岩 生 工 セ 号 外
平成 29 年 4 月 17 日

各　　位

公益財団法人岩手生物工学研究センター
理事長　杉　原　永　康

公開セミナー(第 235 回)の開催について

平素、当センターの研究遂行につきましては、特段のご配慮を賜り、感謝申し上げます。
さて、標記について、別紙のとおり開催しますので、ご案内申し上げます。
聴講をご希望の方は、下記様式によりお申し込みください。
なお、当日参加も可能です。

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公開セミナー申込書（ファックス、e メール可）

所　　属	職　名	出席者氏名	備　考

（公財）岩手生物工学研究センター　第 235 回公開セミナー

開催日時：平成２９年４月１９日（水）
１０時００分～１１時００分

会　　場：（公財）岩手生物工学研究センター　大会議室

参加対象：センター職員、県試験場、農業大学校、独立行政法人（東北農研、果樹研、森林総研）、岩手大学など関係研究機関

演　題１：Managing ice in the winter wheat crown:proteomic and biochemical responses during cold acclimation in the apoplast provide a new theory on freezing stress resistance mechanisms.

講　師１：Karen Kikumi Tanino, Ph.D.
Professor, Department Plant Sciences, University of Saskatchewan

要　旨１：

The most critical region for winter wheat (*Triticum aestivum* L.) freezing survival is the crown. Even in cold acclimated crowns, ice formation in the apoplast can result in severe tissue disruption. Since the apoplast is the primary physical barrier of ice propagation into cells and may also regulate water flow, we believe that apoplastic components play an important role in limiting frost damage within critical tissues of the crown. **Shotgun proteomic analysis identified differences in antifreeze protein abundance and cell wall modification proteins between 'Norstar' crown apical and vascular transition zone tissues. These protein abundances translated into differences in rates of freezing, ice nucleation temperature and degree of damage.** Modifications to the protein profile correlated with tissue-specific spatial localization of key wall biochemical constituents mapped using **FTIR spectroscopy and HPLC. These results provide insight into the role of apoplastic modifications as a way in which acclimated winter wheat may manage freezing stress within specific crown tissues as well as help to address the role of the apoplast in winter cereal tolerance to low temperature stress.**

演　題２：MAPK signaling network to chilling stress response in rice

講　師２：Name: **Guosheng Xie**, Ph.D.
Professor, College of Plant Science and Technology, Huazhong Agricultural University, Wuhan, China

要　旨１：

Chilling stress in rice is one of the important serious environmental factors to reduce the yield and quality in the high-altitude or high-latitude regions of south-east Asia. Here, genetic and biochemical approaches have been employed to constitute a MAPK pathway in the chilling response in rice seedlings. Moreover, the putative network associated with calcium signaling and phospholipase Dα1 has been proposed, implicating the complicate regulation in the chilling tolerance process in rice and beyond.