

3rd International Conference on **Agriculture & Horticulture**

October 27-29, 2014 Hyderabad International Convention Centre, India

Phytochrome mediated growth and development in rice: A review

Darshan Panda¹, M J Baig² and B C Tripathy³

¹Ravenshaw University, India

²Central Rice Research Institute, India

³Jawaharlal Nehru University (JNU), India

Phytochromes are photoreceptors that sense red and far-red light to regulate a range of developmental processes throughout the life cycle of plants. In rice three species of Phytochromes(PHY), namely PHYA , PHYB and PHYC ,are present. It has been reported that individual phytochromes perform both unique and overlapping roles in rice photomorphogenesis by characterization of all rice phytochrome mutants including single mutants, all combinations of double mutants as well as triple mutants. Significant functions performed by Phytochromes in rice are regulation of seedling de-etiolation, regulation of angle between leaf blade and sheath, regulation of root gravitropic response, inhibition of seminal root elongation, suppression of internode elongation, regulation of stomatal number and regulation of fertility. Phytochromes are also involved in the regulation of genes encoding the smaller subunit of ribulose-1,5 biphosphate carboxylase and chlorophyll a/b binding (CAB) protein of the light harvesting chlorophyll-protein complex. Rice grown in Kharif season (June to December) received reduced light due to overcast of sky. Studies related to phytochrome shall be helpful for improvement of rice breeding program specially grown in the monsoon season and low light conditions.

Biography

Darshan Panda is a PhD student at Department of Biotechnology, Ravenshaw University, Cuttack, Odisha. He is working on the roles performed by *Phytochrome A* in controlling rice development and productivity.

darshan.panda216@gmail.com