



Survey Report of Triveni- A Speaking Tree

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Article History	Abstract
Received: 1 Nov 2023 Revised: 25 Nov 2023 Accepted: 20 Dec 2023	On the theme of protection of climate and environment, plantation is the main serge in the Indian community and in this notion, everyone is involved in plantation. However, it is important to check the climatic conditions, properties of plants, rhizome microbial community and other requirements is very important aspect. In this connection we are reporting the first time that the three huge plant named as Neem, peepal and bergad are planted together in close vicinity in the Bhiwani district and together called as Triveni. In some places of Bhiwani Devasr, 65 Triveni plants are planted in a small area our survey identified that the growth of one plant is compromised in the Triveni assembly. There is no scientific evidences that growing all three long lasting plant in one small vicinity will have any affects in the environment. As we all know that all these three plants have significant medicinal properties, continuous planting of land with the same or similar plant species can result in the accumulation of harmful soil microbes, which can lead to crop failure. In this article, we explore the influence of constant replanting on the health of short-rotation forestry soil, focusing on the accumulation of deleterious microbes and the decline of beneficial microbes. We also suggest possible practical solutions to address this problem and consider future research that could be conducted to better understand and reduce the build-up of deleterious soil microbes in short-rotation forestry soil.
CC License CC-BY-NC-SA 4.0	Keywords- Triveni, medicinal plant, pharmacological property, diseases

INTRODUCTION

With the advanced time and technology forests are cleared to make a way for a long list of agricultural products and other human activities. Cutting down and burning forests releases the near about 30% carbon emission into the environment due to this climate change and environmental destruction occurring with rapid rate (Dunne, 2018). To solve this problem government authorities planned three ways to reverse these losses: afforestation, reforestation and natural regeneration of natural ecosystems. Careful forest management can therefore be an important strategy to help address climate change in the future. There is no doubt that these strategies can help to remove excess carbon content from the atmosphere, but there impact are hard to measure with time. As in the china large scale afforestation projects shows unintended consequences in which the dry northern part of the country, people have planted trees to reverse deforestation, but because the tree species that were planted were ill suited to dry climate, this results into depleted water supplies and degraded soils of that region. So negative impact shown by the afforestation which done by the northern part people of china (Lejeune et al., 2018). As one of the similar case is studied in the India Eucalyptus tereticornis known as mysore gum is fast

growing, capable of over topping weeds, resistant and it has ability to adapt wide range of edaphoclimatic conditions (Kushalappa, 1984). Currently in India the plant *eucalyptus* (*Eucalyptus globulus*) commonly known as blue gum is planted largely near the bank of roads shows a high competition in sharing of soil nutrients and minerals to the nearby plants (Dessie G and Erkassa T., 2017). After a time interval the fastest growing eucalyptus used up almost major content of soil minerals with very high speed which leads to the poor quality and fertility of the soil. Reforestation with the monoculture *eucalyptus* plant species leads to the biodiversity loss due to allelopathy shown by *eucalyptus* in which the growth of other plant is diminished in nearby region (Liu *et al.*, 2018). So it is need of hour to research before planting tree in particular region, because plant vegetation of that region also affects the climate, microbial community of soil and soil quality condition of that area in near future. Now a days we know that for purification and clearance of environment, government and social community empathize on plating tress but continuous replanting of land with same and similar plant species results in degrade soil quality and accumulation of harmful soil microbes. In order to supply the global need for wood and other forest products, planting forests with short growth cycles, typically lasting 5 to 20 years, offers enormous promise this is mainly because different tree species, like Eucalyptus, Pinus, Acacia, and Populus, demonstrate rapid biomass accumulation (Schulze *et al.*, 2017). The negative of planting the same or nearly similar tree species or genetic variants repeatedly over short periods of time is that it could have unforeseen ecological effects. The competition for nutrients from plants is one of the main problems since it fosters the growth of many different bacteria in the root zone of these trees and group of microorganisms is frequently referred to as "Rhizobiome". *Cunninghamia lanceolata*, originally from China, is extensively cultivated due to its rapid growth, high productivity, and its ability to thrive in various climatic conditions. However, there have been documented challenges associated with monoculture plantations of this tree repeatedly replanting with *Cunninghamia lanceolata* has been found to deplete soil fertility and have adverse effects on the soil's microbial community (Wu *et al.*, 2017). The study noted that converting natural broadleaved forests into monocultures of *Cunninghamia lanceolata* led to soil degradation in terms of its physiological properties. Additionally, this transformation resulted in reduced diversity and richness within the soil microbial communities (Cheng *et al.*, 2022). In a study by Xia *et al.* it was observed that the composition of the soil microbial community differed between the first and second rotations of *Cunninghamia lanceolata* plantations. Notably, there was an increase in *Fusarium* and *Penicillium* species during the second rotation. However, the authors could not distinguish between pathogenic and non-pathogenic *Fusarium* species. They proposed that the deterioration of the soil microbial community was likely a consequence of the continuous replanting of *Cunninghamia lanceolata* in the same areas. Similarly, other research comparing microbial diversity, soil nutrient levels, and structural characteristics between short-rotation tree plantations and natural forests observed a similar trend. However the society is not aware which plant should be grown and how many times in particular climatic condition.

