help maintain endocrine stability and regular cycles.

Together, these phytoconstituents act synergistically to reduce androgen excess, control inflammation, minimise oxidative stress, and improve follicular health

2.4. Ayurvedic–Modern Correlation

Mentioned in Table 2.

3. MASHA/*VIGNA MUNGO*

Scientific Name - *Vigna mungo*[17]

Family - Fabaceae

Subfamily - Faboideae (Papilionaceae)

Subspecies:[18]

1. *V. mungo* var. niger
2. *V. mungo* var. viridis.

3.1. Pharmacological Actions Relevant to Artava Kshaya

3.1.1. Hormonal and phytoestrogenic activity

The presence of isoflavones in *Maash* causes it to act as a phytoestrogen, interacting directly with systemic estrogen receptors. This mechanism regulates ovarian hormones, promotes oogenesis, and stimulates endometrial lining proliferation. Consequently, these properties are clinically significant in the management of Artava Kshaya, as the herb aids in restoring menses, particularly in cases where estrogen deficiency is the underlying etiology.[19]

3.1.2. Antioxidant and cytoprotective effect

Flavonoids and phenolic acids exhibit robust antioxidant properties that neutralize reactive oxygen species, thereby protecting ovarian and uterine tissues from oxidative damage. By preserving cellular integrity and enhancing the physiological state of the endometrial lining, these phytochemicals foster the homeostatic environment required for regular menstrual cycles.[20]

3.1.3. Anti-inflammatory and uterine support

Saponins and polyphenols exert significant anti-inflammatory effects by modulating prostaglandin synthesis and inhibiting various inflammatory mediators. This biochemical regulation supports physiological uterine contractility and mitigates the symptoms of dysmenorrhea. By normalizing the function of *Apana Vata*, these compounds optimize the pelvic environment to ensure a consistent and unobstructed menstrual flow.[21]

3.1.4. Nutritional and dhatu-poṣhaṇa effect

Black gram (*Vigna mungo*) seeds are rich in essential minerals, including calcium, magnesium, sodium, copper, and zinc, with potassium being the most abundant. These nutrients support vital physiological functions and, in Ayurvedic terms, provide Brimhana (nourishing) and Rakta-vardhana (blood-enhancing) effects.[22] By directly addressing Dhatu Kshaya (tissue depletion), black gram effectively treats the underlying pathology of Artava Kshaya.

3.1.5. Metabolic and reproductive benefits

Research indicates that *Vigna mungo* exhibits substantial antihyperlipidemic and antidiabetic activities, which serve as foundational components of its reproductive-enhancing profile. By stabilizing key metabolic and endocrine biomarkers, this botanical agent facilitates the optimization of ovarian function and promotes the maintenance of menstrual regularity via indirect physiological pathways.[23]

3.2. Key Experimental Findings (Study Outcomes)

Based on the animal study (female rats):[24]

- Thyroid regulation: Significant reduction in T3 and T4 levels with a corresponding increase in thyroid-stimulating hormone
- Cycle restoration: Reversal of prolonged diestrus phases and successful restoration of the estrus cycle
- Better ovarian tissue and function: Healthier body weight, and lowered excessive body heat
- Systemic balance: Correction of hyperglycemia alongside potent antioxidant and anti-inflammatory activity
- Phytochemical synergy: These outcomes are attributed to the high concentration of flavonoids, phenols, saponins, and alkaloids [Tables 3 and 4].

3.3. Ayurvedic–Modern Correlation

Table 5.

