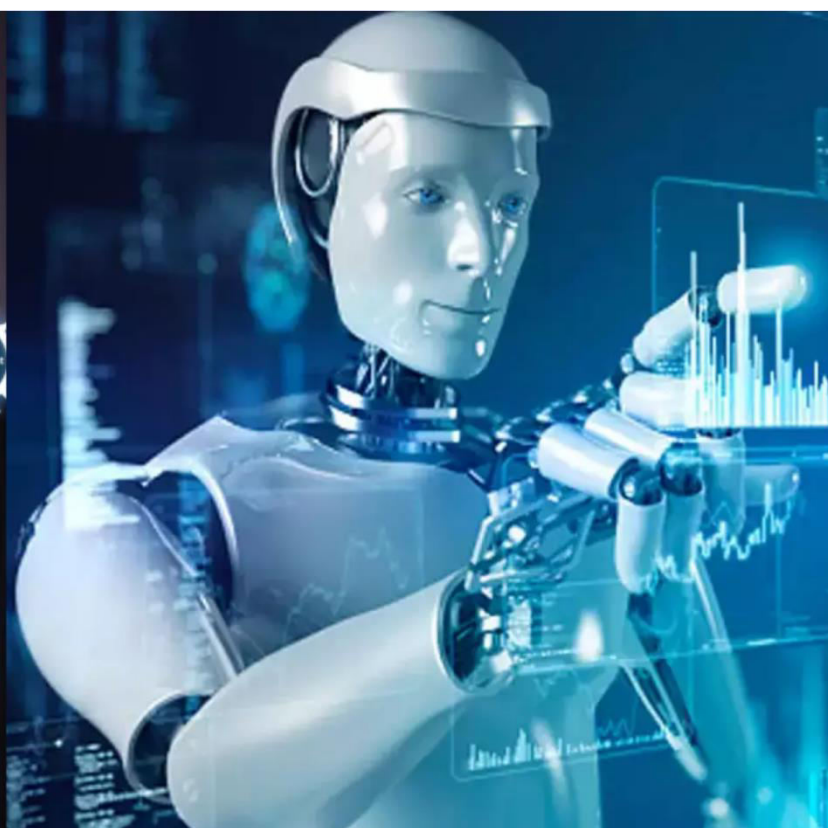




# International Journal of Innovative Research in Science Engineering and Technology (IJIRSET)

*(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)*



**Impact Factor: 8.699**

**Volume 14, Issue 6, June 2025**

# A Comprehensive Review on the Significance of Ethnomedicinal Plants in Rajasthan

Mahendra Regar<sup>1</sup>, Dr. Ravi Parihar<sup>2</sup>

Research Scholar, Department of Botany, Govt. Dungar College, Bikaner, India

Assistant Professor, Department of Botany, Govt. Dungar College, Bikaner, India

**ABSTRACT:** Rajasthan, a state characterized by its diverse geographical and climatic conditions, harbors a rich repository of ethnomedicinal plants that have been traditionally utilized by local communities for treating a wide range of ailments. This review aims to comprehensively explore the ethnobotanical knowledge associated with medicinal flora across various regions of Rajasthan.

