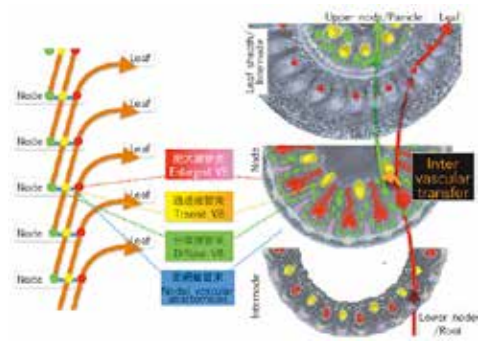




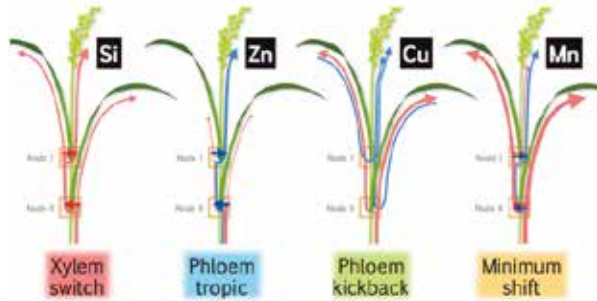
Assoc. Prof. YAMAJI Naoki



Mineral nutrients required for plant growth and development are taken up by the roots from soil solution, and then delivered to different organs and tissues depending on their requirements. In Poaceae, this selective distribution is mainly mediated in the nodes, which have highly developed and fully organized vascular systems. We found that “Inter-vascular transfer” of mineral elements from enlarged vascular bundles to diffuse vascular bundles is required for their preferential distribution to developing tissues and reproductive organs.



Studies on mineral distribution control systems in plants



A number of transporters involved in this inter-vascular transfer processes have been identified mainly in rice. They are localized at the different cell layers and form an efficient machinery in the node. These findings will be applicable to improve productivity, nutritional value and safety of cereal crops.

Representative references

Yamaji N. et al. Reducing phosphorus accumulation in rice grains with an impaired transporter in the node. *Nature* 541:92-95. (2017)
 Yamaji N. and Ma J.F. Node-controlled allocation of mineral elements in Poaceae. *Current opinion in plant biology* 39:18-24. (2017)