



## Research Paper

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# Effect of different Arbuscular Mycorrhizal fungi on vegetative parameters of jamun rootstock and graft success

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**ABSTRACT :** Cultivated jamun rootstocks inoculated with *Glomus fasciculatum* recorded significantly highest rootstock height at 90 DAS (33.31 cm), while uninoculated rootstocks recorded significantly minimum height at 90 days after sowing (26.61 cm). Wild jamun rootstocks inoculated with *Glomus fasciculatum* recorded significantly highest rootstock height at 90 days after sowing (30.91 cm). The uninoculated wild rootstocks recorded significantly lowest height at 90 days after sowing (23.92 cm). However, higher diameter of rootstock was observed in mycorrhiza inoculated plants compared to uninoculated seedlings. Wild jamun rootstocks inoculated with *Glomus fasciculatum* recorded significantly highest diameter of rootstock at 90 days after sowing (4.81 mm). The uninoculated rootstocks recorded significantly minimum diameter of rootstock at 90 days after sowing (3.94 mm). The number of leaves on rootstocks indicated that cultivated jamun rootstocks inoculated with *Glomus fasciculatum* recorded significantly maximum leaves at 90 days after sowing (19.07), while rootstock inoculated with *Glomus intraradices* at 30 (5.87), uninoculated rootstock at 60 (8.33) and 90 days after sowing (12.27) recorded significantly minimum leaves. Wild jamun rootstock inoculated with *Glomus fasciculatum* recorded significantly more number of leaves at 90 days after sowing (23.07), while significantly least number of leaves were recorded in uninoculated rootstock at 90 days after sowing (19.87). The grafting success indicated that, cultivated grafts on rootstocks inoculated with *Glomus fasciculatum* registered significantly highest grafting success (63.33%), while uninoculated grafts registered significantly least grafting success 30.00 per cent. Wild jamun rootstocks inoculated with *Glomus fasciculatum* registered significantly highest grafting success (60.00%), while uninoculated grafts registered significantly least grafting success of 10.00 per cent. The graft survival revealed that there was no significant result among the cultivated jamun grafts for graft survival. However, higher graft survival was observed in mycorrhiza inoculated grafts compared to uninoculated grafts. Wild jamun grafts inoculated with *Glomus fasciculatum* registered significantly highest graft survival (94.44%), while uninoculated grafts registered significantly least graft survival (65.50%).

**KEY WORDS :** Cultivated jamun rootstock, Wild jamun rootstock, Arbuscular Mycorrhizal fungi, Grafting success, Grafting survival

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The jamun (*Syzygium cumini* Skeels), a member of family Myrtaceae is one of the important underutilized fruit crops. It is highly valued in India for a number of medicinal properties in its fruit, seeds and leaves. The vinegar prepared out of juice extracted from slightly unripe fruits is stomachic, carminative and diuretic, apart from having cooling and digestive properties (Thaper, 1958). The global demand for organic food/fruits is steadily increasing at an average

growth rate of 20 per cent (Singh *et al.*, 2005). This shift in the scenario necessitates raising the seedlings/rootstocks organically from the nursery itself to ensure better growth particularly more stem girth development which is of paramount importance for early grafting and higher graft-take. Early grafting would be able to meet ever increasing demand for elite planting materials. Jamun trees being exist in wild form in nature without much care growing by organic is very