Plant’s Immune Response to Communication through Common Mycorrhizal Networks (CMNs)

Hwang, Huiseon

Plants can communicate with each other through common underground mycorrhizal networks (CMN). In this study, we show that CMN can act as a conduit for signals that affect immune response in plants. Plants were examined whether they would have enhanced immune response by communicating with other plants that had been exposed to a pathogen. To do this, plants were compared that they were connected with other plants through CMN and with plants that have no connections. I examined activity of phenylalanine ammonia-lyase (PAL), an important defense enzyme, in plants treated with tobacco mosaic virus. Higher the PAL activity, stronger the immune response. The results showed that the connected group exhibited higher PAL activity than the non-connected group, which indicates that a possible relationship exists between interplant communication via CMN and an enhanced immune system.

Awards Won:

Fourth Award of $500