Planting tulsi (*Occimum tenuiflorum*) bring peace and happiness to the residents of that house. The Tulsi plant meant to destroy diseases and negative energy, thus Tulsi plant is found in the each and every Indian house. As in world map India was known to be a rich repository of medicinal plants and diverse culture among ancient civilizations. The Indian forest flora is the primary repository of a large number of medicinal and aromatic plants, which are primarily collected as raw materials for the production of drugs and perfumery products. Medicinal plants are used as an alternative to chemical medicines from the ancient time. Active compounds produced as secondary metabolites by the medicinal plants are responsible for providing the specific biological property. Over the centuries, knowledge of their medicinal properties has been passed down within and among human communities. More than a hundred thousand plants are either unknown or have not yet been studied and analyzed for their medicinal properties. Recently it become a kind of tradition in north India to grow the three medicinal plants together. According to Hindus mythology importance of various medicinal plants is well known but their scientific relevance is not studied yet. Here we are discussing about the wonder plant which is the association of three medicinal plants Neem, peepal and Bergad called as Triveni.

TRIVENI- A Miracle plant

It is one of the holly association of three aspecious medicinal plants (*Azadirachta indica*) Neem, (*Ficus religiosa*) Peepal and (*Ficus benghalensis*) Bergad/Banyan tree. According to the Hindu mythologist and tradition three medicinal plants are grown together in such a way that they are sharing a common rhizosphere area in triangular shape and after a time period the three plants merge into a single large plant of heavy body as shown in the Fig 1. Triveni trees are revered due to belief that the trinity of Hindu God- Brahma, Vishnu and Shiva which are symbol of divine and positive energy. These three evergreen plants having a long life of hundred years and huge plant body. *Ficus religiosa* is called as Bodhi tree, Buddha accomplished with

enlightenment under *Ficus religiosa*. Triveni plant mainly found in the holly places such as temples and sacred places of north India region of Haryana, Punjab and Rajasthan. The triveni plant is the home for a number of birds and animals due their huge shade canopy. Along this triveni is act as continuous environment cleaner by the property of *Ficus religiosa* (Peepal) tree releasing of oxygen even at the night time due to the CAM pathway. The plant also secreted their secondary metabolites into the soil by the roots and there may be unique and diverse type of microbial flora will be there in common rhizosphere soil of triveni plant. It is very interesting to study that how these three large trees grown so smoothly without showing the allelopathy and competition in nutrients utilization. Allelopathy is the chemical inhibition of plant by another plant, due to release of growth inhibitors in the environment (Bardon et al., 2017). When the growth pattern of the trees are analysed the interesting observation is analysed that the growth of *Ficus benghalensis* is more prominent as compare to *Azadirachta indica*. The plants shows the phenomenon of Rivalries in which the plant promote the growth of their own siblings around the surroundings in spite of the another species plant. All parts of the neem tree-leaves, flowers, seeds, fruits traditionally used for the treatment of inflammation, infections, fever, skin diseases and near about 140 bioactive compounds have been isolated from different parts of neem (Gupta et al., 2017). Neem leaf and its constituents have role in antiinflammatory, antihyperglycaemic, antiulcer, antimalarial, antibacterial and anticarcinogenic properties (Subapriya et al., 2022). Neem is used as natural insecticide and pesticides to provide protection from the insect and pest. Dried neem leaves used to keep protect the grain from the beetles and grubs. Smog of neem leaves used to protect from the mosquitoes and flies. (*Ficus bengalensis*) Peepal tree may be helpful for cough, asthma, diarrhoea, ear pain, toothache, hematuria, migraine, scabies and gastric problems (Gupta et al., 2022). *Ficus religiosa* used as antiulcer, antibacterial, antidiabetic, in treatment of gonorrhea and skin diseases (Chanderasekar et al., 2010). So the triveni is the combination of three prime medicinal plants, all the parts of Triveni plant leaves, roots, branches and even soil will be used to treat extreme serious diseases.



Fig1. The picture showing the Triveni plant assembly of Sec13, Bhiwani, Haryana, With the GPS location (28.81434999890168, 76.1357358714905)

The roots of Triveni plants are deeply rooted in the soil and bind the soil particles together. So they play an important role in save soil from erosion. The deeply rooted roots help in balancing the ground water level. So the main certitude behind the Triveni plantation is entirely our traditional and mythological beliefs related to these three medicinal plants. One of the exemplar of this see in Haryana state Satyavan, a government teacher known as Triveni Baba has campaigning to plant Triveni trees in temples, near ponds and peripheral area of

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villages from last 27 years. He has planted more than 40 lakh saplings and among them 50,000 are Triveni. So there may be a point of concern that planting Triveni in as much large number is helpful to the environment or not. There is no scientific and research based understanding behind the Triveni plantation. So there is a requirement to research and exploration regarding the Triveni plantation through this might be supreme recognition may be achieved by this in near future.

CONCLUSION

The unique traditional and indigenous system of medicine that passed down from generation to generation within society is still the popular system found within the remote rural areas of the country. The study represents a contribution to the existing knowledge of folk remedies that are in current practice for treatment of some common diseases. This is hope that, this information will be useful lead further phytochemical and pharmacological study of triveni plant in near future. Triveni may be a wonder tree which may be used to cure a number of drastic diseases and there is a need to study the pharmacological property of this unique plant. Triveni is one of the best option to promote afforestation and plantation in the environment for the purpose of balancing greenery. Unfortunately there is no research and scientific based evidence behind the Triveni plantation. So there must be a need to study out overall impact of Triveni plantation on the environment.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

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