**Towards a complete phylogenetic tree of angiosperm genera, including legumes!**

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The plant component of the Plant and Fungal Trees of Life (PAFTOL) project at the Royal Botanic Gardens, Kew aims to reconstruct a phylogenetic tree comprising at least one species representative of each genus of all (~13,700) angiosperm genera. This tree will be an essential tool for comparative evolutionary studies such as the analysis of traits and distribution data. Such a goal is now feasible due to the efficiency of methods used to extract DNA from herbarium specimens and the development of targeted enrichment approaches that allow the sequencing of a set of orthologous nuclear genes from species across all angiosperm families using a universal probe set. To date, the PAFTOL project has sourced material for 92% of genera and representative specimens have been sequenced for 60% of them. An angiosperm tree of life was reconstructed from the data which is available in the Kew Tree of Life Explorer data portal (https://treeoflife.kew.org) along with all supporting data1. In a recently published study, we have refined these analyses to explore the relationships of key groups in angiosperms and, by scaling the tree to time with fossils, have investigated the dynamics of diversification during angiosperm evolutionary history2. We are now finalising our search for the remaining genera with collaborators and from public resources for our final data release in the second half of 2025. As part of PAFTOL, we have made a particular effort at securing material for all the 796 genera of the legume family, which has been largely achieved.

***References:***

[1] Baker et al (2022) A Comprehensive Phylogenomic Platform for Exploring the Angiosperm Tree of Life. Systematic Biology 71, 301–319

[2] Zuntini et al (2024) Phylogenomics and the rise of the angiosperms. Nature 629, 843–850