

Special Issue

How Environmental Conditions Affect Photosynthesis of Tree Species – Limitations and Potentials

Message from the Guest Editors

Photosynthesis is crucial for the carbon balance of forest ecosystems and the whole biosphere. There is evidence that functional groups and different species of trees differ in key photosynthetic parameters such as maximal net CO₂ assimilation, maximal carboxylation and maximal energy transfer rates. Intraspecific variation of these parameters in trees, however, has been less investigated. The photosynthetic responses to increasing carbon dioxide concentration, light, temperature or drought depend on taxonomic and functional groups of trees; however, their physiological and molecular mechanisms have not been fully elucidated. Photosynthetic parameters derived from CO₂, light and temperature response curves among species are useful for modeling and predicting the behavior of trees in response to global climate change. This Special Issue will focus on the photosynthetic responses of forest tree species and ecotypes to environmental factors and their importance for silvicultural practice.

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