**KEYWORDS:** Rajasthan; Plants; Ethnomedicinal; Ailments.

## I. INTRODUCTION

Ethno-medicine elucidates several recognized and unrecognized applications of plants that possess potential for broader use, demonstrating that all elements in nature have some kind of force, spirit, or intrinsic characteristics. The protection of genetic resources is crucial for discovering new sources of pharmaceuticals, food, fodder, and other life-sustaining resources found in nature. The plants are esteemed for their use in herbal medicine, food, fodder, gums and resins, essential oils, dyes, fatty oils, sauces, and spices. The global biodiversity statistics and information sheets highlighted that human authority summoned divine interventions via ceremonies, rituals, and folklore to instill a dread psychosis. Ethnic groups globally have developed distinct cultures, customs, religious ceremonies, taboos, totems, stories, myths, folklores, music, culinary traditions, and medical practices. A multitude of wild and cultivated plants significantly contribute to various civilizations, with this interplay having developed over decades of experience and practices. Currently, there is sufficient potential for the integration of these remedies into the mainstream prenatal medical systems, after the photochemical and biological screening of tribal drugs, along with clinical studies. Individuals in rural areas use these remedies to treat ailments such as fever, cold and cough, dermatological conditions, dysentery, discomfort, diarrhea, wounds, snake bites, insect bites, asthma, burns, and other assorted problems. The rapid deterioration of forests has led to the exhaustion of natural resources. The protection of these plants must be regarded with utmost seriousness, necessitating the immediate initiation of large-scale cultivation due to their significant socio-economic significance, alongside the establishment of herbal gardens in Rajasthan and other regions of India. Over the last 15 years, the conservation of medicinal plants has garnered attention, with several studies citing different conservation approaches, including in situ, botanical gardens, and germplasm banks, among others. The government must implement genuine measures to safeguard the forest and its resources, as well as establish a code of practices for the cultivation, harvesting, collection, handling, packaging, storage, and exportation of these ethnobotanical materials, as many are on the brink of extinction due to over-exploitation. The future existence of mankind depends on the preservation and safeguarding of natural resources, since the extinction of a species or genetic lineage leads to the irrevocable loss of a singular asset. This kind of genetic and environmental damage is permanent. The alterations in structural composition and the diversity of genetic resources have diminished society's capacity to address emerging challenges and its potential to combat current issues more effectively. There are risks associated with emerging plant diseases or pests, climate change resulting from the greenhouse effect, and other challenges. The conservation and safeguarding of Rajasthan's natural heritage is challenging due to the severe climatic conditions prevalent in many regions. Biodiversity is diminishing at a concerning pace. The desert in Rajasthan is expanding. The habitat of several environmentally fragile animals has been obliterated. Numerous economically and medicinally significant species, like *Commiphora wightii* and *Tecomella undulata*, are under critical extinction concerns. To address these issues, biodiversity protection is essential.



## II. REVIEW OF KEY ETHNOMEDICINAL PLANTS

Ethnobotany, the study of the interactions between humans and plants, has developed into a discipline that connects culture, science, and the natural environment. Ethnobotany transcends mere documentation of plants and their use; it serves as a lens into the values, beliefs, and traditions of cultures. It elucidates the reciprocal influence between people and the botanical resources upon which they rely for sustenance, medicinal purposes, rituals, or economic sustenance. Ethnobotany examines the comprehensive natural and customary interactions between humans, plants, and domesticated animals. The collection of jungle fruits or tubers, together with the hunting of animals for sustenance by early humans, marked the inception of ethnobotany and ethnozoology. The evolution of ethnobotany from its nascent stages through the centuries has been extensive. Until recently, it was not recognized that sustainable development could only be attained via a comprehensive study and integration of the cultural dimensions of biological variety, with the involvement of the indigenous populations of any area. The methodologies of ethnobotanical study are contingent upon the intended purpose or final outcome. They are diverse but may be classified into two overarching types, namely: empirical investigation and textual analysis. Three primary ways are available for the collection of a substantial number of plants for biological screening, namely: arbitrary assemblage, assemblage of flora from families abundant in bioactive compounds, or assemblages based on ethnomedicinal information. Findings in India and other nations indicate that the proportion of favorable outcomes is much higher in ethnobotanically chosen species. A study of recent literature indicates that more than 30 publications with the terms: ethnobotany or tribal medicine in their titles have been published in the last two decades. More than 275 articles have been written about certain ethnic groupings. The bulk of studies address many families and hundreds of species of ethnobotanical importance within a given region. Approximately 150 publications focus only on one or two specific species in detail. Many conventional techniques facilitate the sustainable use of biological resources. Faith and traditional traditions contribute to less harm and enhanced preservation of specific species and ecosystems, hence supporting overall biodiversity. The potential exists for socioeconomic advancement of indigenous people via the development of cottage enterprises centered on their distinctive traditional tools, gadgets, arts, and crafts.

Despite experiencing varied degrees of transformation, a significant population continues to thrive in primitive circumstances while maintaining their customs. The Bhils are the biggest group, followed by the Garasias and Damors. The indigenous people, living near natural environments, possess specialized knowledge on the characteristics and applications of wild flora, most of which remains unfamiliar to other societies. Until a decade ago, the ethnobotany of the tribes of Rajasthan remained mostly unexplored. Comprehensive fieldwork in tribal settlements, seen from a macro-level viewpoint, yielded intriguing insights into their lifestyles. Katewa (2009) emphasized valuable ethnobotanical insights into the use of wild plants by the tribal communities of Rajasthan for purposes such as sustenance, medicinal applications, veterinary care, and material culture. This traditional knowledge, when examined scientifically, might provide significant advantages for humanity.

