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LONG-DISTANCE TRANSPORT IN PLANTS: PATHS, MECHANISMS, AND EVOLUTION

Summary

The paper presents how solutes are transported along a plant, with the special attention paid to the structure of conducting system and mechanisms of solute transport from a root system to a shoot versus photosynthate transport from leaves to other plant organs. The role of conducting system in transduction of biochemical and biophysical signals was underlined including the novel data of high molecular weight molecules, as proteins and nucleic acids (mRNAs, siRNAs, and miRNAs). Significant part of the paper is related to the evolution of phloem and xylem, in particular during the plant expansion into land environment.