

## Salicylic Acid Signalling in Relation to Root Colonization in Rice

**Authors :** Seema Garcha, Sheetal Chopra, Navraj Sarao

**Abstract :** Plant hormones play a role in internal colonization by beneficial microbes and also systemic acquired resistance. They define qualitative and quantitative nature of root microbiome and also influence dynamics of root rhizospheric soil. The present study is an attempt to relate salicylic acid (signal molecule) content and qualitative nature of root endophytes at various stages in the growth of rice varieties of commercial value- Parmal 121 and Basmati 1121. Root seedlings of these varieties were raised using tissue culture techniques and then they were transplanted in the fields. Cultivation was done using conventional methods in agriculture. Field soil contained 0.39% N, 75.12 Kg/hectare of phosphorus and 163.0 Kg/hectare of potassium. Microfloral profiling of the root tissue was done using the selective microbiological medium. The salicylic acid content was estimated using HPLC-Agilent 1100 HPLC Series. Salicylic acid level of Basmati 1121 remained relatively low at the time of transplant and 90 days after transplant. It increased marginally at 60 days. A similar trend was observed with Parmal 121 as well. However, Parmal variety recorded 0.935 ug/g of salicylic acid at 60 days after transplant. Salicylic acid content decreased after 90 days as both the rice varieties remained disease free. The endophytic root microflora was established by 60 days after transplant in both the varieties after which their population became constant. Rhizobium spp dominated over Azotobacter spp. Genetic profiling of endophytes for nitrogen-fixing ability is underway.

**Keywords :** plant-microbe interaction, rice, root microbiome, salicylic acid

**Conference Title :** ICNF 2018 : International Conference on Nitrogen Fixation

**Conference Location :** London, United Kingdom

**Conference Dates :** June 28-29, 2018