Prasad et al. (2022) seek to discover and catalog the ethnomedicinal plants used by the indigenous population of the Alwar area in Rajasthan, India. The survey documented 75 ethnomedicinal plant species from 36 families utilized by the tribal and rural populations of Alwar district to treat various ailments, including sexual weakness, gonorrhea, leucorrhea, and anemia. Among 75 plant species, 26 are trees, 12 are shrubs, 36 are herbs, and 1 other. The Fabaceae family (13 species) was the predominant family, succeeded by Euphorbiaceae (5 species), Asteraceae, Malvaceae, Moraceae, and Solanaceae (4 species each). The most utilized plant part for medicinal purposes was the leaves (26.83%), followed by the root (15.45%), whole plant (14.63%), and fruit and bark (12.20%). This work presented a compilation of ethnomedicinal plant species, including their local nomenclature, used plant parts, and therapeutic applications for the appropriate management of many ailments. With the emergence of human civilization, several therapeutic systems have been established, mostly derived from plants. Ayurveda, Homeopathy, Siddha, Unani, and similar practices constitute our traditional medical systems. Traditional plant-based medicinal systems remain the major healthcare providers for almost three-quarters of the global population. The use of plants for therapeutic purposes in India stretches back 5,000 years. It has been officially acknowledged that 2,500 plant species possess therapeutic properties, while more than 6,000 plants are projected to be investigated in traditional, folk, and herbal medicine. A crucial precondition for the effective usage of a nation's raw materials is the assessment of its natural resources and the compilation of an inventory. The woods and desert areas of Rajasthan provide significant promise from both economic and biological perspectives. Pillai et al. (2008) examined the research conducted so far in the ethnobotany of Rajasthan.

Pandey et al. (2016) examined 26 ethnomedicinal plant species from 17 families used as antipsoriatics by the indigenous population in Rajasthan. The research examined the many varieties of psoriasis, including the botanical name, local nomenclature, family classification, plant components used, and their application in psoriasis therapy.

Ethnobotany examines the interactions and linkages between plants and humans across temporal and spatial dimensions. Human existence would be untenable in the absence of vegetation. Sain et al. (2017) endeavoured to investigate the traditional indigenous knowledge of the local rural populace in the Banasthali area of Tonk district, Rajasthan. The research indicated that 16 plant species exhibit a high degree of faithfulness. These discoveries will facilitate the preparation of more advanced research in pharmaceuticals.

The Jodhpur area, located in the Thar Desert, has a significant abundance of medicinal plants. The medicinal flora of this area has significant potential for use in the pharmaceutical and medicine industries. Kapoor and Lakhera (2013) sought to raise knowledge of the ethnomedicinal significance of plants and their applications to attract the interest of pharmacologists, phytochemists, and pharmaceutical professionals.

Guria et al. (2001) provided a comprehensive overview of 24 ethnomedicinal and 10 noxious grasses in Rajasthan. Forest inhabitants use ethnomedicinal grasses to address numerous diseases in their everyday lives. Although several grasses possess significant medical properties, others are believed to be undesirable. These invasive grasses disrupt the economic equilibrium of both tribal and rural societies. The importance of promoting the identity and value of grasses, as well as the need of establishing a database of local knowledge possessed by tribes, was emphasized.

Meena and Meda (2009) undertook a floristic assessment of ethnomedicinal plants in the tribal region of Rajasthan to evaluate the potential of these plant resources for contemporary therapeutic applications. The Aravalli hills of Rajasthan are home to many tribes, primarily the Meena, Bhil, Grasia, Damor, and Kathodia. These tribes use the plants for several applications in their everyday lives. The indigenous peoples owe their health, energy, and life to the use of these natural herbs. Nonetheless, due to environmental changes and insufficient plant conservation efforts, several species have become uncommon, vulnerable, and endangered. This study aimed to provide a comprehensive enumeration of plant species, including the used plant parts and the documented methods of administration for the efficient treatment of various diseases as practiced by the Meena population of Rajasthan.

