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The Transition from Seed to Seedling II

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Message from the Guest Editors

Seed germination represents a critical stage in plants' life cycles. This process includes three important events—tissue hydration, the activation of metabolic activity, and the mobilization of reserve nutrients. The resumption of metabolic activity begins with the reactivation of enzymatic systems to repair the damages that inevitably accumulate in DNA, RNA, and proteins. The crucial hormonal signal is a balance between abscisic acid and gibberellins, but other hormones such as auxins, brassinosteroids, ethylene, cytokinins, and jasmonates are also involved. A network of transcription factors known as the LAFL as well as DOG1 are the negative regulators of seed germination. They should also be repressed before seedling development. This repression is associated with chromatin remodeling by Polycomb complexes, as well as the PICKLE proteins. Epigenetic modifications, including the methylation of DNA cytosine, histone modifications, and the post-transcriptional downregulation of seed maturation genes with miRNA, need to be discussed.



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Message from the Editor-in-Chief

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