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Review Article

CRITICAL REVIEW OF *MRITTIKA* IN AYURVEDIC CLASSICAL TEXTS

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ABSTRACT

The traditional, age-old Indian medical system known as Ayurveda encompasses a wide range of fundamental ideas. The five natural elements in the *Panchmahabhautika Chikitsa Siddhanta* are *Prithvi* (earth), *Jala* (water), *Akasha* (space), *Agni* (fire), and *Vayu* (air). All of these substances contain chemicals, minerals, and nutrients that might enhance health and are related to the potential of human life on Earth. One of these, *Mrittika*, is among the most crucial components and is rich in nutrients that are crucial to human health. *Shothahara* and *Shoolhara Gunas*, according to the Acharyas. It is highly helpful in treating and preventing many ailments since it can remove toxins from the human body. The Ayurvedic Samhitas provide a thorough explanation of *Mrittika's* exterior and interior uses under *Parthiva Chikitsa*. It is highly helpful in treating and preventing many ailments since it can remove toxins from the human body. This article, explains the beneficial properties of *Mrittika*.

INTRODUCTION

One of the five *Panch Mahabhootas* that significantly affects the human body is Earth.[1] *Mrittika* has a significant influence on both the health and disease of the human body. Since all of the colors of the sun are absorbed by it and carried to the human body, it has positive effects on the skin, post-traumatic stiffness, *Pradararoga*, etc.

Classification of *Mrittika* (Soil)

The characteristics of *Mrittika* are not explicitly described in Ayurvedic scriptures, although they are implied. Texts discuss the characteristics of the water that is present in a certain kind of *Mrittika*. Based on the kind of *Mrittika* that the water falls on, *Acharya Charaka* detailed the characteristics of the water. [2]

S. No.	Type of the *Mrittika*	*Rasa* of *Mrittika*
1.	*Shweta*	*Kashaya*
2.	*Pandu*	*Tikta*
3.	*Kapila*	*Kshariya*
4.	*Ushara*	*Lavana*
5.	*Parvata*	*Katu*
6.	*Krishna*	*Madhura*

The characteristics of water dropping on a specific soil were also addressed by *Acharya Sushruta*. It is reasonable to presume that soil shares the same characteristics as the water that falls on it. [3]

S. No.	*Guna* of water falling on the *Mrittika* color of the	*Rasa* of *Mrittika*
1.	*Lohita*	*Madhura*
2.	*Kapila*	*Amla*
3.	*Pandu*	*Lavana*
4.	*Peeta*	*Katu*
5.	*Neela*	*Tikta*
6.	*Shukla*	*Kshaya*

Distinct regions of the world have distinct types of *Mrittika* (soil). Depending on where it originated, its makeup changed. The kind of rocks present in the area and the formation process has an impact on the mineral composition of *Mrittika*. The type of local flora and wildlife has an impact on its property. Therefore, understanding the characteristics of the soil is crucial before making use of its advantages. To get rid of any impurities, *Mrittika* should be *Shushka* (dried), *Choorna* (powdered), and *Sukshma* (sieved) before usage.

According to *Harita Samhita,* 5 categories of *Bhoomi* have been explained with their properties. [4]

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S. No.	Color of ***Bhoomi***
1.	*Krishna* (Black)
2.	*Rakta* (Red)
3.	*Sita* (White)
4.	*Pita* (yellow)
5.	*Neela* (blue)

Despite the fact that various *Mrittikas* are utilized on various patients, *Mulatani* and *Krishna Mrittika* are more frequently used since their texture makes *Mrittika Patti* simple to prepare and apply to patients. The white and black coloring of this soil contributes to its strong absorption qualities.

