



ORIGINAL ARTICLE

Formulation & Evaluation of polyherbal Tonic for the treatment of Women's Reproductive Disorders

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ABSTRACT

The present study focused on the formulation and post-formulation evaluation of a polyherbal tonic developed from five Ayurvedic medicinal herbs — Saraca asoca (Ashoka), Asparagus racemosus (Shatavari), Symplocos racemosa (Lodhra), Tinospora cordifolia (Guduchi), and Cinnamomum verum (Cinnamon) — for the management of women's reproductive disorders including PCOS, dysmenorrhea, menstrual irregularity, pelvic inflammatory disease, and endometriosis. Three formulation batches (F1, F2, F3) were prepared by aqueous decoction of individual herb powders at a 1:16 drug-to-water ratio, combined in varying proportions, and supplemented with lemon juice, stevia, and sodium benzoate as functional excipients, made up to 100 ml with purified water. Post-formulation evaluation parameters including organoleptic properties, pH, viscosity, and clarity were assessed for all three batches. All formulations exhibited a mildly acidic pH of 4.0, viscosity values ranging from 1.140 to 1.270 cP, and characteristic colour progression from light orange (F1) to dark orangish brown (F3), with a sour-sweet taste and sweet aromatic odour. All three batches appeared turbid, consistent with the crude nature of polyherbal liquid preparations. The findings confirm the feasibility of developing a quality-consistent, multi-targeted polyherbal tonic as a potential plant-based therapeutic option for women's reproductive health.

Keywords: Polyherbal tonic; Saraca asoca; Asparagus racemosus; Symplocos racemosa; Tinospora cordifolia; Cinnamomum verum; Women's reproductive disorders; post-formulation evaluation; pH; Viscosity.

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INTRODUCTION

The female reproductive system is a complex and highly coordinated network of organs and structures responsible for the production of ova, facilitation of fertilization, support of fetal development, and regulation of reproductive hormones. It functions under the precise control of the hypothalamic-pituitary-ovarian (HPO) axis, which governs the cyclical hormonal changes underlying menstruation, ovulation, and fertility. The system is anatomically divided into internal reproductive organs, external genitalia, and accessory structures, all of which work in concert to support reproductive function throughout a woman's life (Dwivedi et al., 2023).

Women's reproductive health is a fundamental aspect of overall well-being, encompassing the proper functioning of the female reproductive system across all stages of life — from puberty through the reproductive years to menopause. Despite advances in modern medicine, reproductive disorders remain one of the most prevalent and undertreated health challenges affecting women globally. The World Health Organization estimates that hundreds of millions of women worldwide suffer from at least one reproductive health condition during their lifetime, with the burden being disproportionately higher in developing nations including India (Shriwas et al., 2021).

PLANT PROFILES OF HERBS USED IN THE FORMULATION

Ashoka — *Saraca asoca* (Roxb.) Willd.

Parameter	Details
Biological Name	<i>Saraca asoca</i> (Roxb.) De Wilde
Family	Caesalpiniaceae (Leguminosae)
Common Synonyms	Ashoka, Sorrowless Tree
Sanskrit Names	Ashoka, Hemapushpa, Apashoka
Hindi Name	Ashok
Biological Source	Dried stem bark of <i>Saraca asoca</i>
Region	Sub-Himalayan tracts, Western Ghats, Assam, Odisha, Sri Lanka

Phytochemical Constituents: Catechol tannins, glycosides (11-O-galloylbergenin), flavonoids (quercetin, kaempferol), leucoanthocyanins, β -sitosterol, and haematoxin.

Therapeutic Actions: Acts as a uterine tonic and hemostatic agent, reduces uterine bleeding and relieves dysmenorrhea through estrogenic and anti-inflammatory activity (Dwivedi et al., 2008).

Shatavari — *Asparagus racemosus* Willd.

