

A COMPREHENSIVE REVIEW OF HERBO-MINERAL FORMULATION SELECTION IN *KUSHTHA CHIKITSA*: PRINCIPLES, PRAXIS, AND PHARMACOLOGICAL PERSPECTIVES

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ABSTRACT

Kushtha (a broad term encompassing various obstinate skin diseases including psoriasis, eczema, leucoderma, and leprosy) represents one of the most challenging clinical entities in medical science. Ayurveda, the ancient Indian system of medicine, offers a profound and multi-dimensional approach to its management, termed *Kushtha Chikitsa*. A cornerstone of this approach is the use of sophisticated herbo-mineral formulations (*Rasa Aushadhis*). These formulations, which integrate processed minerals and metals with herbal extracts, are prized for their high efficacy, low dosage, and rapid action in combating deep-seated pathologies. This review article systematically explores the fundamental principles governing the selection of specific types of herbo-mineral formulations—such as *Bhasma*, *Kupipakwa Rasayana*, *Parpati*, *Pottali* and others—in different presentations of *Kustha*. It delves into the Ayurvedic rationale based on *Doshic* predominance

(*Vataja*, *Pittaja*, *Kaphaja*), disease chronicity, and the patient's constitutional strength. Furthermore, the article examines the contemporary pharmacological understanding of these formulations, highlighting their immunomodulatory, antipruritic, keratolytic, and detoxifying properties. By synthesizing classical wisdom with modern scientific validation, this review aims to provide a structured framework for clinicians to rationally select herbo-mineral compounds, thereby optimizing therapeutic outcomes in the management of *Kushtha*.

KEYWORDS: *Kushtha Chikitsa*, Herbo-Mineral Formulations, *Rasa Shastra*, *Bhasma*, *Kupipakwa Rasayana*, *Parpati*, Psoriasis.

INTRODUCTION

The term *Kushtha* is derived from the Sanskrit root '*Kush*' meaning 'to embrace' or 'to take hold of', symbolizing the disease's obstinate, pervasive, and deeply rooted nature.^[1] Ayurvedic classics like *Charaka Samhita*, *Sushruta Samhita* and *Ashtanga Hridaya* provide exhaustive descriptions of *Kushtha*, classifying it primarily into *Mahakushtha* (7 major types) and *Kshudrakushtha* (11 minor types) based on the predominance of *Doshas* (bio-humors), the site of manifestation, and the characteristics of the lesions.^[2,3] This classification correlates with modern dermatological conditions: *Ek-kushtha* with psoriasis, *Pama* with eczema, *Svitra* with vitiligo, and *Dadru* with dermatophytosis, among others.^[4] The pathogenesis is deeply linked to the vitiation of all three *Doshas* (*Tridosha*), which in turn vitiate *Tvak* (skin), *Rakta* (blood), *Mamsa* (muscle), and *Ambu* (body fluids), leading to the diverse clinical presentations.^[5]

The Rationale for Herbo-Mineral Formulations in *Kushtha Chikitsa*

The management of *Kushtha* is complex due to its chronicity, recurrence, and deep-seated pathology. While *Panchakarma* bio-purification procedures (*Snehana*, *Swedana*, *Vamana*, *Virechana*, *Raktamokshana*) form the first line of attack to eliminate vitiated *Doshas*^[6], they are often followed or complemented by a robust internal medication regimen. Herbal drugs, though effective, may have limitations in penetrating the deepest tissues (*Khidvastha*) and overcoming the extreme *Dushti* (vitiation). This is where herbo-mineral formulations, a specialty of *Rasa Shastra* become indispensable.^[7] Their unique properties include:

- *Tikshna Guna* (Potent Property): Ability to break through the pathological barriers created by vitiated *Doshas* and *Ama* (toxins).
- *Sukshmatva* (Minuteness): Enhanced bioavailability and ability to act at a cellular level.^[8]
- *Kshara* and *Ushna Virya* (Alkaline and Hot Potency): Ideal for pacifying *Kapha* and *Vata*, the primary *Doshas* involved in *Kushtha*.
- *Vyavayi* and *Vikasi* (Spreading and Pervading Properties): Ensure systemic action and reach to every micro-channel (*Srotas*).

