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USES OF HERBAL SEEDS (PUMPKIN SEEDS, FENUGREEK SEEDS AND FLAXSEEDS) IN FEMALE REPRODUCTIVE HEALTH

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ABSTRACT

The role of nutrition in reproductive health is emphasized in both modern and traditional medical systems. Ayurveda, the ancient Indian system of medicine, identifies food (Ahara) as a critical determinant of reproductive health (Garbha-sambhava Samagri).[1] Pumpkin seeds (Cucurbita pepo), methi seeds (Trigonella foenum-graecum), and flaxseeds (Linum usitatissimum) are considered potent functional foods due to their rich phytonutrient profiles. In Ayurveda, pumpkin seeds are valued for their vrishya (aphrodisiac) and balya (strength-promoting) properties, supporting healthy ovulation and hormonal balance.[2] Methi seeds are traditionally used for their garbhasthapana (uterine toning) and shukra dhatu nourishing properties, beneficial for menstrual disorders and hormonal imbalances.[3] Flaxseeds, with their snigdha (unctuous) and madhura (sweet) qualities, are believed to balance Vata and Pitta doshas, improving fertility and regulating the menstrual cycle. Contemporary studies support these traditional views, showing that these seeds are rich in essential fatty acids, phytoestrogens, and micronutrients that positively influence endocrine function, ovulatory cycles, and symptoms of PCOS.[4] Thus, Ayurvedic wisdom, supported by modern science, highlights the utility of these seeds in promoting and maintaining female reproductive health.

KEYWORDS: PCOS, Phytoestrogen, Ovulatory cycle, Reproductive health.

INTRODUCTION

Women's health concerns significantly influence multiple dimensions of life, including social, emotional, and economic well-being.[5] Although there are clear biological,

psychological, and sociocultural differences between men and women, it was only in the later part of the 20th century that Western medicine began to recognize women's health as a distinct field.[6] Hormonal fluctuations, which vary across a woman's lifespan, play a crucial role in overall health and wellness.[7] Health issues related to menstruation, in particular, can adversely affect women's quality of life, social engagement, and educational participation.[8]

Over the past few decades, there has been growing global interest in the use of traditional and herbal remedies for addressing women's health conditions.[6] Historically, herbal medicine has been widely used to manage various illnesses in women. These natural therapies are valued for supporting hormonal harmony, reproductive function, and overall vitality.[4] Many medicinal plants are classified as phytoestrogenic or phytoprogesteronic due to their hormone-regulating properties.[7] They are used not only for treating specific conditions but also for maintaining general well-being. Adaptogenic herbs like ashwagandha and rhodiola have shown benefits in alleviating stress and enhancing mood.[9]

Herbal remedies continue to be an essential part of both rural and urban women's health and beauty practices. A variety of herbal and Ayurvedic solutions are available for managing issues such as urinary tract infections, puberty-related changes, postmenopausal symptoms, hot flashes, PCOS, vaginal infections, fertility issues, insufficient lactation, and complications during labour. This knowledge is often passed down from mothers to daughters, preserving the cultural wisdom of plant-based healing. Like the phases of the moon, women's bodies follow cyclical patterns.[7]

Botanical therapies have proven effective in balancing hormones and alleviating associated symptoms. For example, Pumpkin seeds, a widely used herbal remedy, has been shown to improve hormone imbalance and egg equality in women, thereby promoting reproductive health.[5] For centuries, various plants have been used to support fertility and regulate the menstrual cycle.

Women's reproductive health plays a pivotal role in physical, psychological, and social well-being. Reproductive disorders such as menstrual irregularities, infertility, and polycystic ovary syndrome (PCOS) are highly prevalent and significantly impair quality of life. Modern biomedical science has established that endocrine function, hormonal fluctuations, and metabolic status are closely interlinked with reproductive health. Nutritional modulation has

been recognized as an important strategy in maintaining hormonal balance and ovarian function.

