



ICOM 9

9th International Conference
on Mycorrhiza

BOOK OF ABSTRACTS

Prague, Czech Republic
30TH JULY – 4TH AUGUST 2017



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P (ID 21)**High phosphorus tolerant mutants of *Gigaspora* sp. induced by Gamma rays and UV irradiation**

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Gigaspora sp. is one of the Arbuscular Mycorrhiza fungi that are now widely used to improve plant growth and health. However, spore germination of this species will be inhibited in high phosphorous (P) environment. The aim of this study was to obtain *Gigaspora* sp. mutants which are tolerant to high P condition using Gamma rays and UV irradiation.

The spores of *Gigaspora* sp. were exposed to Gamma rays with different irradiation dose i.e. 0, 30, 100, 300, 1000, and 3000 gray. Some other spores were exposed to UV light in UV chamber ($\lambda=254\text{nm}$) for 0, 5, 10, 20, 40, and 60 minutes. The treated spores were then put inside cell culture cluster consisted 96 wells which already contained 2000 ppm P solution. Each well was received single spore. The spores were then kept in incubator at temperature of 30°C for 4 weeks after which the number of germinated spore were counted for every treatment.

In this study, we obtained 17 mutants (nine from gamma rays and six from UV) which were able to germinate in 2000 ppm of P solution. None of the wild type were germinated in the mentioned above P concentration. This result indicated that this Gamma rays and UV irradiation can be used as useful tools to improve survival capability of *Gigaspora* sp. in high phosphorus environment.

Keywords: *Gigaspora*, mutant, Gamma ray, UV, irradiation