INFLUENCE OF MYCORRHIZA (*GLOMUS* SPP.) ON FLOWERING, YIELD AND QUALITY OF DRAGON FRUIT (*SELENICEREUS MONACANTHUS*) IN EASTERN TROPICAL REGION OF INDIA

Ankita Sahu[1] & Kundan Kishore[2]

[1]ICAR-Central Institute for Women in Agriculture, Bhubaneswar-751003, India
[2]Central Horticultural Experiment Station (ICAR-IIHR), Bhubaneswar-751019, India

sahuankita29@gmail.com, kkhort12@gmail.com

ABSTRACT

In India, dragon fruit is considered as a potential exotic fruit crop owing to its market value and nutritional significance. Nutrient management is a crucial agronomic practice to enhance yield potential of dragon fruit in acidic soils of eastern tropical region of India. In this context, the efficacy of mycorrhiza (*Glomus* spp.) was assessed in influencing flowering, yield and fruit quality of dragon fruit. Four levels of mycorrhiza viz., 100g, 200g, 300g and 400g/hill along with varying levels of P viz., 50%, 75% and 100% were applied. Effectiveness of mycorrhiza was compared with the recommended dose of fertilizers and control. In all there were 14 treatments which were replicated thrice and each replicate comprised of 2 hills (4 plants/hill). Application of mycorrhiza @ 300g + 50% P significantly enhanced chlorophyll content, flower bud emergence (13 buds/plant/flush), harvestable fruits and yield (> 50% of RDF). Furthermore, mycorrhiza @300g + 50% P significantly increased fruit weight (267±5g), total soluble solids (18.0±3°B), reducing sugar (14.5±1%), total carbohydrate (16.3±1%), protein content (1.52±0.25%), citric acid (0.75±0.1%), ascorbic acid (155.4±6°g/ml) and betacyanin content. However, the sugar/acid ratio was significantly lower in case of mycorrhizal treatment. The antioxidative properties such as total phenol content, flavonoid content and FRAP activity were also significantly higher with mycorrhiza @300g + 50% P. It was observed that application of mycorrhiza with 50% P substantially increased flower induction as well as fruit quality attributes of dragon in comparison to RDF. The study indicates good association of *Glomus* spp. with the roots of dragon fruit which might have facilitated better plant growth and nutrient use efficiency.

Keywords: mycorrhiza, *Selenicereus monacanthus*, yield, quality, anti-oxidant activity