Carbon concentration variations in compartments of forest species. (CB/2013/222522).

Summary

Reliable calculations of carbon stocks in forest ecosystems are crucial for proper implementation of global warming mitigation policies. Accurate estimations depend upon applying the correct factor of carbon (C) concentration for different forest species and tissues instead of the often assumed 50% carbon content. Despite the high forest species richness in Mexico and the increasing CO_2 emissions, data on carbon concentrations in forest plant tissues are scarce. In this project, we determined variation in C concentration of different tissues for 175 plant species common in Mexican forests. C contents were estimated and contrasted for plant distribution, taxa, and plant structure (main stems, branches, twigs, bark, leaves, buds, fruits, roots and root cuticles). The mean C concentration across species was 44.7%. Species significantly differed in C concentration by tissue, environment and taxa. These multi-species data contribute to improve precision on estimates of C balance in terrestrial ecosystems, reducing the uncertainty in C inventories in Mexico and elsewhere.