Parameter	Details
Biological Name	<i>Asparagus racemosus</i> Willd.
Family	Asparagaceae
Common Synonyms	Shatavari, Wild Asparagus, Satavar
Sanskrit Names	Shatavari, Bahusuta, Narayani, Indivari
Hindi Name	Satavar, Satawar
Biological Source	Dried tuberous roots of <i>Asparagus racemosus</i>
Region	Himalayas (up to 1,500 m), Rajasthan, Madhya Pradesh, Maharashtra, Sri Lanka

Phytochemical Constituents: Steroidal saponins (Shatavarin I–IV), isoflavones, mucilage, polysaccharides, vitamins (A, B1, B2, C, E), zinc, and manganese.

Therapeutic Actions: Exerts phytoestrogenic activity to regulate menstrual cycles and normalize HPO axis function; acts as an adaptogen reducing stress-induced hormonal imbalances (Dwivedi et al., 2008).

Lodhra — *Symplocos racemosa* Roxb.

Parameter	Details
Biological Name	<i>Symplocos racemosa</i> Roxb.
Family	Symplocaceae
Common Synonyms	Lodhra, Lodh Tree
Sanskrit Names	Lodhra, Rodhra, Tilvaka, Stri-priya
Hindi Name	Lodh, Lodhra
Biological Source	Dried stem bark of <i>Symplocos racemosa</i>
Region	Sub-Himalayan forests, Assam, Bengal, Odisha, Bihar, Sri Lanka

Phytochemical Constituents: Alkaloids (loturine, colloturine, loturidine), tannins, flavonoids (rutin, quercetin), betulonic acid, β -sitosterol, and saponins.

Therapeutic Actions: Reduces elevated LH levels and normalizes LH:FSH ratio in PCOS; tones uterine musculature and reduces pathological vaginal discharge through astringent tannins (Dwivedi et al., 2008).

Guduchi — *Tinospora cordifolia* (Willd.) Miers

Parameter	Details
Biological Name	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook. f. & Thomson
Family	Menispermaceae
Common Synonyms	Guduchi, Giloy, Heart-leaved Moonseed
Sanskrit Names	Guduchi, Amrita, Chakralakshana, Soma
Hindi Name	Giloy, Gurcha
Biological Source	Dried stem of <i>Tinospora cordifolia</i>
Region	Throughout India (up to 1,200 m), Sri Lanka, Myanmar; commonly found climbing on Neem and Mango trees

Phytochemical Constituents: Alkaloids (berberine, palmatine, magnoflorine), diterpenoid lactones (tinoporide, columbin), glycosides (giloin, giloinin), polysaccharides, and β -sitosterol.

Therapeutic Actions: Modulates immune function and reduces chronic inflammation associated with PCOS; improves insulin sensitivity and mitigates oxidative stress in reproductive tissues.

Cinnamon — *Cinnamomum verum* J.Presl

Parameter	Details
Biological Name	<i>Cinnamomum verum</i> J.Presl
Family	Lauraceae
Common Synonyms	True Cinnamon, Ceylon Cinnamon
Sanskrit Names	Tvak, Daruchini, Tanuja
Hindi Name	Dalchini
Biological Source	Dried inner bark of <i>Cinnamomum verum</i>
Region	Native to Sri Lanka; cultivated in Kerala, Karnataka, Madagascar, and Southeast Asia

Phytochemical Constituents: Volatile oil (cinnamaldehyde 65–75%, eugenol, linalool), proanthocyanidins, catechins, tannins, and diterpenes (cinnzeylanol, cinnzeylanine).

Therapeutic Actions: Improves insulin sensitivity and reduces androgen levels in PCOS; relieves uterine spasms and dysmenorrhea through antispasmodic and anti-inflammatory activity (Dwivedi et al., 2008).

MATERIAL AND METHODS

S.No.	Ingredients	Role
1.	Ashoka, Shatavari, Guduchi, Lodhra & Cinnamon	Active Pharmaceutical Ingredients
2.	Lemon juice	pH adjuster, Preservative
3.	Stevia	Sweetener
4.	Sodium benzoate	Preservative

Collection

The herbal crude drugs (Ashoka, Shatavari, Guduchi & Lodhra) were collected from the Gopal Churna Bhandar, Marothiya Bazar, Indore (M.P.) and (Cinnamon) from Sindh kirana Store.

