

# 40<sup>th</sup> FEFCO

Forest Ecosystem Function Colloquium (FEFCO) は、地域や地球全体のレベルで森林生態系の機能とその持続的活用法を統合的に理解することを目的とし、研究者間の学術交流を推進します。

第40回森林生態系機能コロキウムは、小八重善裕博士にご講演いただきます。どなたでも参加できますので、多くの皆様のご参加をお待ちしております。京都大学農学研究科森林生態学研究室がホストを務めます。

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アーバスキュラー菌根共生の基礎と応用

Biological basis of arbuscular mycorrhizal symbiosis  
and its agricultural utilization

Many of plant species are colonized with arbuscular mycorrhizal fungi (AMF) in the roots. Through this symbiosis, plants achieve its improvement of nutrition, disease resistance, drought tolerance, and increase productivity. However, some enigmatic phenomenon, such as an extremely short life span (only a few days of intracellular colonization), co-colonization of multiple different AMF within roots, and the genetic heterogeneity within each AMF, have delayed the progress of this research. We have developed a live imaging of mycorrhizal symbiosis in soil for the first time, and have elucidated the cell dynamics and developmental mechanism of mycorrhizas. Furthermore, we have recently developed a novel method to analyze the genetic information of each AMF in roots. In this seminar, I would like to introduce the basic knowledge of AM symbiosis at the cellular level and our research strategies to utilize this symbiosis in agriculture.