4. JAGGERY

Scientific Name - *Saccharum officinarum*[27]

Family - Poaceae (Graminae)

Jaggery is an unrefined natural sweetener obtained from sugarcane or palm sap that retains significant amounts of minerals, micronutrients, and antioxidant compounds, unlike refined sugar. Due to its rich iron, mineral, and antioxidant content, jaggery contributes not only to energy supplementation but also to hematological, metabolic, and endocrine support. These properties indirectly influence female reproductive physiology by improving blood quality, reducing oxidative stress, and supporting hormonal metabolism.[28]

4.1. Nutritional Composition

Jaggery contains appreciable quantities of iron, calcium, magnesium, potassium, and trace minerals along with small amounts of phenolic antioxidants. It provides complex carbohydrates that release glucose slowly, offering sustained energy rather than sudden glycemic spikes. This unique nutritional profile makes jaggery both a natural sweetener and a functional food with systemic benefits.[29]

4.2. Physiological and Hormonal Effects

4.2.1. Hematinic and blood-enriching action

The iron content in jaggery facilitates hemoglobin synthesis, serving as a preventative measure against iron-deficiency anemia. Maintaining optimal hemoglobin levels, it enhances systemic oxygen transport and increases uterine perfusion, both of which are critical for endometrial proliferation and regular menses. This improvement in hematological quality optimizes the function of reproductive tissues and alleviates the lethargy frequently associated with menstrual irregularities.[30]

4.2.2. Metabolic and endocrine support

Jaggery facilitates sustained energy expenditure through the gradual release of glucose, which assists in maintaining glycemic stability. By preventing rapid fluctuations in blood sugar, it supports the homeostatic function of the endocrine system and mitigates metabolic stress, a key factor that can otherwise disrupt hormonal equilibrium.[31]

4.2.3. Antioxidant protection

The phenolic constituents and micronutrients found in jaggery demonstrate significant antioxidant activity, effectively attenuating free radical formation and inhibiting lipid peroxidation. By mitigating systemic oxidative stress, jaggery serves a protective role for ovarian and uterine tissues, thereby fostering a physiological environment conducive to optimal reproductive health.[32]

4.2.4. Hormone metabolism and detoxification

Jaggery functions as a nutrient-dense base that can be optimized through fortification with botanical adjuncts, such as turmeric, black pepper, fennel, and caraway, alongside bioactive herbs like holy basil, giloy, mint, triphala, and gooseberry. The integration of these elements results in a superior formulation with enhanced antioxidant, detoxifying, and immunomodulatory properties. Consequently, these fortified sweeteners possess significant therapeutic potential as both functional foods and nutraceuticals.[33]

4.2.5. Mineral-mediated uterine support

Calcium, magnesium, and potassium facilitate neuromuscular stability and modulate smooth muscle contractility. By regulating these physiological processes, these minerals assist in managing uterine contractions, thereby mitigating the severity of menstrual cramps and associated pelvic discomfort Tables 6 and 7.[34]

4.3. Ayurvedic–Modern Correlation

Mentioned in Table 8.

5. DISCUSSION

Artava Kshaya primarily arises from a nutritional deficit within the reproductive system. When the fundamental tissues – *Rasa* (plasma) and *Rakta* (blood) – are inadequately formed, the uterus is deprived of the essential nourishment required for healthy function. This results in clinical symptoms such as scanty, delayed, or irregular menstruation. Furthermore, the aggravation of *Apana Vata* disrupts the physiological downward flow of menses. In modern clinical terms, this condition correlates with anemia, endocrine imbalances, oxidative stress, and suboptimal endometrial proliferation. Effective management must therefore address these underlying causes by improving nutritional status, hematological quality, and hormonal equilibrium.

The therapeutic combination of Maasha (Black Gram), Tila (Sesame), and Guda (Jaggery) is highly effective in this context, as their traditional Ayurvedic properties are supported by modern nutritional profiles.