Extraction

The crude drugs were extracted by the decoction methods with the 1:16 ratio, after decoction the Filtered was collected for the formulation of tonic (Shahi et al., 2026).

Drug and Excipient profile

Saraca asoca (Ashoka) — Bark

Biological source — Dried stem bark of *Saraca asoca* (Roxb.) De Wilde

➤ **Family** — Caesalpinaceae (Leguminosae)

➤ **Morphology:**

- **Appearance** — Occurs in flat, curved, or channelled pieces; outer surface rough and uneven with longitudinal striations and occasional warty protuberances
- **Size** — Bark pieces range from 2–8 cm in length and 2–5 mm in thickness
- **Margin** — Irregular, slightly uneven at the broken ends
- **Surface** — Outer surface greyish-brown to dark brown, rough and scaly; inner surface smooth, reddish-brown with longitudinal striations
- **Colour** — Externally greyish-brown to dark brown; inner surface deep reddish-brown
- **Taste** — Astringent and slightly bitter

Asparagus racemosus (Shatavari) — Root

Biological source — Dried tuberous roots of *Asparagus racemosus* Willd.

➤ **Family** — Asparagaceae

➤ **Morphology:**

- **Appearance** — Long, tapering, finger-shaped tuberous roots, occurring in clusters; slightly tapering at both ends; sometimes longitudinally wrinkled when dried
- **Size** — 30–100 cm in length and 1–2 cm in diameter
- **Margin** — Smooth tapering ends, occasionally broken or cut transversely
- **Surface** — Outer surface pale yellowish-white to cream-coloured with fine longitudinal striations and occasional transverse cracks
- **Colour** — Externally pale yellowish-white to buff; internally white to cream
- **Taste** — Sweet, mucilaginous, and slightly bitter on prolonged chewing

Symplocos racemosa (Lodhra) — Bark

Biological source — Dried stem bark of *Symplocos racemosa* Roxb.

➤ **Family** — Symplocaceae

➤ **Morphology:**

- **Appearance** — Occurs in flat, curved, or quilled pieces; outer surface marked with prominent lenticels and shallow longitudinal fissures; fracture short and fibrous
- **Size** — Bark pieces 5–15 cm in length and 3–6 mm in thickness
- **Margin** — Irregular and slightly fibrous at broken edges
- **Surface** — Outer surface greyish-brown, rough with prominent lenticels; inner surface smooth to slightly striated, light yellowish-brown
- **Colour** — Externally greyish-brown; inner surface pale buff to light yellowish-brown
- **Taste** — Astringent and slightly acrid

***Tinospora cordifolia* (Guduchi) — Stem**

Biological source — Dried stem of *Tinospora cordifolia* (Willd.) Miers ex Hook. f. & Thomson

➤ **Family** — Menispermaceae

➤ **Morphology:**

- **Appearance** — Cylindrical, succulent, fleshy stem with characteristic fleshy aerial roots hanging from the branches; cork soft and papery, peeling off easily; fracture short and starchy
- **Size** — Stem 5–30 mm in diameter; cut into pieces of 2–10 cm in length for crude drug use
- **Margin** — Circular in transverse section; edges irregular and slightly fibrous when broken
- **Surface** — Outer surface grey to creamy-white with prominent, irregular, warty lenticels giving a typical tuberculated appearance; inner surface greenish-white, starchy
- **Colour** — Externally greyish-white to creamy-white; cut surface greenish-white with prominent starch
- **Taste** — Bitter and mucilaginous