Ayurveda, the traditional Indian system of medicine, emphasizes ahara (diet) as one of the primary determinants of reproductive health, forming a component of Garbha-sambhava Samagri (essential factors for conception). Seeds such as pumpkin (Cucurbita pepo), fenugreek (Trigonella foenum-graecum), and flax (Linum usitatissimum) are described in Ayurvedic and modern literature as potent functional foods with reproductive benefits. These seeds contain phytoestrogens, essential fatty acids, and micronutrients that influence ovulatory cycles, menstrual regulation, and fertility.

This paper explores the convergence of Ayurvedic principles and modern pharmacological insights regarding the role of selected seeds in women's reproductive health.

AYURVEDA AND DISORDERS IN REPRODUCTIVE LIFE

Ayurveda, often referred to as the "science of life" or a holistic approach to living, offers a comprehensive perspective on women's health, especially in relation to menstrual concerns. This traditional system of medicine recognizes the importance of different stages in a woman's life—such as menstruation, pregnancy, menopause, and aging—and provides methods to manage the issues that arise during these phases. According to Ayurveda, a woman's health is closely linked to the equilibrium of the three Doshas—Vata, Pitta, and Kapha—which influence her hormonal activity, metabolism, and reproductive system.

In Ayurvedic thought, menstruation is seen as a vital yet delicate process that must occur with regularity and proper timing. Disruptions in the Doshas can result in irregular periods or menstrual problems. These imbalances can also be triggered by emotional stress, lifestyle habits, or mental strain.

Menstrual disorders are interpreted differently in Ayurveda compared to Western medicine. The major types include excessive bleeding, backward menstrual flow, improper blood movement downward, and reduced menstrual flow. Ayurveda attributes the root causes of such disorders to three key factors: intellectual errors, misuse of sensory input, and an inability to adjust to change. When the balance among the Doshas is disturbed, it can lead to menstrual irregularities.

Treatment in Ayurveda aims to restore harmony among the Doshas and eliminate the underlying cause of the disorder. Practitioners use a combination of herbal remedies and therapeutic practices to help the body regain its natural balance. Once equilibrium is restored, the normal functioning of the body resumes, and symptoms are relieved.[10]

CONCEPTS AND PRINCIPLES OF AYURVEDA

Ayurveda views health not merely as the absence of illness but as a balanced state of the mind, body, and spirit in alignment with nature. Disease, from this perspective, arises when this harmony is disrupted. A foundational concept in Ayurvedic philosophy is that each person has a unique constitution, known as *Prakriti*, which is shaped by the individual balance of the three Doshas—Vata, Pitta, and Kapha.[11] This constitution is established at conception and remains unchanged throughout life. When one Dosha becomes dominant or imbalanced, it may lead to specific health conditions, including menstrual disorders.

Understanding both normal and abnormal menstrual patterns is essential in Ayurvedic practice for diagnosing and treating related conditions. Recognizing a woman's unique *Prakriti* helps practitioners tailor treatments more effectively, particularly for menstrual irregularities. The Ayurvedic approach to health maintenance includes three primary elements: *Ahara* (diet), *Vihara* (lifestyle or daily routine), and *Aushadha* (medicines or herbs).

Several classical Ayurvedic texts reference herbs that are traditionally used for addressing menstrual health issues. These natural remedies are known for their safety and efficacy in managing menstrual disorders. Overall well-being is believed to influence menstrual function, and restoring systemic health is considered key to resolving conditions like *Artavakshaya* (scanty menstruation), *Kshina Shukra* (reduced reproductive fluid), and *Rasa Kshaya* (depletion of vital fluids). The findings from various reviews suggest that Ayurvedic herbal treatments hold promise in effectively supporting menstrual health.[10]

AIM AND OBJECTIVES

Aim: To evaluate the benefits of selected herbal seeds in supporting reproductive health among women of reproductive age.