Bhavaprakasha Nighantu claims that it was kept in the *Ashtama Dhatwadi Varga* and that indications in a number of ailments, including *Kshata, Raktapradara* or *Raktavikaara, Pradararog,* and *Kaphaja Pittaja Vikara*, have been made. [5]

According to *Acharya Charaka*, the usage of water containing *Bhasma of Vaidurya, Moti, Suvarna* and *Shankha, Mrittika*, and *Choorna of Amla* and *Sugandhawala* might relieve *Raktapitta*. [6]

The use of *Mrittika* combined with deer bile, *Ghee, Tanduliyaka*, etc. is recommended in the *Sushruta Samhita* for the treatment of the symptoms, such as hair loss, headaches, bleeding from small channels (piles), and the growth of tumors brought on by the use of a poisoned comb. [7]

Mrittika has been prescribed for the treatment of *Shotha* (inflammation) in the *Sharangdhara Samhita*. [8]

Mrittika Pottali Swedana has been recommended for the treatment of *Shoola* (pain) in *Bhaishajya Ratnavali*.[9]

Rasa Panchaka* of *Mrittika is as follows: [10,11,12,13]

1. *Rasa -Madhura*
2. *Guna- Snigdha, Sheeta, Guru*
3. *Veerya- Sheeta*
4. *Vipaka –Madhura*
5. *Prabhav-Sheeta, Vishgna*

Probable mode of action of *Mrittika*

The manner that Ayurveda explains how medications work is distinctive. The drug's pharmacodynamic qualities, such as *Rasa, Guna, Veerya*, and *Vipaka,* carry out the activity in the body. In addition to this, there is *Prabhava*, which has a unique quality that the medications inherit that cannot be articulated.

Explained in the form of a chart

Mrittika Choorna

↓

Jala (Water) is added to powder accordingly to make *Lepa*

↓

Now, this *Lepa* has these qualities that are *Snigdha, Guru,* and *Pichhila Guna*

↓

These properties are opposite to the *Gunas* of *Vata Dosha*

↓

Lepa will counteract the properties of *Vata Dosha* and reduce its intensity i.e., *Snigdha Guna* will act on *Ruksha Guna* of *Vata*

↓

Guru Guna will reduce the *Laghuta* of *Vata* and *Pichhila Guna* will counteract the *Vishada Guna* of *Vata*

↓

By reducing the intensity of *Vata Dosha* properties, pain and other associated symptoms of *Vata Dosha* will be relieved

DISCUSSION

Here are some research studies regarding Mrittika in all the ways. Ministry of AYUSH, Govt of India, AYUSH Grid, Techniques and different modalities of Naturopathy, Mud therapy. Here, it is mentioned that Earth is made up of various minerals and compounds that play an important role in boosting the body's immunity level. Among all the rich minerals that are proving as a boon to the human body, clay is one such element of earth that has been linked with many religious beliefs due to its enriching healing properties. Whether it is the famous mud festivals of Korea or mud baths in the Dead Sea, the advantages of mud therapy are much known to the entire world. As per the ancient scriptures of Ayurveda, the human body is made up of 5 particles namely earth, air, water, fire, and vacuum. Clay holds the quality to get inside the system and treat all the imbalances. In naturopathy, mud therapy involves the scientific use of moistened earth in a proper manner to benefit the body from within. Mud possesses the quality of absorbing toxins from the body which eventually helps in the prevention of many diseases. There are many advantages of mud therapy such as:

- The application of mud over the body causes cooling and helps to retain moisture.

- The shape and consistency can be changed easily by adding water.
- Mud therapy is easily available and is an affordable procedure.
- It has the property of absorbing all the colors from the sun and conveying them to the body.

Dr. Manoj Kumar Thakur and Dr. Swati Thakur (2021). "Clinical Efficacy of Krishna Mrittika Chikitsa in Low Back Pain. The outcome is that by *Krishna Mrittika Lepa* stiffness is removed and by the application of *Krishna Mrittika* pain subsides and then the patient is able to move his/her affected part. The procedure used in this group is highly effective in subsiding pain, and stiffness and also improves the restricted range of movement in case of low back pain. Statistically, the results are highly significant. The present study requires to be repeated on large samples and observations of results should be done for longer periods to assess the duration of the effect and drugs can be established for treatment of low back pain. [14]

Hafiz Muhammad Asim Raza, Grazina Krutulyte, Inesa Rimdeikiene, Raimondas Savickas (2021). "Efficacy of Balneotherapy and Mud Therapy in Patients with Knee Osteoarthritis: A Systematic Literature Review. The outcome is that the improvement reported in some clinical trials lasts over time, so balneotherapy and mud therapy can represent a useful backup to the pharmacologic treatment of knee OA patients or an alternative for patients who are unable to tolerate pharmacologic treatments. However, in this meta-analysis, there are relatively small numbers of studies that have been undertaken to investigate the effectiveness of balneotherapy and mud therapy in knee OA, so it is difficult to make definitive conclusions. Additional high-quality, randomized controlled trials need to be conducted to explore the issues further in order to obtain strong evidence on the effects of balneotherapy and mud therapy. [15]