1. Maasha provides essential proteins, iron, and phytoestrogens that facilitate tissue regeneration and increase hemoglobin levels. Its antioxidant properties protect ovarian tissues from oxidative damage, while its phytoestrogenic activity supports healthy endometrial growth and menstrual volume.
2. Tila contains healthy lipids, lignans, and tocopherols that optimize estrogen metabolism and enhance uterine vascularisation. By acting as a gentle phytoestrogen, it stabilizes hormonal fluctuations and reduces pelvic inflammation without causing excessive endocrine stimulation.
3. Guda serves as a vital hematinic and metabolic support. Unlike refined carbohydrates, it retains a rich mineral profile that assists in correcting anemia and improving oxygen delivery to reproductive organs. Its positive impact on hepatic and metabolic functions further aids in the systemic processing of hormones.

When used in combination, these three ingredients create a nutritional synergy. *Maasha* builds the structural integrity of the tissues, *Tila* regulates hormonal and uterine function, and *Guda* optimizes blood quality and energy metabolism. Together, they address the core pathologies of *Artava Kshaya* – including tissue depletion, circulatory issues, and oxidative stress – offering a comprehensive, food-based approach to restoring reproductive health.

6. CONCLUSION

Artava Kshaya is far more than a menstrual irregularity; it is a clinical marker of deeper physiological deficits, including systemic undernourishment, compromised blood quality, and endocrine instability. While traditional perspectives emphasize the depletion of *Rasa* and *Rakta dhatus*, modern science identifies these same issues as nutritional anemia, oxidative stress, and a disrupted hypothalamic-pituitary-ovarian axis. The synergy of *Maasha*, *Tila*, and *Guda* offers a sophisticated, evidence-based approach to restoring reproductive health by addressing both perspectives:

- Tissue regeneration and ovarian support (*Maasha*): From a modern lens, the proteins and isoflavones in *Maasha* provide the building blocks for cellular repair and serve as mild phytoestrogens. These compounds help thicken a thin endometrium and protect follicles from oxidative damage, which *Ayurveda* describes as strengthening the reproductive tissues.
- Hormonal Modulation and Vascular Health (*Tila*): Contemporary research highlights sesame's ability to increase SHBG and shift estrogen metabolism toward safer pathways. This aligns with the *Ayurvedic* goal of balancing *Vata* and *Pitta*, ensuring that hormones are not just present, but are bioavailable and circulating efficiently to the uterus.
- Hematological and Metabolic Vitality (*Guda*): Jaggery's rich iron and mineral profile directly targets iron-deficiency anemia – a primary modern cause of scanty menses. By improving hemoglobin synthesis, it ensures the "*Rakta*" (blood) is nutrient-dense, providing the energy and oxygen required for a healthy,

regular cycle.

Ultimately, this tripartite combination bridges the gap between ancient wisdom and modern clinical nutrition. By focusing on hematogenesis, antioxidant defence, and hormonal equilibrium, this food-based strategy moves beyond temporary fixes to offer a safe, sustainable, and natural foundation for long-term female reproductive wellness.

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11. CONFLICTS OF INTEREST

The authors declare that they have no conflict of interest related to this work.

12. DISCLAIMER/VIEW AND OPINIONS

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13. AI-USE DECLARATION

The authors declare that no generative AI tools were used to create scientific content, interpret data, or draft any sections of this manuscript. AI-based tools were used solely for minor language and grammar refinements to improve clarity and readability. All scientific content, analysis, and conclusions remain the sole responsibility of the author.

14. DATA AVAILABILITY STATEMENT

The data analyzed in this review were obtained from publicly available sources, including peer-reviewed articles, observational studies, and surveys accessible through databases.