OBJECTIVES

- To explore Ayurvedic references regarding the use of pumpkin, fenugreek, and flax seeds.
- To evaluate the pharmacological actions and therapeutic indications of these seeds in relation to reproductive health.
- To integrate modern biomedical evidence with Ayurvedic perspectives.
- To identify safety considerations and propose clinical applicability.

MATERIALS AND METHODS

This review is based on qualitative analysis of Ayurvedic texts and contemporary scientific sources.

- Literary Sources: Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, Kashyapa Samhita, Bhavaprakasha and other Nighantus.
- Databases: PubMed, AYUSH Research Portal, Google Scholar. Inclusion Criteria: Ayurvedic texts referencing reproductive health, seeds with therapeutic indications, and peer-reviewed pharmacological data.
- Exclusion Criteria: Polyherbal formulations, non-Ayurvedic approaches, and secondary care not directly linked to reproductive health.

BENEFITS OF HERBAL SEEDS WITH THEIR PHARMACOLOGICAL INSIGHTS:

Seeds	Name	Rasa	Vipaka	Virya	Guna	Karma
Pumpkin seeds	Benincasa hispida (Kushmanda)	Madhur	Madhur	Shita	Laghu, snigdha	Vatpittashamaka, Vrishya[12] Garbhasthapana[13]
Fenugreek seeds	Trigonella foenum (Methika)	Katu	Katu	Ushna	Laghu Snigdha	Vatashamaka, Raktapravartana[15], Stanyajanana[16]
Flaxseeds	Linum usitatissimum (Atasi)	Madhur, Tikta	Katu	Ushna	Guru, Snigdha, pichhila	Vatshamaka[20], Stanyajanan[24]

comparative table showing the relationship between modern scientific insights and Ayurvedic insights regarding the use of pumpkin seeds, fenugreek seeds, and flaxseeds for women in their reproductive age**.**

Seed	Modern Insight	Ayurvedic Insight	Common Ground
Pumpkin Seeds (*Kushmanda beej*)	Rich in zinc, magnesium, and antioxidants; supports hormonal balance**,**	Considered Balya (strengthening), Garbhasthapana (supports pregnancy), and Vrishya	Both value pumpkin seeds for hormonal regulation**,** fertility**,** and cycle support

	improves egg quality, and relieves PMS symptoms.[25]	(fertility-enhancing)[12]; pacifies Vata & Pitta.[13]	
Fenugreek Seeds (*Methika*)	Contains phytoestrogens, improves menstrual regularity[26] supports lactation[27], and helps in PCOS management	Described as Raktapravartini (stimulates menstruation)[15], Stanya-vardhaka (increases breast milk)[16],garbhastapak[24], and pacifying[18]	Both support cycle regulation**,** fertility[17]**,** and postpartum care
Flaxseeds (*Atasi*)	Contains lignans (phytoestrogens) and omega-3s[28]; supports hormonal balance**,** fertility**,** and helps manage PCOS & PMS	Recognized as Snigdha**,** Balya**,** Brimhana[19], Vataghni (Vata-pacifying)[20], supports shukra dhatu (reproductive tissue)[21] and yoni roga hara[22]	Both recognize flaxseeds for reproductive nourishment**,** hormonal balance[23], and Vata regulation

DISCUSSION

The application of herbal seeds represents a simplified yet impactful approach to managing health during the reproductive phase. This method offers numerous advantages, including ease of preparation, affordability, and reduced potential for adverse interactions. By focusing on individual herbs, particularly in seed form, practitioners are better able to observe therapeutic responses and tailor interventions to meet specific needs. Classical Ayurvedic literature emphasizes the importance of regulating hormonal balance in women for their healthy life. For example, Pumpkin seeds are known to hormonal balance and relieve PMS; Fenugreek seeds support lactation and increase breast milk. These seeds and herbal components offer divrse therapeutic effects and can be incorporated into the diet or administered in forms such as powders (churna), decoctions (kwatha), or medicated ghee (ghrita).