***Cinnamomum verum* (Cinnamon) — Bark**

Biological source — Dried inner bark of *Cinnamomum verum* J. Presl

➤ **Family** — Lauraceae

➤ **Morphology:**

- **Appearance** — Occurs in compound quills — thin, papery layers rolled into tight, neat, telescoping quills; multiple thin inner bark layers fitted one inside the other; fracture short and splintery
- **Size** — Quills 50–100 cm in length and 1–2 cm in diameter; individual bark layers 0.2–0.4 mm thick
- **Margin** — Smooth, neatly rolled ends; occasionally broken or cut giving irregular cross-sectional margins
- **Surface** — Outer surface pale yellowish-brown to tan, smooth with fine longitudinal striations; inner surface slightly darker, smooth
- **Colour** — Pale yellowish-brown to light tan externally; inner surface slightly darker cinnamon-brown
- **Taste** — Characteristic warm, sweet, and aromatic; slightly pungent and spicy

Lemon Juice — *Citrus limon* (L.) Burm. f.

Biological source — Fresh juice extracted from the ripe fruit of *Citrus limon* (L.) Burm. f.

➤ **Family** — Rutaceae

➤ **Morphology:**

- **Appearance** — Clear to slightly turbid, mobile liquid; freshly squeezed juice may contain fine suspended pulp particles
- **Size** — Not applicable (liquid)
- **Margin** — Not applicable (liquid)
- **Surface** — Not applicable (liquid)
- **Colour** — Pale yellow to colourless
- **Taste** — Strongly acidic, sharp, and characteristically sour due to high citric acid content (5–8%); slightly bitter aftertaste from limonin.

***Stevia rebaudiana* (Bertoni) Bertoni**

Biological source — Dried leaves of *Stevia rebaudiana* (Bertoni) Bertoni; active sweetening constituents are steviol glycosides (stevioside and rebaudioside A) extracted from the leaves

➤ **Family** — Asteraceae (Compositae)

➤ **Morphology:**

- **Appearance** — Commercially available as white to off-white fine crystalline powder (purified extract) or as dried, serrated, pale green leaves in crude form
- **Size** — Leaves 3–7 cm in length and 1.5–3 cm in width; powder particle size varies by grade
- **Margin** — Leaf margin serrated to crenate with coarsely toothed edges
- **Surface** — Leaf surface slightly rough, pubescent (hairy) on both surfaces; powder surface smooth and crystalline

- **Colour** — Dried leaves pale green to greenish-brown; purified extract powder white to off-white
- **Taste** — Intensely sweet — approximately 200–300 times sweeter than sucrose; characteristic slight liquorice-like or menthol aftertaste at higher concentrations.

Sodium Benzoate

Biological source — Synthetically prepared sodium salt of benzoic acid; chemically sodium benzoate ($C_7H_5NaO_2$); used as an antimicrobial preservative in pharmaceutical liquid formulations

➤ **Family** — Not applicable (synthetic excipient)

➤ **Morphology:**

- **Appearance** — White, granular or crystalline powder; odourless or with a faint characteristic odour; freely soluble in water
- **Size** — Fine granular powder; particle size typically less than 250 μm in pharmaceutical grade
- **Margin** — Not applicable (powder)
- **Surface** — Smooth, glistening crystalline surface under magnification
- **Colour** — White to off-white
- **Taste** — Slightly sweet, then saline and astringent; unpleasant at higher concentrations, hence used at low levels (0.1–0.2% w/v in oral liquids)

Preparation of formulation

- The crude drug powder were kept for the decoction separately in Beaker on the Heating plate in a 1:16 (drug & water) as per standards until the decoction was reduced to the $\frac{1}{4}$ of the volume.
- After the Decoction process the extract were cooled and filter using muslin cloth to remove the solid residue and the filtered was collected for the further formulation.
- The filtered were measured using a 100ml measuring cylinder and 10ml measuring cylinder for accurate measurement and all the extract of Herbs were mixed in a particular quantity for each formulation.
- Then 5ml Lemon juice was added to the mixture of extract with the purpose of natural pH adjustment, Along with the 1gm Stevia for the natural sweetener for the polyherbal tonic.
- Lastly 0.01gm Sodium benzoate was added to the tonic to prevent it from microbial contamination.

