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FORMULATION OF A SEED COLLECTION CALENDAR FOR SELECTED TREE SPECIES IN MADHYA PRADESH

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ABSTRACT: **In an era characterized by rapid climate change, safeguarding forest genetic resources has become increasingly vital, representing a pivotal aspect of biodiversity. These resources serve as foundational elements for developing improved tree varieties, clones, and hybrids, making their protection indispensable for the continuity of tree enhancement programs. Given the unprecedented challenges facing ecosystems, fortifying resilience and preserving biodiversity in our forests has become imperative. This crucial segment of biodiversity requires explicit recognition, careful documentation, and sustainable preservation, addressing both its intrinsic value and humanity's collective welfare. Unlike agricultural and horticultural species, the genetic material of Forest Genetic Resources is scattered across isolated populations or confined to specific locales, posing challenges to research efforts. Presently lacking a designated guardian for tree species at the national level, the Indian Council of Forestry Research and Education (ICFRE) has initiated a comprehensive program, funded by the Compensatory Afforestation Fund Management and Planning Authority (CAMPA), MoEF&CC, New Delhi, aims to tackle various aspects of forest genetic resources (FGR), with goals encompassing documentation, collection, seed germplasm storage, characterization, and the establishment of Seed and field gene banks. Central India boasts a rich biodiversity, yet extensive deforestation has left a considerable expanse in dire need of reforestation. Study on flowering and fruiting phenology of tree species is crucial for planning seed collection and mass seedling production in nurseries. Frequent observations over a two-year period spanning from 2021 to 2023 documented the flowering and fruiting of trees along various survey tracks in Madhya Pradesh. The collected data were utilized to create a straightforward seed collection calendar. The study revealed significant variations in leaf fall, flowering, and fruiting behaviours, which could be attributed in part to abiotic factors. Notably, the peak activity of leaf fall and leaf emergence occurred during the early dry period, likely to maximize the utilization of the first rainy season for both vegetative growth and reproduction. Peak flowering activity aligned with leaf fall/leaf flushing, suggesting a potential strategy to attract pollinators. Similarly, the peak activity of fruit ripening and fruit fall coincided with the first rainy season, aiming to capitalize on available soil moisture for seed germination and seedling establishment. The observed phenological behaviours of these trees reflect adaptations to the prevailing abiotic and biotic environmental conditions.**