Diversity of hydraulic traits in nine Cordia species growing in tropical forests with contrasting precipitation.

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Choat B, Sack L, Holbrook NM.
New Phytol. 2007; 175(4):686-98

Peter Reich, University of Minnesota, MN, USA. F1000 Ecology

08 Apr 2008 | New Finding, Confirmation

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Choat and colleagues examined hydraulic traits of several Cordia tree species across a rainfall gradient, contrasting species within a genus, and populations within one of the species, along that gradient. They discovered that Cordia species from drier environments were more resistant to drought-induced embolism than those in wetter habitats, providing a link between habitat occupancy and ecologically relevant plant function.

However, this increased drought tolerance surprisingly did not require a trade-off in hydraulic capacity.

The authors also note that hydraulic traits varied more among species within a site than on average across sites. This is consistent with previous findings, such as regarding leaf traits, that have also shown traits to vary as much or more within sites among species than across large environmental gradients. Such results highlight the importance of functional trait variation and the capacity of species to develop distinct means of successfully occupying different niches within any given habitat.

Competing interests
None declared

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