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REFERENCES

1. Islam M, Humtsoe Y. Critical review on Artava Kshaya with special respect to oligomenorrhea and hypomenorrhea. World J Pharm Res. 2025;14(12):503-16. doi: 10.20959/wjpr202512-37227
2. Hadi F, Sardar H, Alam W, Aschner M, Alzahrani FM, Halawani IF, Xiao J, Khan H. *Vigna mungo* (Linn.) Hepper: Ethnobotanical, pharmacological, phytochemical, and nutritious profile. Phytochem Rev. 2025;24(2):1119-42. doi: 10.1007/s11101-024-09972-6
3. Al-Akaishi AH, Al-Bazi SJ, Al-Obaidi RA. A hormonal study of the effect of sesame oil in female albino rats whose ovaries had been removed. Int J Health Sci. 2022;6(Suppl 3):8930-40. doi: 10.53730/ijhs.v6nS3.8129
4. Sakthibalan M, Sarumathi E, Mangaiarkkarasi A, Meher BR. Evaluation of efficacy of jaggery and raisins as supplements in iron deficiency anemia among medical undergraduate students in South India. Natl J Physiol Pharm Pharmacol. 2018;8(10):1432-6. doi: 10.5455/njppp.2018.8.0723620072018
5. Hadi F, Sardar H, Alam W, Aschner M, Alzahrani FM, Halawani IF, Xiao J, Khan H. *Vigna mungo* (Linn.) Hepper: Ethnobotanical, pharmacological, phytochemical, and nutritious profile. Phytochem Rev. 2025;24(2):1119-11228. doi: 10.1007/s11101-024-09972-6.
6. Wei P, Zhao F, Wang Z, Wang Q, Chai X, Hou G, Meng Q. Sesame (*Sesamum indicum* L.): A comprehensive review of nutritional value, phytochemical composition, health benefits, development of food, and industrial applications. Nutrients. 2022;14(19):4079. doi: 10.3390/nu14194079.
7. Wu WH, Kang YP, Wang NH, Jou HJ, Wang TA. Sesame ingestion affects sex hormones, antioxidant status, and blood lipids in postmenopausal women. J Nutr. 2006;136(5):1270-5. doi: 10.1093/jn/136.5.1270
8. Bhati K, Korde S, Mulye N, Chavan M. An ayurvedic review on Tila Taila (*Sesamum indicum* L). J Orient Res Madras. 2024;3301-5.
9. Wu WH, Kang YP, Wang NH, Jou HJ, Wang TA. Sesame ingestion affects sex hormones, antioxidant status, and blood lipids in postmenopausal women. J Nutr. 2006;136(5). doi: 10.1093/jn/136.5.1270
10. Wu WH, Kang YP, Wang NH, Jou HJ, Wang TA. Sesame ingestion affects sex hormones, antioxidant status, and blood lipids in postmenopausal women. J Nutr. 2006;136(5):1270-73. doi: 10.1093/jn/136.5.1270
11. Rashed K. Phytochemical and biological effects of *Sesamum indicum* L.: A review. Planta Scientia. 2022;5(1):8-11.
12. Wang BS, Chang LW, Yen WJ, Duh PD. Antioxidative effect of sesame coat on LDL oxidation and oxidative stress in macrophages. Food Chem. 2007;102(2):351-60.
13. Saleem TS, Chetty CM, Reddy AE, Bharathi G, Bharani K, Deepthi PS, Bhavani P. Phyto-pharmacological review of *Sesamum indicum* Linn. Nat Prod Indian J. 2009;5(4):184-91.
14. Abbas S, Sharif MK, Sibt-e-Abbas M, Teferra TF, Sultan MT, Anwar MJ. Nutritional and therapeutic potential of sesame seeds. J Food Qual. 2022;2022:6163753. doi:10.1155/2022/6163753.
15. Gaur BL, Kulavatiya R, Prasad VV, editors. Charaka samhita: sutrasthana. 1st ed., Ch. 27., Ver. 30. New Delhi: Rashtriya Ayurveda Vidyapeeth; 2011. p. 814.
16. Sitaram B.. Dhanya varga, tila. In: Bhavaprakasha of bhavamishra (bhavamishra nighantu). Commentary. Varanasi: Chaukhambha Orientalia; n.d. p. 437.
17. Anwaar M, Jabeen Q, Ali H, Nadeem A, Rasheed HM. *Vigna mungo* possesses pharmacological potential for the management of hyperthyroidism and improves estrus cycle disturbances. Bangladesh J Pharmacol. 2023;18(3):79-90. doi: 10.3329/bjp.v18i3.65860
18. Hadi F, Sardar H, Alam W, Aschner M, Alzahrani FM, Halawani IF, Xiao J, Khan H. *Vigna mungo* (Linn.) Hepper: Ethnobotanical, pharmacological, phytochemical, and nutritious profile. Phytochem Rev. 2025;24(2):1119-40. doi: 10.1007/s11101-024-09972-6.
19. Sajid M, Stone SR, Kaur P. Recent advances in heterologous synthesis paving way for future green-modular bioindustries: A review with special reference to isoflavonoids. Front Bioeng Biotechnol. 2021;9:673270. doi: 10.3389/fbioe.2021.673270
20. Arockianathan PM, Rajalakshmi K, Nagappan P. Proximate

