Variation in mycorrhizal specificity for in vitro symbiotic seed germination of grammatophyllum speciosum blume.

ABSTRACT

Grammatophyllum seeds are minute and lack endosperm. As with their other orchids counterpart, the seeds are dependent on mycorrhizal fungi for seed germination in nature. The ability to uptake nutrients from substrate is assisted by preferable fungal symbionts. Seeds of Grammatophyllum speciosum Blume. were used to determine the specificity of its fungus relationship using fungi isolated from roots of G. speciosum, G. stapeliiflorum and G. scriptum. A total of 31 different species of fungus was isolated and inoculated onto G. speciosum seed on Oat Meal Agar (OMA). The result obtained from the test demonstrated that seed germination rates were best when co-cultured with Fusarium sp. number 3 isolated from G. speciosum. An increment in 63.3% was measured when compared to the seed's original size. The seed can also germinate when inoculated with fungus isolated from different species, implying that G. speciosum is a generalist in its association with fungal symbionts.

Keyword: Epiphytic orchid; Germination; Seed viability; Specificity.