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Impact of *Lantana camara* Linn. invasion on plant diversity, vegetation composition and soil properties in degraded soils of lower Himalayan region, India

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ABSTRACT

Lantana camara, introduced in north India in 1850 has acclimatized in the region and is now considered as the abnoxious weed. The study was carried out in lower Himalayan region of India to see the impact of *L. camara* on plant diversity and soil fertility. Four different sites having varying lantana invasion status i.e., *L. camara* alone (Complete invasion - CI); *L. camara* + *Dalbergia sissoo* (Medium invasion - MI); *L. camara* + Local shrubs + *D. sissoo* (Partial invasion - PI) and local shrubs + *D. sissoo* (No invasion - NI) were selected. It was found that Importance Value Index (IVI) of *Murraya koenigii* was 80.49 at sites with no invasion, which decreased to 48.84 in partially invaded sites. Increase in biomass of Lantana to decrease in the biomass of indigenous species (*M. koenigii* and *Justicia adhatoda*) from 561 and 713 kg ha⁻¹ in uninvaded area to 392.5 and 596 kg ha⁻¹ in partially invaded sites, respectively. Soil bulk density decreased and pore space increased as the invasion of Lantana increased. Bulk density at uninvaded sites was 1.60 and it decreased to 1.25 at Complete Invasion sites. Soil Organic Carbon (SOC) content was much higher in completely Lantana infested sites (1.37%) followed by uninfested sites (0.69%). Nitrogen was higher (420.5 kg ha⁻¹) in completely invaded sites and least (291 kg ha⁻¹) in medium invaded site. A significant effect of Lantana invasion and soil layer on micronutrient content except Cu was also recorded.

Key words :

Biomass,
Fertility,
Invasion,
Lantana,
Root spread