composition, phytochemicals, minerals and antioxidant activities of *Vigna mungo* L. Seed coat. Bioinformation. 2019;15(9):579-85. doi: 10.6026/97320630015579
21. Waller GR, Jurzysta M, Marianowski Z. Alfalfa saponins: Chemistry and application. In: Bidlack WR, Omaye ST, Meskin MS, Topham DK, editors. Phytochemicals as bioactive agents. Boca Raton: CRC Press; 2000. p. 165-86.
22. Dhumal JS, Chaudhari SR, Chavan MJ. Bioactive components of *Vigna mungo*. J Drug Deliv Ther. 2019;9(4-s):748-54.
23. Hadi F, Sardar H, Alam W, Aschner M, Alzahrani FM, Halawani IF, Xiao J, Khan H. *Vigna* mungo (Linn.) Hepper: Ethnobotanical, pharmacological, phytochemical, and nutritious profile. Phytochem Rev. 2025;24(2):1119-1125. doi: 10.1007/s11101-024-09972-6.
24. Anwaar M, Jabeen Q, Ali H, Nadeem A, Rasheed HMF. *Vigna mungo* possesses pharmacological potential for the management of hyperthyroidism and improves estrus cycle disturbances. Bangladesh J Pharmacol. 2023;18(3):79-90. doi: 10.3329/bjp.v18i3.65860
25. Sitaram B. Dhanya varga, masha. In: Bhavaprakasha of bhavamishra (bhavamishra nighantu). Commentary. Varanasi: Chaukhambha Orientalia; n.d. p. 432.
26. Shastri K, Pandeya GS, editors. Sutrasthana 23/27. In: Caraka samhita of agnivesa. Vol. 1. Varanasi: Chaukhambha Sanskrit Sansthan; 2009. p. 371.
27. Sharifi-Rad J, Painuli S, Sener B, Kılıç M, Kumar NV, Semwal P, Docea AO, Suleria HA, Calina D. Revisiting the nutraceutical profile, chemical composition, and health benefits of jaggery: Updates from recent decade. eFood. 2023;4(2):e75. doi: 10.1002/efd2.75
28. Sharifi-Rad J, Painuli S, Sener B, Kılıç M, Kumar NV, Semwal P, Docea AO, Suleria HA, Calina D. Revisiting the nutraceutical profile, chemical composition, and health benefits of jaggery: Updates from recent decade. eFood. 2023;4(2):75-77. doi: 10.1002/efd2.75
29. Sakthibalan M, Sarumathi E, Mangaiarkkarasi A, Meher BR. Evaluation of efficacy of jaggery and raisins as supplements in iron deficiency anemia among medical undergraduate students in South India. Natl J Physiol Pharm Pharmacol. 2018;8(10):1432-1433. doi: 10.5455/njppp.2018.8.0723620072018
30. Sakthibalan M, Sarumathi E, Mangaiarkkarasi A, Meher BR. Evaluation of efficacy of jaggery and raisins as supplements in iron deficiency anemia among medical undergraduate students in South India. Natl J Physiol Pharm Pharmacol. 2018;8(10):1432-34. doi: 10.5455/njppp.2018.8.0723620072018
31. Tata AI. Is jaggery good for diabetes?: Glycemic index, nutritional benefits and more. Knowledge Center; 2020. Available from: https://www.tataaig.com/knowledge-center/health-insurance/is-jaggery-good-for-diabetes [Last accessed on 2026 Feb 06].
32. Ahmed MS, Nayaka MA, Almulaiky YQ, Al-Dalali S. Evaluation of phytochemical screening and biological activity of lyophilized sugarcane juice, vacuum and open pan jaggery for aqueous extracts. J Adv Sci Res. 2021;12(1):81-91.
33. Rao GP, Singh P. Value addition and fortification in non-centrifugal sugar (jaggery): A potential source of functional food. Sugar Tech. 2021;23(3):472-83.
34. Sharifi-Rad J, Painuli S, Sener B, Kılıç M, Kumar NV, Semwal P, Docea AO, Suleria HA, Calina D. Revisiting the nutraceutical profile, chemical composition, and health benefits of jaggery: Updates from recent decade. eFood. 2023;4(2):78-79. doi: 10.1002/efd2.75
35. Sitaram B. Ikshu varga, guda. In: bhavaprakasha of bhavamishra (bhavamishra nighantu). commentary. Varanasi: Chaukhambha Orientalia; n.d. p. 557.