The polyherbal tonic was prepared in three formulation batches (F1, F2, and F3) with varying volumes of individual herb extracts, as presented in the table below. The crude drug powders of Ashoka, Shatavari, Lodhra, Guduchi, and Cinnamon were separately subjected to decoction in a 1:16 drug-to-water ratio on a heating plate until the volume was reduced to one-fourth of the original. The decoctions were allowed to cool and subsequently filtered through muslin cloth to remove solid residues, and the clear filtrates were collected for further processing. The filtered extracts were accurately measured using 100 ml and 10 ml measuring cylinders and combined in specified quantities for each formulation batch. To the combined extract mixture, 5 ml of lemon juice was incorporated as a natural pH-adjusting agent, along with 1 gm of stevia as a natural sweetening excipient to improve palatability of the tonic. Finally, 0.01 gm of sodium benzoate was added to each formulation as a preservative to prevent microbial contamination and ensure adequate shelf life. Purified water was added as Q.S. to make up the final volume to 100 ml for each of the three formulations (Kapadia et al., 2009).

Ingredient	Quantity		
	F1	F2	F3
Ashoka Extract(ml)	15	16	16
Shatavari Extract (ml)	15	14	15
Lodhra Extract (ml)	15	16	14
Guduchi Extract (ml)	15	13	13
Cinnamon Extract (ml)	15	16	17
Lemon Juice (ml)	5	5	5
Stevia (gm)	1	1	1
Sodium Benzoate (gm)	0.01	0.01	0.01
Purified Water (ml)	Q.S.	Q.S.	Q.S.
Total Volume (ml)	100	100	100

Table 01: Formulation Table of Polyherbal Tonic (F1, F2, F3)



Figure 1: Polyherbal Tonic (HERBALANZE)

Post-Formulation Evaluation (Ramchandra et al., 2025)

Organoleptic Evaluation

The prepared polyherbal tonic was evaluated for its organoleptic properties including colour, odour, taste, and appearance by visual and sensory examination under standard laboratory conditions. Any change in these characteristics such as discolouration, off-odour, or precipitation was recorded as an indicator of instability or quality deviation.

pH Determination

The pH of the polyherbal tonic was measured using a pre-calibrated digital pH meter by directly immersing the electrode into the preparation at room temperature. The reading was recorded in triplicate and the mean value was reported to assess the acidic or alkaline nature of the formulation, which is critical for stability and palatability.

Viscosity

The viscosity of the polyherbal tonic was determined using an Ostwald viscometer by measuring the efflux time of the formulation relative to that of water at room temperature (25°C). The relative viscosity was calculated from the ratio of efflux times, and the values were recorded in centipoise (cP) to characterize the flow behavior of the formulation, ensuring batch-to-batch consistency in pourability and dose uniformity. The formula used for calculating relative viscosity using an Ostwald viscometer is:

$$\eta_{\text{sample}} = \frac{t_{\text{sample}}}{t_{\text{water}}} \times \eta_{\text{water}}$$

Where:

η_{sample} = Viscosity of the sample (cP)

t_{sample} = Efflux time of the sample (seconds)

t_{water} = Efflux time of water (seconds)

η_{water} = Viscosity of water at 25°C = 0.890 cP

Clarity

The clarity of the polyherbal tonic was assessed by visual inspection against a black and white background under a good source of illumination. The formulation was examined for the presence of any visible particulate matter, turbidity, or haziness, and the result was recorded as clear, slightly turbid, or turbid to reflect the overall physical quality of the preparation (Mukherjee, 2022; Sharma et al., 2015).

