

embryo-forming callus in Murashige and Skoog (MS) liquid medium, filtering through nylon mesh, and plating a thin layer on the agar medium. By this process, it was estimated that we can easily obtain more than 300,000 plantlets from one mother plant using its young leaves.

At present, inspection of in vitro micropropagated plants has shown uniform traits of sprouting time, stalk colour, internode length, and flowering time.

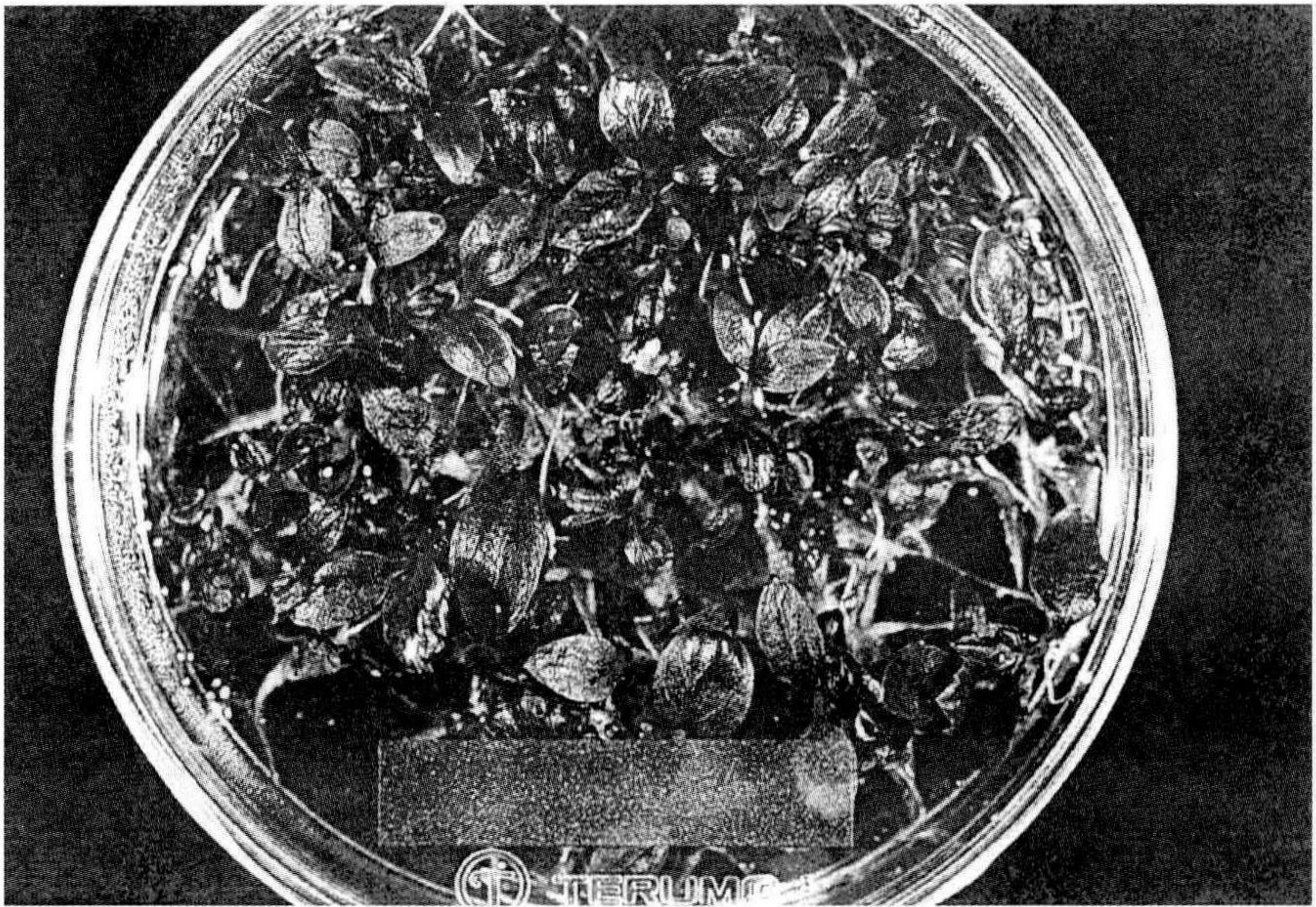


Figure 1. Young plantlets of yama-udo (*Aralia cordata*) regenerated from tiny embryos sown on the MS medium in vitro.

Changes in the Rooting Response of Two Miniature Roses During Micropropagation.

