Fungi in and around trichomes of Sawtooth Oak leaves

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Brown spots occurred on naturally infected leaves of Quercus acutissima (sawtooth oak) in Suwon, Korea. Field emission scanning electron microscopy revealed that hyphal branching and spore chains were evident on the adaxial leaf surface. Trichomes were usually colonized by septate hyphae. Hyphae coiled the trichomes and appeared to inhibit the unfolding of trichome branches. Plant cell wall modifications and epidermal shrinkage of trichomes were apparent around hyphae. Hyphal growth appeared to disrupt the non-glandular trichomes on the abaxial leaf surface. Transmission electron microscopy revealed that fungal hyphae were present in the naturally infected trichomes of the oak species. Concentric bodies were often found in the hyphal cytoplasm. These results suggest that the foliar trichomes of sawtooth oak would be fungal infection sites as well as the protective surface structures against a variety of external stresses to the plant.

Biography

Ki Woo Kim has completed his PhD from Seoul National University, Korea. He is currently an associate professor at Kyungpook National University, Korea. He has over 100 publications that have been cited over 2,600 times, and his publication H-index is 25 and has been serving as an editorial board member of reputed journals.

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