



## Research Paper

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# Studies on the propagation of apple clonal rootstock Merton 793 through hardwood cuttings

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**ABSTRACT :** The investigation on propagation of apple clonal rootstock Merton 793 (*Malus x domestica* Borkh.) through hardwood cuttings was carried out under 70% shade net to find out the effect of growth regulators, pre-conditioning treatments and bio-inoculants on rooting and growth of apple cuttings. There were 13 treatments comprising growth regulators IBA @ 2000, 2500, 3000 ppm each and in combination with pre-conditioning treatments (blanching and girdling) and different bio inoculants like *Bacillus licheniformis* strain CKA B6, *Aneurinibacillus aneurinilyticus* CKMVI and *Bacillus circulans* MTCC8983.CKA4 along with untreated control. Pre-conditioning followed by IBA proved to be superior in all rooting and growth parameters. IBA 2500 ppm + girdling was considered to be the best treatment which resulted in highest per cent rooting, number of primary roots per cutting, primary root length, total root length, fresh and dry weight of shoot, fresh and dry weight of root and root: shoot ratio. Whereas, primary root length, shoot length, leaf number and average leaf area was found to be maximum in IBA 2500 ppm + blanching. However, IBA 2000 ppm + girdling gave highest primary root diameter and shoot diameter. Hence, pre-conditioning treatment in combination with IBA could be conveniently used for the commercial propagation of apple through cuttings planted under 70 per cent shade net, which would be more economical and commercial.

**KEY WORDS :** *Malus x domestica*, Cuttings, Growth regulator, Blanching, Girdling, Bio-inoculants

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