Ethnobotany is often defined as an anthropological approach to botany. With the emergence of human civilization, several therapeutic frameworks have developed mostly based on plants. Plant-based traditional medicinal systems continue to provide crucial healthcare to over three-quarters of the global population. It has been officially acknowledged that about 2,500 plant species possess therapeutic properties, while more than 6,000 plants are projected to be used in folk, traditional, and herbal medicine. The dry and forested areas of Rajasthan provide remarkable potential from both economic and biological perspectives. Pathan et al. (2022) examined the research conducted to date (2022) in the ethnobotany of Rajasthan. In 1895, Harshberger coined the term ethnobotany to describe plants used by indigenous peoples. Plants have served as a crucial source of medicinal prescriptions from the dawn of human civilization. Despite substantial advancements in Allopathy over the twentieth century, plants remain a vital source of pharmaceuticals in both contemporary and traditional medical systems worldwide. Approximately 33% of all pharmaceuticals originate from plants, including creatures such as fungus and microbes like bacteria. Over 60% of all pharmaceuticals are derived from plants. Indigenous and local populations use herbs to treat different ailments. The predominant ailments in contemporary society are lifestyle-related, and the use of herbal remedies may effectively address these issues.

Kumari and Jain (2018) undertook a botanical study of therapeutic plants in the dry and semi-arid parts of the Harshnath Hills, Sikar District. The indigenous and tribal populations of the region use these plant species in their daily lives for several reasons. The data was gathered via conversations with local individuals using traditional medicinal practices. In the survey, 105 ethnobotanical plant species from 49 families were documented in the research region. The plant species, their used components, and the method of administration were categorized accordingly. In another study, a survey of Mandal tehsil was conducted from 2016 to 2017 to record the ethnoveterinary plants used by the tribal and indigenous populations. Singh and Keer (2024) performed a research based on comprehensive botanical investigations and interviews with tribal communities, local residents, shepherds, and nomadic individuals from the Pali area.

## III. ETHNOMEDICINAL SIGNIFICANCE OF PLANTS: AN OVERVIEW

Regional holy groves are ones in which individuals from many districts or states engage, such as Ramdeora in Rajasthan. These groves are often overseen by temple trusts. The subsequent elevated tier is characterized by a Pan-Indian nature, when individuals from many regions of the nation engage. The Hariyali holy forest in the Garhwal Himalayas exemplifies Pan-Indian practices and is administered by temple trusts. Another group of SGs are those regarded as dwelling places of ancestor spirits. Sacred groves can have significant socio-cultural purposes. Numerous celebrations are conducted in these hallowed woodlands (Rao et al., 1993). Plants serve as the conduit between living and non-living entities throughout the environment. A unique interaction occurs between trees and humans. Both trees and humans generate gases that facilitate each other's existence. Trees generate oxygen as a byproduct essential for respiration, while humans exhale carbon dioxide, which trees convert into carbohydrates for sustenance. Trees have had significant roles in several myths and religions worldwide, embodying profound and holy meanings throughout history. In Rajasthan, Rudraksha (*Elaeocarpus ganitrus*), Bel (*Aegle marmelos*), Ashok (*Saraca asoka*), Kadam (*Anthocephalus chinensis*), Pipal (*Ficus religiosa*), Kalpavriksha (*Adansonia digitata*), and Khezri (*Prosopis cineraria*) are regarded as holy.

Banni (*Accacia ferruginea*) is regarded as holy because of its association with Arjuna, who concealed his Gandhiva bow and arrows inside this tree during his year of agyatavasa, as recounted in the Mahabharata, when the Pandavas were banished to the forest. The sacrifice of life in defense of trees is shown in Rajasthan's history, namely when the King of Jodhpur sent his warriors to down the 'Khezri' (*Prosopis cineraria*) tree in the hamlet of Khezadali in 1730 AD. The troops, together with the laborers, disregarded the goddess's prohibition and started cutting the trees, informing the villagers: "If you wish to preserve the trees, then pay a tax; otherwise, we will proceed with the deforestation." The people encircled the tree trunks, while the workmen felled them with their axes. Consequently, 363 individuals were sacrificed to save these trees. Additional instances of such faith include the alpine flora *Saussurea obvallata* and *Delphinium vestitum*, locally referred to as Dongar and Loshkar, respectively. These species have been safeguarded through indigenous customs and beliefs by associating them with a local deity, thereby prohibiting anyone from the village or external individuals from harvesting the flowers, except for the village priest on designated days and times.