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Table 1: Clinical significance of sesame

Action	Effect of sesame	Clinical significance
Decrease in dehydroepiandrosterone	Reduces excess androgen	Better hormonal balance
Increase in sex hormone-binding globulin	Binds free hormones	Cancer and CVD protection
Safer estrogen metabolism	Improvement in 2-hydroxyestrone and 16α-hydroxyestrone ratio (2OHE1/16α-OHE1) ratio	Lower carcinogenic risk
Lipid lowering	Reduction in total cholesterol, low- density lipoprotein, and an increase in high-density and low-density ratio (HDL/LDL)	Cardioprotection
Antioxidant	Increase in γ-tocopherol, decrease in LDL oxidation	Reduced oxidative stress

LDL: Low-density lipoproteins, HDL: High-density lipoprotein, CVD: Cardiovascular disease

Table 2: Ayurvedic-modern correlation[15,16]

Classical Properties of Tila	Ayurvedic Implication	Modern Interpretation	Benefit in Artava Kshaya
Sneha Snigdha	Sliminess, unctuousness	Essential fatty acids	Smooth uterine function, hormone synthesis
Guru	Heaviness	Protein and energy-rich	*Dhatu poshana*, tissue building
Balam	Immunity/strength/physical endurance	Anabolic/metabolic support	Improves ovarian vitality
Vata-samsamana	*Vata* pacifying	Anti-inflammatory, smooth muscle relaxation	Normalizes *Apana vata*
Agni-diptih	Increase in the power of digestion/metabolism	Better nutrient absorption	Proper *Rakta-Artava* formation
Sukrala	Semenogague	Phytoestrogenic activity	Hormonal regulation, fertility support
Medhya, Pitta vardhana	Metabolic stimulation	Endocrine regulation	Supports ovarian function

Table 3: Study outcome

Study finding	Modern meaning	Ayurvedic interpretation	Relevance in Artava Kshaya
Elevation in the T3/T4 ratio, reduction in the TSH	Normalization of thyroid function	*Agni* and *Dhatwagni samyata*	Normalizes *Artava* production
Estrus cycle normalization	Ovulatory regulation	*Artavavaha srotoshuddhi*	Regular menstruation
Ovarian repair	Follicular restoration	*Beeja poshana*	Improves ovum quality

