Development Related Termination of the Root Apical Meristem Activity

Abstract

Root system architecture is modulated through growth and branching of individual roots, while the growth is strictly regulated via long term apical meristem (RAM) maintenance and cell elongation. RAM activity is not consistent during root ontogeny, which was shown in several dicotyledonous species as change in root meristem structure and decline in root growth rate during individual root development.

This thesis is focused on changes in extent and arrangement of meristematic tissues and their derivatives within adventitious roots of *Acorus calamus* and *Oryza sativa* during long term cultivation. Changes in meristem and elongation zone length, the root cap length, radial tissue complexity, as well as the changes in root hair emergence, etc., are put into relation with quantified expression level of selected important regulatory elements taking part in RAM maintenance (*WOX* and *SCR* family transcription factors). Methodology and approach for future research in this field are outlined.

Keywords: Root, Apical Meristem, Root System Architecture, RAM Termination