(132)

Seed dormancy and seed storage behavior profiles for mangrove plant community in Sri Lanka

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Abstract

Community level seed dormancy and seed storage studies are important to answer several ecological and evolutional questions, e.g. the relative importance of seed dormancy/storage kinds in different plant communities. Ecologically, mangroves are a very important ecosystem in the coastal zone of the tropical and subtropical countries. Despite their importance, no community level seed dormancy/storage behavior studies have been conducted in this ecosystem. Thus, this study examined the seed dormancy and storage behavior profiles of 47 species in 24 families (including both true mangroves and associates) in Sri Lanka's mangrove plant community, using the published scientific information. The information gathered in this study can be used as a database for restoration and conservation purposes.

The literature survey provided seed dormancy information, at the species-, generic- and family-level respectively, for 42, 19 and 17 % of the mangrove species. Information was not available for 22% of the species. Of Sri Lanka's 47 species, 21 categorized into dormant seed category, ten into physiological dormancy, four into morphological and morphophysiological dormancy, two into physical dormancy and none into combinational dormancy categories. Although the information for seeds of other five species suggests that they are dormant, dormancy class could not be identified. Published information on storage behaviour was only available for 30 of Sri Lanka's mangrove species, of that 57% had information at the species-level while 40 % and 3 % had generic- and family-level information, respectively. Among them, 17 species categorized into recalcitrant category and 13 species into orthodox category. Most of the recalcitrant seeds are non dormant (71 %) while, most of the orthodox seeds are dormant (69 %). Further research alone will unravel the relative importance and significance of dormancy and storage classes at the community level in this mangrove ecosystem.

Key words: recalcitrant seeds, orthodox seeds, physiological dormancy, physical dormancy