In clinical settings, the use of herbal seeds allows for precise dosage management and responsiveness to individual physiological conditions, which is especially important during the sensitive reproductive period. This approach reduces the complexity and potential risks linked with multi-herb combinations, which may cause interactions with modern pharmaceuticals, varied dietary patterns, or individual sensitivities. Additionally, employing single-herb seed therapies supports ecological sustainability, requiring fewer resources and contributing to the conservation of medicinal plants. In rural or resource-limited settings where access to complex formulations may be constrained, the use of readily available herbal seeds becomes a practical and effective alternative.

Nonetheless, several challenges hinder broader adoption of this method, including inconsistencies in herb quality, absence of standardized dosing protocols, and a shortage of contemporary clinical studies validating their use during the reproductive phase. To maximize the potential of herbal seed applications, further empirical research, formal training for healthcare providers, and strategic integration into modern postnatal care frameworks are essential. Continued investigation and interdisciplinary collaboration are necessary to establish standardized guidelines, confirm therapeutic outcomes, and reinforce the role of these traditional remedies in contemporary maternal healthcare.

Nutritional interventions using functional seeds offer promising adjunctive strategies for improving reproductive health. From a biomedical perspective, flaxseed lignans exert selective estrogen receptor modulation, pumpkin seeds provide zinc essential for folliculogenesis, and fenugreek enhances insulin sensitivity—critical in PCOS pathophysiology. These mechanisms correspond with Ayurvedic descriptions of Vrishya, Garbhasthapana, and Raktapravartana actions.

Single-herb seed use is advantageous in terms of accessibility, safety, and cost-effectiveness. Moreover, dietary inclusion aligns with the Ayurvedic principle of ahara as the foundation of health. However, challenges include standardization of dosage, variability in seed phytochemical composition, and limited clinical trials specifically evaluating seed cycling in women of reproductive age.

Future directions should include randomized controlled trials to establish efficacy, mechanistic studies linking phytoestrogens with hypothalamic-pituitary-ovarian axis regulation, and integrative protocols combining diet, lifestyle, and herbal interventions.

CONCLUSION

Sedentary lifestyle is a key factor and high intake of calories is promoting is day by day. Seed cycling approach is a traditional approach to maintain hormonal balance in females of reproductive age. The set of seeds (flax, pumpkin, fenugreeks) have antioxidants, omega 3 & 6 fatty acids, protein, carbohydrates, fiber, zinc, potassium, phosphorus, and magnesium and high levels of other trace minerals (calcium, sodium, manganese, iron, zinc, and copper) that promotes normal hormonal levels of progesterone in females. The accuracy of progesterone levels in females; also correct the fluctuated value of LH, FSH, which indicates the condition of PCOS. Seed cycling also improve TSH, prolactin level in blood that correlate the weight

gain among females with PCOS. The study provides positive changes regarding the hormonal issue in females and significant results describe the capability and efficacy of the study for this condition. Therefore, by using the approach of seed cycling we can handle the highly prevailing condition of PCOS, Dysmenorrhea, etc among the females of reproductive age. Further studies have to be done to explore the effect of seed cycling in women's reproductive phase for its clinical application.

Functional seeds such as pumpkin, fenugreek, and flax represent a convergence of Ayurvedic wisdom and modern biomedical science in reproductive health management. These seeds contribute to hormonal regulation, improved ovulatory function, and management of conditions like PCOS and dysmenorrhea.

The concept of seed cycling, an emerging dietary approach, resonates with Ayurvedic principles of cyclical balance and dosha regulation. Rich in antioxidants, omega-3 fatty acids, phytoestrogens, and essential minerals, these seeds hold potential as safe, accessible, and culturally acceptable interventions for women's reproductive health.

Further well-designed clinical studies are necessary to validate traditional claims, establish standardized protocols, and integrate these practices into modern gynecological care.

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    COMPREHENSIVE REVIEW

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11. A CRITICAL ANALYSIS ON THE CONCEPT OF PRAKRITI AND ITS CLINICAL UTILITY IN HUMAN BEINGS

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