Objectives and Scope of the Review

This review aims to:

- Systematize the principles for selecting specific classes of herbo-mineral formulations based on Ayurvedic diagnosis.
- Detail key formulations from each class, their compositions, and specific indications in different *Kushtha* types.
- Correlate the traditional actions of these formulations with modern pharmacological understandings.
- Discuss critical safety protocols and address concerns regarding heavy metals.
- Propose an integrated model for rational, evidence-based clinical application.

Fundamental Principles of *Kushtha Chikitsa*

This section would elaborate on the Ayurvedic understanding of *Kusth* pathogenesis, emphasizing the impairment of *Agni* (digestive fire), formation of *Ama*, and sequential vitiation of *Doshas* and *Dhatus*. It would discuss the essential pre-therapeutic requirement of assessing the patient's strength (*Bala*) and the presence of *Ama* to decide between *Shodhana* (purification) and *Shamana* (palliation) therapy.^[2,5,6]

Overview of Herbo-Mineral Formulations (*Rasa Aushadhis*)

This section would provide a background on *Rasa Shastra*, explaining the rigorous processes of *Shodhana* (purification), *Marana* (incineration), and *Jarana* (amalgamation) that render toxic metals and minerals into therapeutically beneficial, non-toxic forms. It would classify the main types of formulations: *Bhasma*, *Kupipakwa Rasayana*, *Parpati*, *Pottali*, *Sindura* etc., explaining their general properties and manufacturing differences.^[9,10]

Rational Selection Based on Formulation Type and *Dosha*

This is the core section of the review.

Bhasma (Calcined Ash Preparations) -*Bhasmas* are fine, alkaline, calcined ashes with a particle size in the nano-range, possessing *Madhura Vipaka* (sweet post-digestive effect) and are generally well-tolerated.^[11]

Selection Criteria: They are selected based on the dominant *Dosha* and the target tissue (*Dhatu*). For example:

- *Abhrak Bhasma* (Mica Ash): A versatile *Rasayana* (rejuvenator) particularly useful in chronic *Vata-Pittaja Kustha* like psoriasis, where there is scaling (*Vata*) and inflammation (*Pitta*). It helps in tissue repair.^[12,13]
- *Yashada Bhasma* (Zinc Ash): Extremely effective in *Pittaja* and *Raktaja* conditions like weeping eczema and chronic ulcers due to its wound-healing and cooling properties. It targets *Meda Dhatu* (adipose tissue).^[14]
- *Mukta Bhasma* (Pearl Ash): A potent coolant, ideal for *Pittaja Kushtha* with burning sensation and intense inflammation. It pacifies *Pitta* in *Rakta* and *Mamsa Dhatu*.^[15]
- *Gandhak Bhasma* (Sulfur Ash): Highly effective in *Kaphaja Kushtha* like chronic, itchy, exudative lesions due to its drying, antimicrobial, and *Kaphahara* properties.^[16]

***Kupipakwa Rasayana* (Mercurial Preparations Processed in Glass Bottles)**

These are potent, heat-processed formulations where mercury and sulfur are transformed into a stable, bioactive compound.

Selection Criteria: Reserved for severe, chronic, and treatment-resistant *Kustha* where *Kapha* and *Vata* are massively aggravated. They are *Tikshna* (sharp) and *Ushna Virya* (hot in potency).^[17]

- *Rasasindoor*: The flagship mercurial preparation. It is a supreme *Rasayana* and *Yogavahi* (drug carrier). It is the drug of choice for *Ek-kushtha* (Psoriasis) and other *Mahakustha*, where it works by deeply pacifying *Vata* and *Kapha*, reducing scaling and promoting normal skin growth.^[18,19]
- *Mallasindoor*: Similar to *Rasasindoor* but processed with additional herbs like *Datura* and *Vacha*, making it even more potent for *Vata-Kaphaja* conditions with severe itching and thickening of the skin.^[20]

***Parpati Kalpana* (Thin Flake-like Preparations)**

These are prepared by pouring a molten mixture of purified mercury, sulfur, and other ingredients onto a plantain leaf or iron plate to form thin flakes.