RESULT AND DISCUSSION

Post-Formulation Evaluation

Organoleptic Properties

All three formulations displayed acceptable organoleptic characteristics consistent with their herbal composition. The colour progressively deepened from light orange in F1 to dark orangish brown in F3, likely reflecting increasing concentrations of herb extracts across the formulations. The taste of all preparations was characteristically sour and sweet, attributable to the presence of lemon juice and stevia respectively, while the sweet aromatic odour observed in F3 suggests a more pronounced contribution of Cinnamon (*Cinnamomum verum*) at higher concentration. No off-odour or unpleasant taste was recorded, indicating satisfactory organoleptic quality of all three formulations.

Parameter	F1	F2	F3
Colour	Light orange	Orange	Dark orangish brown
Taste	Sour & sweet	Sour & sweet	Sour
Odour	Sweet	Sweet	Sweet aromatic
Appearance	Turbid	Turbid	Turbid

Table 02: Organoleptic properties of Polyherbal Tonic (F1, F2, F3)

pH determination

The pH of all three formulations (F1, F2, and F3) was recorded as **4.0**, indicating a mildly acidic nature. This is consistent with the presence of lemon juice as an acidifying excipient in the formulation, and falls within an acceptable range for oral liquid preparations, supporting both palatability and microbial stability of the tonic.

Formulation	pH
F1	4.0
F2	4.0
F3	4.0

Table 03: pH determination of Polyherbal tonic (F1, F2, F3)

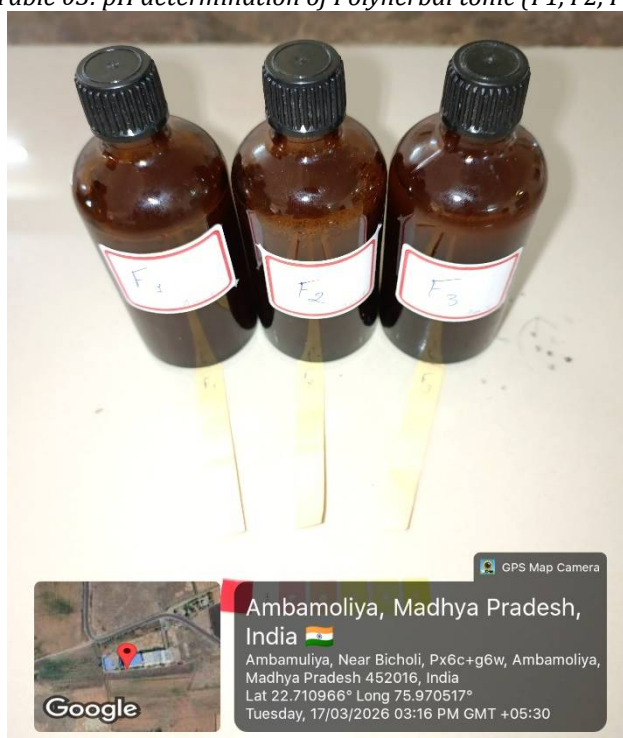


Figure 02: pH determination of Polyherbal tonic

Viscosity

All three formulations showed viscosity values slightly above water, which is consistent with a liquid tonic preparation and indicates acceptable pourability and flow for oral administration.

Table 04: Viscosity of Polyherbal Tonic (F1, F2, F3)

Formulation	Mean Flow Time (s)	Mean Viscosity (cP)
F1	45.67	1.270
F2	41.00	1.140
F3	44.33	1.233
Water	32.00	0.890

Clarity

All three formulations (F1, F2, and F3) appeared turbid upon visual inspection against black and white backgrounds under adequate illumination. The turbidity observed is attributable to the presence of fine micro-particles of crude drug extracts dispersed throughout the preparation, which is a characteristic and expected feature of polyherbal liquid formulations prepared from unrefined plant extracts. This finding does not indicate instability but rather reflects the nature of the raw herbal materials used.

