1. Record Nr. UNINA9910345964703321 Autore Purificacion Lison Titolo Relevance of Translational Regulation on Plant Growth and **Environmental Responses** Frontiers Media SA, 2018 Pubbl/distr/stampa Descrizione fisica 1 electronic resource (138 p.) Collana Frontiers Research Topics Lingua di pubblicazione Inglese **Formato** Materiale a stampa

Monografia

Sommario/riassunto

Livello bibliografico

Plants, as sessile organisms, are exposed to a large array of challenging external and internal alterations that may restrict plant growth. These limiting growth conditions activate plant signalling responses which eventually target the protein synthesis machinery to rapidly reprogram plant metabolism to adapt to the new situation. Thus, the control of mRNA translation is one key regulatory step of gene expression and it is an essential molecular mechanism used by plants to bring about impressive growth plasticity. Compared to the vast number of studies aimed to identify plant transcriptional changes upon hormonal or environmental cues, the subsequent steps of mRNA transport, stability, storage, and eventually translational regulation, have been less studied in plants. This lack of knowledge concerns not only the fate of proteincoding transcripts in plants, but also the biogenesis and maturation of rRNAs, tRNAs and the plant translation factors involved. In this eBook we have focused on how internal cues and external signals of either biotic or abiotic origin impact translation to adjust plant growth and development. We have collected altogether ten scientific contributions to extend the knowledge on plant post-transcriptional and translational events that regulate the production of proteins that execute the required cellular functions. We hope that this compilation of original research articles and reviews will provide the readers with a detailed update on the state of knowledge in this field, and also with additional motivation to improve plant growth adaptation to future environmental