The conservation of medicinal plants is essential for sustainability, necessitating the protection of numerous medicinal species as a vital aspect of shared resources, including sacred groves, as evidenced by various studies. Approximately 610 kinds of medicinal plants have been used by a tribal population of 4.2 million in Rajasthan (Singh and Pandey, 1998). In Rajasthan, 80% of the population lives in rural regions and is unable to purchase expensive medication. They rely on the surrounding flora and use it well for their therapeutic requirements. A floristic study of ethnomedicinal plants in the tribal region of Rajasthan have also been performed previously by researchers to evaluate the potential of plant resources for contemporary therapies. A significant variety of medicinally valuable tree species exists in the Aravalli hill range and other regions, including the inhospitable North-West Rajasthan. A floristic investigation identified 61 ethnomedicinal plant species across 38 families in the Aravalli hills of the Mewar area in Rajasthan (Katewa et al., 2004; Katewa, 2009). The ethnomedicinal applications of biodiversity from the Tadgarh-Raoli Wildlife Sanctuary in Rajasthan were documented by Jain et al. (2007). Jain et al. (2009) performed an ethnobotanical investigation of the Sariska and Siliserh areas in Alwar district. A comprehensive list of plant species, including the specific plant parts used and the documented methods of administration for efficient treatment of various illnesses, has been compiled. The tribes reliant on forest resources are the true guardians of therapeutic plants to this day. Accelerated deforestation due to excessive harvesting and exploitative commerce of medicinal plants has markedly diminished their availability in the arid and semi-arid regions of Rajasthan (Singh and Pandey, 1980). Typically, local populations possess a thorough understanding of the therapeutic attributes of the flora in their environment, especially concerning their health (Mishra and Kumar, 2001). Kheep (*Leptadenia pyrotechnica*) is a commonly found plant in western Rajasthan. It is normally used as sustenance and therapeutic remedy (Singh et al. 2007). Currently, natural products and herbal remedies are advocated for diabetes management (Gupta and Kumar, 2002). More than 50 plant species with antidiabetic properties are found in the desert region of Rajasthan (Menghani and Ojha, 2010). In the Dang area of Rajasthan, 36 plant species are used as cooling agents during the hot months (Sharma and Khandelwal, 2010). A comprehensive study of the southern region of Rajasthan, including the districts of Chittorgarh, Udaipur, Banswara, and Dungarpur, has also been conducted to record the traditional knowledge of medicinal plants used by tribal groups (Meena and Yadav, 2010). The tribes reliant on forest resources, particularly their surrounding flora, are the true

protector that preserve therapeutic plants to this day. The fast deforestation resulting from over harvesting and exploitative commerce of medicinal plants has markedly diminished their availability in the arid and semi-arid regions of Rajasthan. A conservation approach that employs in-situ methods is essential for sustainable development.

#### IV. CONCLUSION

Ethnomedicinal plants of Rajasthan hold immense cultural, medicinal and economic significance, offering a vital link between nature and traditional healing practices. This review underscores the extensive use and importance of these plant species among the local and tribal communities of the state. Despite their widespread use, many of these plants remain under-researched in terms of their pharmacological potential and biochemical properties. Furthermore, there is a growing need to preserve indigenous knowledge systems that are rapidly vanishing due to modernization and lack of proper documentation. Scientific validation of traditional remedies can lead to new discoveries in herbal medicine and contribute to sustainable healthcare solutions.

