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Sommario/riassunto	The papers included in this Special Issue address a variety of important aspects of Genetics, Genomics and Biotechnology of Plant Cytoplasmic Organelles, including new advances in the sequencing of both mitochondria and chloroplasts' genomes using Next-Generation Sequencing technology in plant species and algae including important crop and tree species, in vitro culture protocol, and identification of a core module of genes involved in plastid development. In particular, the published studies focus on the description of adaptive evolution, elucidate mitochondrial mRNA processing, highlight the effect of domestication process on plastome variability and report the development of molecular markers. A meta-analysis of recently published genome-wide expression studies allowed the identification of novel nuclear genes, involved in the complex and still unrevealed mechanisms at the basis of communication between chloroplast and nucleus (retrograde signalling) during plastid development (biogenic control). Finally, an optimized regeneration protocol useful in plastid transformation of recalcitrant species, such as sugarcane, has been reported.