



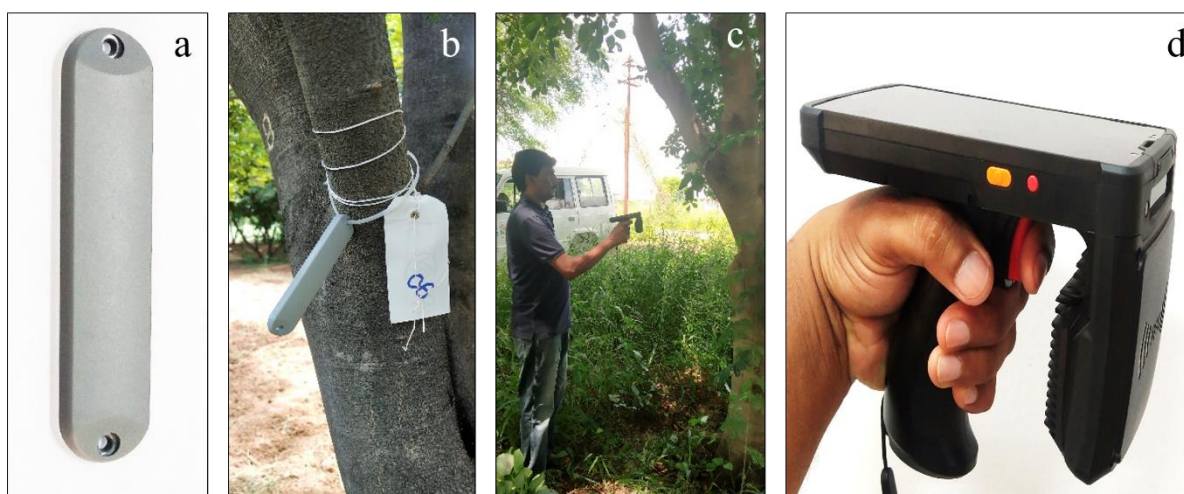
ICAR-Central Agroforestry Research Institute Jhansi :: Uttar Pradesh

Tree Genetic Resource Monitoring using Advanced RFID Chip-Based Technology

Genetic resources are important for conservation of species biodiversity on the earth, and tree genetic resources are important for effective environmental restoration and conservation in the modern era of climate change. Conservation of such tree genetic resources against natural and man-made catastrophe is essentially required. ICAR-Central Agroforestry Research Institute (CAFRI), Jhansi is maintaining various multipurpose tree (MPTs) germplasm including *Azadirachta indica*, *Acacia nilotica*, *Pongamia pinnata*, etc. Maintenance and evaluation of these tree germplasm is a prerequisite for tree improvement activities. For monitoring of tree germplasm at field, genes banks are the essential part of tree breeding. We have installed advanced chip-based technology or RFID (Radio Frequency Identification) tags in 30 trees on 04.09.2021 for a real-time monitoring of these germplasm at ICAR-CAFRI in collaboration with ICAR-National Bureau of Plant Genetic Resources (NBPGR), New Delhi. These RFID tags are provided with unique codes which will help in real time tracking of the trees and retrieving the information digitally with little or no human intervention. This initiative is supported by ICRAF-World Agroforestry.

Tree species tagged at the Field Gene Bank at ICAR-CAFRI, Jhansi, Uttar Pradesh

Species tagged	Number of tags	Field number
<i>Azadirachta indica</i>	10	14 and 15
<i>Acacia nilotica</i>	10	22
<i>Pongamia pinnata</i>	10	24



Tree Germplasm Monitoring: (a) RFID tag, (b) tree labelled with RFID tag, (c) retrieving information through RFID reader, and (d) RFID reader