#### REFERENCES

1. Bairwa, A., Prasad, R., & Singh, J. (2022). An ethno-botanical study of medicinal plants of Alwar district, Rajasthan. *International Journal of Botany Studies*, 1-12.
2. Bhodiwal, S., Pathan, S., & Barupal, T. (2022). A review: Ethnobotany of various plants in respect to health.
3. Gupta, R., & Kumar, A. (2002). Searching for anti-diabetic agents among Ayurvedic crude drugs. *International Journal of Mendel*, 19, 9-10.
4. Jain, A., Katewa, S. S., Galav, P. K., & Nag, A. (2007). Unrecorded ethnomedicinal uses of biodiversity from Tadgarh-Raoli Wildlife Sanctuary, Rajasthan, India. *Acta Botanica Yunnanica*, 29(3), 337-344.
5. Jain, S. C., Jain, R., & Singh, R. (2009). Ethnobotanical survey of Sariska and Siliserh regions from Alwar district of Rajasthan, India. *Ethnobotanical Leaflets*, 13, 171-188.
6. Kapoor, B. B. S., & Lakhera, S. (2013). Ethnomedicinal plants of Jodhpur District, Rajasthan used in herbal and folk remedies. *Indian Journal of Pharmacy*, 1, 71-75. <https://doi.org/10.30750/ijpbr.1.4.13>
7. Katewa, S. S. (2009). Indigenous people and forests: Perspectives of an ethnobotanical study from Rajasthan (India). In *Herbal Drugs: Ethnomedicine to Modern Medicine* (pp. 33-56). Springer, Berlin.
8. Katewa, S. S., Chaudhary, B. L., & Jain, A. (2004). Folk herbal medicines from tribal areas of Rajasthan, India. *Journal of Ethnopharmacology*, 92(1), 41-46.
9. Katewa, S. S., Guria, B. D., & Jain, A. (2001). Ethnomedicinal and obnoxious grasses of Rajasthan, India. *Journal of Ethnopharmacology*, 76, 293-297. [https://doi.org/10.1016/S0378-8741\(01\)00233-1](https://doi.org/10.1016/S0378-8741(01)00233-1)
10. Kumari, V., & Jain, S. (2018). Ethnomedicinal plants of Harshnath Hills of Shekhawati region of Rajasthan. (1 & 2), 1-16.
11. Meena, A., & Meda, M. (2009). Folk herbal medicines used by the Meena community in Rajasthan. *Asian Journal of Traditional Medicine*, 5.
12. Meena, K. L., & Yadav, B. L. (2010). Some traditional ethnomedicinal plants of southern Rajasthan. *Indian Journal of Traditional Knowledge*, 9(3), 471-474.
13. Menghani, E., Pareek, A., Negi, R. S., & Ojha, C. K. (2010). Antidiabetic potentials of various ethnomedicinal plants of Rajasthan. *Ethnomedicinal Leaflets*, 14, 578-583.
14. Mishra, A., & Kumar, A. (2001). Studies on Ayurvedic crude drugs for the cure of urinary tract stones. *International Journal of Mendel*, 18(1-2), 41-42.
15. Sain, S., Kumari, N., & Tripathi, B. N. (2017). Ethnobotanical studies on medicinal plants of Banasthali region of Tonk district, Rajasthan (India). *The Scientific Temper*, 8(1). <https://doi.org/10.58414/SCIENTIFICTEMPER.2017.08.1.08>
16. Sharma, B. D., Balakrishnan, N. P., Rao, R. R., & Hajra, P. K. (1993). *Flora of India* (Vol. I). Botanical Survey of India, Calcutta.
17. Sharma, L., & Khandelwal, S. (2010). Traditional uses of plants as cooling agents by the tribal and traditional communities of Dang region in Rajasthan, India. *Ethnobotanical Leaflets*, 14, 218-224.
18. Singh, J. P., Rathore, V. S., & Beniwal, R. K. (2007). Kheep (*Leptadenia pyrotechnica*): Potential rangeland shrub of Western Rajasthan, India. *Indian Journal of Plant Genetic Resources*, 20(3).
19. Singh, J., & Raj Keer, N. (2024). Ethnoveterinary wisdom of rural folks of Mandal Tehsil, District Bhilwara, Rajasthan, India.



20. Singh, V., & Pandey, R. P. (1980). Medicinal plant lore of the tribals of East Rajasthan. *Journal of Economic and Taxonomic Botany*, 1, 137-147.
21. Singh, V., & Pandey, R. P. (1998). *Ethnobotany of Rajasthan, India*. Scientific Publishers, Jodhpur.
22. Singhadiya, M., Pandey, I., Maina, V., Pandey, R., & Peddy, H. (2016). Ethnobotanical study of traditional medicinal plants used as anti-psoriatic in Rajasthan. *Journal of Non-Timber Forest Products*, 23(4), 225-232. <https://doi.org/10.54207/bsmps2000-2016-4U6M8O>



INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA



# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  [ijirset@gmail.com](mailto:ijirset@gmail.com)



[www.ijirset.com](http://www.ijirset.com)

Scan to save the contact details