UNIVERSITÄT BONN

Die Botanischen Institute

Einladung zum Botanischen Kolloquium

Freitag, den 20. Juli 2018, 12 c.t.

Nussallee 4, Hörsaal Botanik

Referent: Prof. Dr. Katsuhiro Shiono

Department of Bioscience and Biotechnology, Fukui Prefectural University, Japan

Thema: „How rice regulates the root aeration system under water?"

Wetland plants including rice (*Oryza sativa*) can grow in waterlogged soil because it has a well-developed internal aeration system (aerenchyma) from shoot to root. A barrier to radial oxygen loss (ROL) that can enhance oxygen transport via aerenchyma to the root apex, is a key strategy for wetland plants to grow in waterlogged soil. Suberin and/or lignin are thought to be constituents of the barrier to ROL. But, it is not known which genes and plant hormone are involved in inducing ROL barrier formation. In rice, ROL barrier formation can be induced in adventitious roots by stagnant or waterlogged conditions. Thus, we identified a timing of ROL barrier induction in rice using cylindrical electrode (Shiono et al. Annals of Botany, 2011). We identified 98 up-regulated genes that were expressed in the outer part of roots during ROL barrier formation (Shiono et al. Journal of Experimental Botany, 2014). The expressions of 57% of these genes were strongly stimulated by exogenous abscisic acid (ABA). An ABA-deficient mutant, *osaba1*, did not form a barrier under stagnant conditions, but the barrier was rescued by application of ABA. Our findings suggest that ABA is an inducer of suberization at the exodermis, resulting in ROL barrier formation in rice. In this seminar, I want discuss how the formation of the ROL barrier formation might be regulated?

Diskussionsleitung: Prof. Dr. L. Schreiber, IZMB, Ökophysiologie

Die Dozenten der Botanischen Institute

Zu diesem Vortrag und zu einer evtl. Nachsitzung sind Sie herzlich eingeladen