



## Secondary growth in the *Arabidopsis* hypocotyl

By Widi Sunaryo

Cuvillier Verlag Dez 2010, 2010. Buch. Book Condition: Neu. 216x146x4 mm. Neuware - Secondary growth results from cell division and differentiation in the vascular cambium and gives rise to secondary xylem and phloem. Xylem of trees, commonly referred to as wood, is an important carbon source used for woody materials and industrial purposes such as timber, pulp, furniture, fibers, and also as a energy source. Although abundant data has been collected to address the genetic control of cambial activity and differentiation, the mechanism behind is still little known. The *Arabidopsis* hypocotyl has previously been shown to be a suitable model for secondary growth and xylem differentiation similar as it occurs in angiosperm trees. Plant development requires a tightly controlled balance between undifferentiated dividing cells and cells, which are subjected to undergo differentiation. In the shoot apical meristem of *Arabidopsis*, this process is governed by a complex signaling network involving several classes of transcription factors, which are often expressed in highly distinct patterns. Key-players of differentiation control are the KNOX genes (Knotted-1 like genes; e.g. KNAT1, KNAT2, STM), which comprise a small gene family with eight members in *Arabidopsis thaliana*. This project was aimed to investigate the role of KNOX genes...

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