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INDUCED FLOODING AS ENVIRONMENTAL FILTER FOR RIPARIAN TREE SPECIES

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All figures shall be used in grey-scale, not colored.

Highlights

- We chose tree species classified as from flooded and non-flooded natural habitats.
- We submitted their seeds and seedlings to flooding and non-flooding treatments for 90 days.
- Germination was speed up by flooding and seedlings were harmed by flooding.
- Plant species indication for restoration of periodically flooded areas must take into account the plants tolerance to this environmental condition.

Abstract

The waterlogging of commonly non-flooded soils acts as a filtering for plant communities. River impoundments can flood a large area never flooded before, changing the local conditions and affecting seeds and growing plants. Therefore, the recruitment process in the regenerating community on these new formed margins may be inhibited. Lists containing plant species indicated for restoration of periodically flooded habitats have been published but the germination and initial development behavior of these species are poorly known. We hypothesize that species indicated to restore flooded habitats (FH) are faster to germinate and their seedling also develop better than species from non-flooded habitats (NH) under waterlogging conditions. Seeds of species from flooded and non-flooded habitats were submitted to treatments of flooding (F) and non-flooding (N) for 90 days, and germination was daily registered. Seedlings of *Psidium guajava* and *Handroanthus serratifolius* were submitted to flooding and morphophysiological parameters were measured. Species from both groups had similar patterns of germination, and for most species flooding led to a faster germination. In general, the number of germinated seeds was smaller under flooding. *P. guajava* seedlings presented decreasing growth and photosynthesis under flooding. And *H. serratifolius* seedlings presented chlorosis, foliar abscission, negative net photosynthetic rate, and root-rotting. Flooding was harmful for plants of both groups, but was worse for seeds and seedlings from NH species. The outcomes show that the use of plant species in restoration programs of dams