Ge, Y., Thomasson, J.A. & Sui, R. Remote sensing of soil properties in precision agriculture: A review. The success of precision agriculture (PA) depends strongly upon an efficient and accurate method for in-field soil property determination. This information is critical for farmers to calculate the proper number of inputs for the best crop performance and the least environmental effect. Grid sampling, as a traditional way to explore in-field soil variation, is no longer considered appropriate since it is labor-intensive, time-consuming, and lacks spatial exhaustiveness. Remote sensing (RS) provides a new tool for PA information gathering and has the advantages of low cost, rapidity, and relatively high spatial resolution. Great progress has been made in utilizing RS for in-field soil property determination. In this article, recent publications on the subject of RS of soil properties in PA are reviewed. It was found that a large array of agriculturally-important soil properties (including textures, organic and inorganic carbon content, macro- and micro-nutrients, moisture content, cation exchange capacity, electrical conductivity, pH, and iron) were quantified with RS successfully to the various extents. The applications varied from laboratory analysis of soil samples with a bench-top spectrometer to field-scale soil mapping with satellite hyperspectral imagery. The visible and near-infrared regions are most commonly used to infer soil properties, with the ultraviolet, mid-infrared, and thermal-infrared regions have been used occasionally. In terms of data analysis, MLR, PCR, and PLSR are the three techniques most widely used. Limitations and possibilities of using RS for agricultural soil property characterization were also identified in this article. [16]

As agriculture is intensified in particular areas, the proportion of nutrients supplied by weathering becomes relatively small, compared to that added as fertilizers. Even in areas of well-developed agriculture, both in temperate and tropical regions, the weathering release of nutrient elements is of major importance in soil fertility and crop production. It is found that the inherent fertility of soils is related to their mineral content. As the weathering stage advances, soils gradually change, first toward increased productivity and finally, to extremely low productivity. The release of the major and minor elements can be correlated with the mineral composition of the soil. In backward areas, agriculture has been directed toward maximum use of the native mineral source of nutrients by systems such as patch agriculture and paddy culture. Even in areas of intensive agriculture, it is clear that the addition of ground rocks (such as ground limestone) and minerals to soils is a reversal of the weathering scheme, with extremely beneficial effects on crop productivity. The chapter examines the processes and products of chemical weathering of minerals in soils from the standpoint of each of these phases and highlights the relative stability of minerals; weathering sequences and indexes. The chapter also lists the factors affecting the reaction rates of chemical weathering and their distribution frequency. [17]

As *Visha Hara*, *Daahahara, Raktpradarahara, Shothahara, Pradararogahara, Aamavatahara,* and *Shoolahara*, *Mrittika* has also been employed. It suggests that this *Mrittika* has calming effects on *Vata* and *Pitta*. According to *Acharya Charaka*, the qualities of water are dependent on the type of soil it falls on. From this quotation, we may infer inferentially that *Krishna Mrittika* possesses *Madhura Rasa* as a quality. It may be utilized because it contains *Madhura Rasa*, which helps to increase *Ksheena Dosha* and *Dhatus* while reducing *Kupita Dosha*, and it is rich in *Prithvi* and *Snigdha Guna*. It is utilized for illness management, prevention, and health promotion. Basically, *Mrittika* is

applied to various body areas for a variety of reasons, including aesthetics, pain alleviation, and the treatment of various diseases. Based on their colors and qualities, several forms of *Mrittika* are utilized in the treatment of the condition.

CONCLUSION

Ayurveda *Tridosha* and *Panchbhautika Chikitsa Siddhanta* are the two main tenets of the traditional, age-old Indian medical system. *Mrittika Chikitsa* (mud treatment), which is readily available and affordable, can be utilized to treat a variety of illnesses. Numerous important minerals are included in *Prithavi,* and *Prithavi Tattva* uses these minerals to nourish a person's organs. The Ayurvedic Samhitas provide a comprehensive explanation of *Parthiva Chikitsa's* usage of *Mrittika*, including the fact that it may be used both externally and internally to treat a variety of illnesses.

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