

## IMPORTANCE OF CINNAMOMUM TAMALA FOR RESTORATION OF DEGRADED LAND, WEST HIMALAYA

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### ABSTRACT

*Cinnamomum tamala* belongs to family Lauraceae, commonly known as Tejpat or Indian bay leaf is an evergreen, moderate size, multipurpose tree species. The species is therapeutically and economically important medicinal tree species required conventional method for germination (cultivation packages). Based on the review, several multipurpose tree species gained much attention for rehabilitation of degraded land with supporting several components of the biodiversity such as restoration of ecosystem services, regulation of environmental services like carbon storage, productivity, biodiversity conservation, and improvement of soil fertility, livelihood enhancements. Therefore, present study was focused to optimize best seed germination conditions. In the study, 71.11% of seed germination with 34 days of mean germination time (MGT) was recorded in 70% shade net condition. While as, seeds germinated in open nursery condition were showed 40 days MGT with 53.33% seed germination. The mature seedlings of the species were used for large scale plantation in the degraded land of Chaudas valley, Pithoragarh district through participatory approach. Outcomes of the study suggested that species selection and management practices based on an understanding of natural succession and the forest plantations are promising tool for waste land rehabilitation in the Himalayan landscape.

**Keywords:** *Cinnamomum tamala*, Seed germination, Chaudas valley, Restoration

### INTRODUCTION

Land degradation is a universal concern caused by diverse factors including soil erosion via water and wind, decline in physical, chemical and biological properties of soil. All over the world, about 2 billion hectare degraded land has chances of restoration. In India, degraded land varies from 30 to 175 million hectare. In the Indian Himalayan region, out of total geographical area, about 37% is covered by degraded forests and abandoned agricultural land. The land holdings as well as area of degraded land available to local people are very small (Kanchan and Krishan 2018). Himalayan landscape is extremely vulnerable to rapid changes in global climate which reflected fast changes for biological diversity, ecosystem services, loss of biodiversity, receding natural forest, land use transformation, migration, land sloping, frequent landslide zones, intense precipitation, degradation of forested landscape, etc (Rawat *et al.*, 2017). Communities' residing in the Himalaya mainly relies on alpine pastures and forest landscapes for fulfilling their basic requirements, including seasonal grazing of livestock, collection of wild medicinal and aromatic plants (MAPs) and seasonal cultivation of food crops to sustain their livelihood. The over-exploitation of MAPs through illicit and unskilled manner increased pressure on natural populations (Zahra *et al.*, 2020).

Among the other states of India, Uttarakhand exists on 20<sup>th</sup> rank in terms of area (23.91%) under degraded land. Although enormous amount of investments have been made to acclimatize degraded land in the Himalayan region by planting trees after year 1970. However, due to inappropriate technologies and insensitive or negative attitudes the impact is poor. The people of this region remains economically weak as income from timber is prohibited, natural regeneration of degraded land is ineffective. The people of Himalayan region needed safeguarding of their economic interests from tree planting in degraded land. Apart from enhancing ecosystem functions of the treated areas, tree planting in degraded land, contributes to conservation of lasting forests (Semwal *et al.*, 2013).

The populace living in this region mainly depends on the forest resources occurred in the vicinity of villages. They used forest trees for fodder, fuel and non-timber forest products for traditional medicinal use as well as earning livelihood. The populations of many species from forests are being declined due to unsustainable use, overexploitation of economically important species and poor regeneration rate. Therefore, the cultivation of medicinally potential species can be subjected to enhance species population and provide the alternative livelihood source to the local people.