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Editorial Special Issue: Plant Interactions With Microbes and Environment

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Editorial Special Issue: Plant interactions with microbes and environment

This issue of Current Plant Biology has a collection of twelve articles focused on the plant's interaction with microbes and the environment. Plants being an important source of nutrition for humans are equally important for both beneficial and harmful microbes and insects. Continuous efforts are on to control the effects of harmful microbes. We would like to acknowledge and say thank you to all the reviewers who gave their valuable time during these testing times due to the COVID-19 pandemic.

The first article of this issue by **Dastogeer et al.** [1] reviews the progress made in the growing field of the plant microbiome with a special focus on the drivers that shape the composition of the microbiome community. Engineering of plant microbiome to assist agriculture could have a profound effect on crop yield and resilience.

He et al. [2] describe the effects of enhancement of liquorice (*Glycyrrhiza uralensis* Fisch.) plants with the use of dark septate endophytes on the root growth, glycyrrhizic acid, and glycyrrhizin accumulation. Liquorice has pharmacological importance due to its glycyrrhizic acid and glycyrrhizin contents which have anti-tumor, antioxidant, anti-bacterial, and anti-viral effects.

Jorge Poveda [3] summarizes progress on the use of *Marchantia polymorpha* as an emerging model system for the evolutionary study of plant-microorganism interactions. *M. polymorpha* is a common liverwort found naturally in many parts of the world. Interestingly, only a few pathogens have been reported to infect this bryophyte.

Elango et al. [4] describe the isolation and characterization of the extracellular enzyme produced by *Aspergillus sojae,* an endophytic fungus of Oregano (*Plectranthus ambionicus*) plant. The isolated enzyme was used to control cotton leafworm, *Spodoptera litura* which is an insecticide-resistant pest on cotton and many other economically important crops.

Nkere et al. [5] describe the prevalence of Yam mild mosaic virus (YMMV), a potyvirus in Ghana and Nigeria by assessing the coat protein gene sequence diversity. Yam (*Dioscorea spp.*), a starchy tuber is an important food crop in African countries, and YMMV infection causes significant loss of crop yield.

Devi et al. [6] describe the chemically induced systemic acquired resistance against rust disease of French bean caused by *Uromyces appendiculatus.* The rust in French beans causes up to 65 % loss in yield. Authors show that the treatment of bean plants with potassium dihydrogen phosphate induced significant resistance against *U. appendiculatus*.

Lucas-Bautista et al. [7] describe the use of chitinase activity as a biomarker to detect *Colletotrichum gloeosporioides* infection in papaya fruits. *C. gloeosporioides* causes of one of the most important postharvest diseases in papaya fruits.

Gupta et al. [8] have described the use of two isolates of *Pseudomonas flurescens* growing in the rhizosphere to control the mustard blight caused by *Alternaria brassicae*.

Ali et al. [9] describe the single-step preparation of iron-nanoparticles using *Calotropis procera* leaf extract. These iron-nanoparticles were used to evaluate their antifungal activity against phytopathogenic fungi *Alternaria alternata. A. alternata* is a causal agent of various plant diseases including citrus canker, core apple rot, dragon fruit black rot, nettled rot in melon. The nanoparticles prepared using *Calotropis procera* exhibited high efficacy against *A. alternata*.

Kamal Kumar et al. [10] describe the stimulatory effects of fabricated nanosilver (AgNPs) on *Psophocarpus tetragonolobus* seed germination. Seed priming is an important technique used to improve seed germination. At the enzymatic level, seed priming improves various antioxidative enzyme activities.

Shayan et al. [11] describe the analysis of leaf proteome in two bread wheat varieties under water deficit stress conditions. Authors have used two-dimensional gel electrophoresis followed by analysis using MALDI-TOF/TOF mass spectrometry. Several proteins involved in photosynthesis, glycolysis, stress, defense, and detoxification were identified. This study is likely to increase our knowledge of drought stress response in bread wheat.

Trocsanyi et al. [12] in a review article discuss the biosynthesis of rosmarinic acid. Rosmarinic acid is an important pharmacological compound known for its anti-inflammatory, antioxidant, astringent, antimutagenic, antibacterial, and antiviral activities.

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