TSH: Thyroid-stimulating hormone

Table 4: Major phytoconstituents of *Vigna Mungo*

Phytochemical group	Important constituents	Primary biological role
Flavonoids	Vitexin, Kaempferol, Quercetin	Antioxidant, anti-inflammatory
Isoflavonoids	Genistein, Daidzein	Phytoestrogenic, hormonal modulation
Phenolics acids	Gallic, Caffeic, and Ferulic acids	Cytoprotective, endometrial support
Saponins	Soyasaponins	Metabolic and endocrine regulation
Essential fatty acids	Linoleic acids, linolenic	Prostaglandin balance, uterine tone
Proteins and amino acids	High protein content	Tissue repair and nourishment
Minerals	Iron, Zinc, Magnesium	Hematinic, ovarian function support
Vitamins	B-complex, Vitamin C	Metabolic enhancement

Table 5: Ayurvedic-modern correlation[25,26]

Classical term	Ayurvedic meaning	Modern interpretation	Relevance in *Artava Kshaya*
Guru	Heaviness	High protein, anabolic	The *Dhatu* building improves tissue mass
Snigdha	Unctuous, sliminess	Essential fatty acids	Regulates prostaglandins, smooth uterine function
Madhura	Nutritive, restorative	Energy and micronutrient-rich	Corrects *Rasa-Rakta* depletion
Vatahara	*Vata* pacifying	Anti-inflammatory, uterine relaxation	Normal *Apana Vata* facilitates proper menstruation
Tarpana	Satiating	Cellular regeneration	Endometrial support
Brimhana	Tissue bulk promotion	Protein synthesis	Corrects *Artava Kshaya*
Balya	Strength, stamina and immunity promoter	Metabolic and endocrine support	Improves ovarian function
Sukrala	Semenogague	Phytoestrogenic activity	Hormonal balance, fertility support
Stanya	Nourishment	Precursors of lipids and hormones	Supporter of steroid hormone synthesis

Table 6: Major phytoconstituents of jaggery

Class	Reported constituents	Significance
Carbohydrates	Sucrose, glucose, fructose	Sustained energy source
Minerals	Iron, calcium, magnesium, potassium, phosphorus, sodium	Hematopoiesis, metabolic and neuromuscular support
Vitamins	Vitamin C, B-complex, Vitamin-E	Antioxidant and metabolic functions
Phenolic acids	Gallic acids, ferulic acids, caffeic acids, protocatechuic acid, syringic acid, vanillic acid	Strong Antioxidant Activity
Flavonoids	Natural plant flavonoids (0.2–0.4%)	Anti-inflammatory and cytoprotective
Total phenolics	~3000–3800 μg GAE/G	High antioxidant potential

Table 7: Clinical significance of jaggery

Action	Mechanism	Reproductive/clinical significance
Hematinic	Iron supplementation	Improves hemoglobin and uterine blood flow
Energy support	Slow glucose release	Maintains endocrine stability
Antioxidant	Reduce oxidative stress	Protects ovarian and uterine tissues
Liver support	Enhance detoxification	Better hormone metabolism
Mineral rich	Calcium, magnesium, potassium	Improves uterine tone and reduces cramps

Table 8: Ayurvedic-modern correlation[35]

Classical term	Ayurvedic meaning	Modern interpretation	Relevance in Artava Kshaya
Laghu	Easily digestible	Easy metabolism	Better nutrient absorption
Pathyam	Wholesome (beneficial for the body channels or system)	Safe nutritious food	Supports overall health
Anabhishyandi	Non-channel clogging	Low inflammatory/metabolic load	Better circulation
Agnipushtikrit	Improves digestion	Enhances metabolism	Proper *dhatu* formation
Vataghna	*Vata* pacifying	Smooth muscle relaxation	Proper muscle flow
Madhura	Nourishing	Energy and anabolic effect	Tissue building
Vrushata	Virility	Generative power, the ability to reproduce	Hormonal support
Asrukprasadan	Blood enricher	Iron-rich, hematinic	Improves hemoglobin and uterine blood supply