Selection Criteria: Primarily indicated in *Grahanidosha* (malabsorption syndromes) and conditions where *Agni* (digestive fire) is severely impaired, often seen in chronic *Kushtha*

patients. They are brilliant *Deepana* (appetite stimulants) and *Pachana* (digestants) that clear *Ama*, which is a key perpetuating factor in *Kushtha*.^[21]

- *Rasa Parpati*: The basic formulation. Used when impaired digestion and *Ama* are significant contributors to the disease process.
- *Suvarna Parpati*: Contains gold. It is a powerful *Rasayana* used in debilitated patients with chronic *Vataja* or *Pittaja Kushtha* to strengthen the system and combat the disease simultaneously.^[22]

***Pottali Kalpana* (Mercury-Sulfur Bound Preparations)**

These are the most potent preparations, where the mixture is tightly bound in a cloth pouch and processed through intense heat.

Selection Criteria: Used as a last resort in extremely chronic, complicated, and debilitating cases of *Kushtha* that have not responded to other treatments. Their immense potency requires expert supervision and a very strong patient constitution.^[23]

Other Formulations

Lauha Kalpana (Iron-Based): *Mandur Bhasma* is crucial in *Kusth* associated with anemia and debility, as it improves *Rakta Dhatu* quality.^[24]

Sindura Kalpana: Used similarly to *Kupipakwa Rasayanas*.

Arogyavardhini Vati

- A renowned formulation containing *Shuddha Parada* (purified mercury), *Shuddha Gandhaka* (purified sulfur), *Tamra Bhasma* (copper ash), *Lauha Bhasma* (iron ash), and herbs like *Kutki* (*Picrorhiza kurroa*) and *Haritaki* (*Terminalia chebula*).
- It is highly effective for liver disorders and stubborn skin diseases by virtue of its deep detoxifying (*Rakta Shodhaka*) and pacifying actions on *Pitta* and *Kapha Doshas*.
- It is particularly indicated in pustular and inflammatory types of *Kushtha*.^[25]

Gandhaka Rasayana

- A potent preparation of purified sulfur processed with various herbal decoctions and juices.
- It is a premier *Rasayana* for the skin and is specifically indicated in all types of *Kushtha*, especially those with severe itching, infection, and exudation. Its hot potency (*Ushna Virya*) and drying property make it ideal for *Kaphaja* and *Vataja Kushtha*.
- It acts as a blood purifier and enhances metabolic fire (*Deepana*).^[26]

Kaishore Guggulu

- Although primarily a herbal formulation, it is fortified with *Shuddha Guggulu* (*commiphora wightii*) purified with Triphala decoction and contains *Nishottara Kalka* (a paste of 14 herbs) along with *Shuddha Gandhaka* (purified sulfur) and *Gomutra* (cow's urine) as processing agents.
- It is one of the most important medicines for *Pittaja* conditions, excellent for purifying blood (*Rakta Shodhaka*) and reducing inflammation, making it a key drug in psoriasis (*Ek-kushtha*) and weeping eczema.^[27]

Sutashekhara Rasa

- A formulation primarily consisting of *Shuddha Parada*, *Shuddha Gandhaka* and other ingredients like *Mukta Bhasma* (pearl ash) and *Shankha Bhasma* (conch shell ash).
- While traditionally used for acid-peptic disorders, its potent Pitta-pacifying and cooling (*Sheeta Virya*) properties make it highly useful in *Pittaja Kustha* presenting with burning sensation, redness, and intense inflammation.^[28]