Formulation	Clarity
F1	Turbid
F2	Turbid
F3	Turbid

Table 05: Clarity test for Polyherbal Tonic (F1, F2, F3)



Figure 03: Clarity of polyherbal tonic

CONCLUSION

The present investigation was carried out with the objective of formulating and evaluating a polyherbal tonic comprising five pharmacologically complementary Ayurvedic herbs — *Saraca asoca* (Ashoka), *Asparagus racemosus* (Shatavari), *Symplocos racemosa* (Lodhra), *Tinospora cordifolia* (Guduchi), and *Cinnamomum verum* (Cinnamon) — targeting major women's reproductive disorders including PCOS, dysmenorrhea, menstrual irregularity, pelvic inflammatory disease, gonorrhea, and endometriosis. The rationale for combining these herbs was based on their well-documented synergistic roles in modulating the HPO axis, exhibiting phytoestrogenic and anti-androgenic activity, reducing pelvic inflammation, improving insulin sensitivity, and exerting hemostatic and uterotonic effects — collectively addressing multiple pathophysiological mechanisms underlying female reproductive dysfunction. Three formulation batches (F1, F2, F3) were successfully prepared by aqueous decoction of each herb in a 1:16 drug-to-water ratio, with the filtrates combined in varying proportions and supplemented with lemon juice (pH adjuster), stevia (sweetener), and sodium benzoate (preservative), made up to 100 ml with purified water. Post-formulation evaluation confirmed that all three formulations exhibited a consistent mildly acidic pH of 4.0, which is appropriate for oral liquid preparations and supports microbial stability. Viscosity values ranging from 1.140 to 1.270 cP indicated acceptable flow and pourability suitable for oral administration. Organoleptic assessment revealed a progressive deepening of colour from light orange in F1 to dark orangish brown in F3, with a characteristically sour-sweet taste and sweet aromatic odour, all of which are consistent with the herbal composition of the formulation. All three batches appeared turbid upon clarity testing, which is an inherent and expected characteristic of crude polyherbal liquid preparations containing unrefined plant extracts and does not reflect instability. Overall, the results of this study demonstrate the feasibility of developing a quality-consistent, multi-herb polyherbal tonic using simple aqueous decoction and natural excipients, providing a scientific basis for its further development as a safe, affordable, and effective plant-based therapeutic option for women's reproductive health.

REFERENCES

- Dwivedi, S., Patil, V. S., Saxena, J., Gangwal, A., Shrivastava, D., & Chhajed, M. (2023). Formulation and evaluation of herbal cream for the treatment of vaginal candidiasis. *Euro. Chem. Bull*, 12(1), 586-593.
- Kapadia, R., Dwivedi, S., Dwivedi, A., Pandey, S., & Barpete, P. K. (2009). Polyherbal Formulation used in the Treatment of Jaundice. *Ethnobotanical Leaflets*, 2009(1), 9.
- Ramachandran, K. O. P. P. E. R. U. N. D. E. V. I., Karunanithi, S. H. A. L. I. N. I., & Narayanasamy, D. A. M. O. D. H. A. R. A. N. (2025). Standardization of an ayurvedic polyherbal liquid formulation with improved palatability for the management of anemia. *Int J Appl Pharm*, 17(5), 444-453.
- Mukherjee PK. (2002). *Quality Control of Herbal Drugs*. Business Horizons Pharmaceutical Publishers, New Delhi. pp. 356-358.
- Shriwas, S., Chouksey, R., & Dwivedi, S. (2021). Anti-Candida activity of few India Medicinal herbs used in the treatment of Gynecological disorders. *Research Journal of Pharmacy and Technology*, 14(4), 2185-2187.
- Sharma, C. S., Saxena, M. J., Ravikanth, K., & Dhamu, N. (2015). Comparative efficacy evaluation of polyherbal liver tonics as a co-therapy in clinical helminthiasis of Cattle. *World Journal of Pharmaceutical Sciences*, 208-213.

7. Shahi, S., Dubey, A., Kumar, Y., Gupta, P., Dwivedi, A., Chaturvedi, P., & Dwivedi, S. (2026). Isolation and Characterization of Novel Bioactive Compounds from Underexplored Aquatic Macrophytes. *Egyptian Journal of Aquatic Biology and Fisheries*, 30(2), 1037-1046.



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