Effects of IBA and NAA growth regulators on rooting of apple rootstocks (M9, M26 and MM106) cuttings

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With regards to the necessity for establishment of monotonous apple orchards in order to reach high production yield and also to minimize production costs, the present research work was carried out. This research work was focused on two propagation methods. Cutting and layering of MM106, M26 and M9 apple rootstocks. The propagation method by the use of cuttings was investigated in a factorial design with 3 replications and three factors consisting of three types of cuttings, i.e. softwood, semi-hardwood and hardwood cuttings. Type of rootstocks in 3 levels (M9, M26 and MM106), and hormones in 10 levels, that are IBA with 1000, 2000 and 3000 ppm, NAA with 1000, 2000 and 3000 ppm and mixed NAA+IBA with 1000, 2000 and 3000 ppm. Results including rooting ability, stem diameter, number of roots per cuttings, average length of roots, dry weight of roots, maximum length of roots, mean number and length of new shoots were recorded.

The results of analysis of variance indicated that rooting characteristics of the examined rootstocks are different. The cuttings prepared from MM106 rootstocks have higher rooting percentage when compared with other two while M9 rootstocks have the lowest rooting percentage. Semi-hardwood cuttings, when compared with the other two, have higher rooting percentage in all 3 rootstocks. Cutting treated with hormones had better rooting ability when compared with control. Among different hormones, the mixture of IBA+NAA at 1000 ppm was more effective in regards to rooting percentage and other factors compared with their individual appliction.

The results of propagation by layering method on M26, M9 and MM106 rootstocks indicated that this method properly suit the rooting of M26 rootstock where as M9 and MM106 stand after that with the same potantial for rooting in this method. MM106 produced much better results compared to M9 and M26 from the point of any other variables recorded.