Rasa Manikya

- A highly potent, single-ingredient preparation made solely from purified mercury and sulfur through a specific intense heating process (*Lavana Pachana*).
- It is considered as efficacious as *Rasasindoor* but with even greater potency.
- It is used in minute doses for severe, chronic, and resistant cases of *Kushtha* where *Vata* and *Kapha* are profoundly aggravated, providing strong rejuvenative (*Rasayana*) and disease-destroying (*Yogavahi*) actions.^[29]

Samira Pannaga Rasa

- A complex formulation containing *Shuddha Parada*, *Shuddha Gandhaka*, *Vatsanabha* (*Aconitum ferox*) and other herbs.
- It is specifically designed to pacify severe *Vata* disorders. In *Kushtha Chikitsa*, it is selected for *Vataja* or *Vata-Kaphaja* types like chronic psoriasis with extreme dryness, scaling, fissuring, and pain, where it works by normalizing the movement of *Vata* Dosha.^[30]

Pharmacological Actions and Modern Correlates

This section would detail modern research:

- Nano-formulation: Studies showing *Bhasmas* are nanoparticles, enhancing bioavailability and allowing interaction with cellular components.^[8,11]
- Immunomodulation: *Rasasindoor* and *Abhrak Bhasma* have been shown to modulate cytokines (TNF- α , ILs) involved in psoriatic pathways.^[31]
- Antioxidant: Many *Bhasmas* (e.g., *Mukta*) exhibit strong free radical scavenging activity.^[15]
- Antimicrobial: *Gandhak Bhasma* shows significant antibacterial and antifungal activity.¹⁶
- Keratolytic & Wound Healing: *Yashada Bhasma* promotes collagen synthesis and epithelialization.^[14]

Clinical Considerations, Safety, and Contraindications

- The necessity of administering these drugs only after proper *Shodhana* therapy and confirmation of strong *Agni* and absence of *Ama*.
- The critical role of *Anupana* (e.g., *Guduchi Kwath* for *Rasasindoor* in psoriasis, *Khadirarishta* for blood purification) to enhance efficacy and direct the drug.
- Addressing safety: Emphasizing that properly manufactured (*Sodhita* and *Marita*) formulations from reputable vendors are safe, citing studies on the chemical transformation of metals into non-toxic oxides and sulfides.^[32,33]
- Listing contraindications: pregnancy, lactation, severe renal/hepatic impairment, acute *Ama*.

Discussion: Synthesizing Tradition and Science

This section would propose a clinical decision-making algorithm. For example:

- Chronic Plaque Psoriasis (*Ek-kushtha*, *Vata-Kaphaja*): *Shodhana* \rightarrow *Rasasindoor* + *Kaishore Guggulu* + *Panchtikta Ghrita*.
 - Weeping Eczema (*Pittaja Kushtha*): *Raktamokshana* \rightarrow *Yashada Bhasma* + *Guduchi* + *Manjistha*.
 - Vitiligo (*Shvitra*, *Vata-Kaphaja*): *Abhrak Bhasma* + *Bakuchi Churna* + Exposure to Sun.
- It would also discuss the need for more robust randomized controlled trials (RCTs), pharmacokinetic studies, and long-term safety surveillance.

CONCLUSION

The selection of herbo-mineral formulations in *Kushtha Chikitsa* is not arbitrary but a sophisticated science based on precise Ayurvedic diagnostic parameters. The choice between a *Bhasma*, a *Kupipakwa Rasayana*, a *Parpati*, or a *Pottali* hinges on a deep understanding of the patient's *Prakriti* (constitution), the *Vikriti* (morbid condition) of the *Doshas*, the chronicity of the disease, and the status of *Agni*. When manufactured correctly and prescribed judiciously by a qualified practitioner, these formulations offer a powerful, targeted, and safe therapeutic arsenal against some of the most stubborn dermatological challenges. Integrating this ancient wisdom with modern scientific tools for validation and standardization holds the key to unlocking their full potential for global dermatological care.

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