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The rooting ability of a number of difficult-to-root woody plant species has been markedly increased by repeated in vitro subculturing. This phenomenon is referred to as “rejuvenation by in vitro culture.” In the present study, the relationship between the degree of rooting ability and “rejuvenation” is discussed with in vitro cultured miniature roses.

Rejuvenation efficiency was evaluated by percent rooting, number of roots, percentage of elongated lateral shoots, and flowering in vitro. Only the rooting results are presented.

In the cultivar Fashion Parade, the ease of rooting was the highest at five times subculturing and declined after five subcultures (Figs. 1 and 2). This suggested that the shoots may be aging. In contrast, with the cultivar Alba Meilandina, the ease of rooting was the highest at six times subculturing (Figs 3 and 4). Therefore, there were cultivar differences in "rejuvenation."

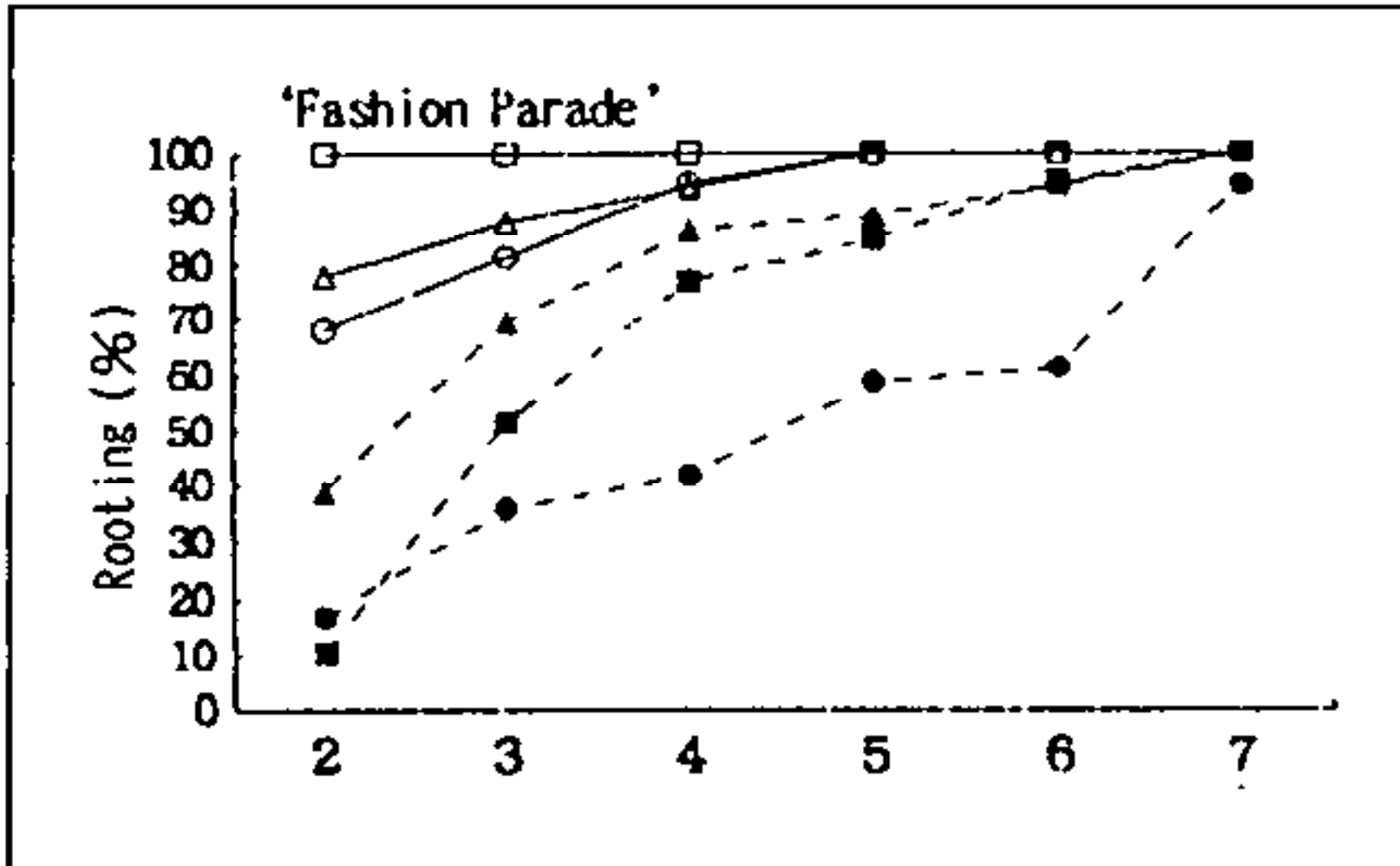


Figure 1. Change in rooting rate after rooting induction treatment.

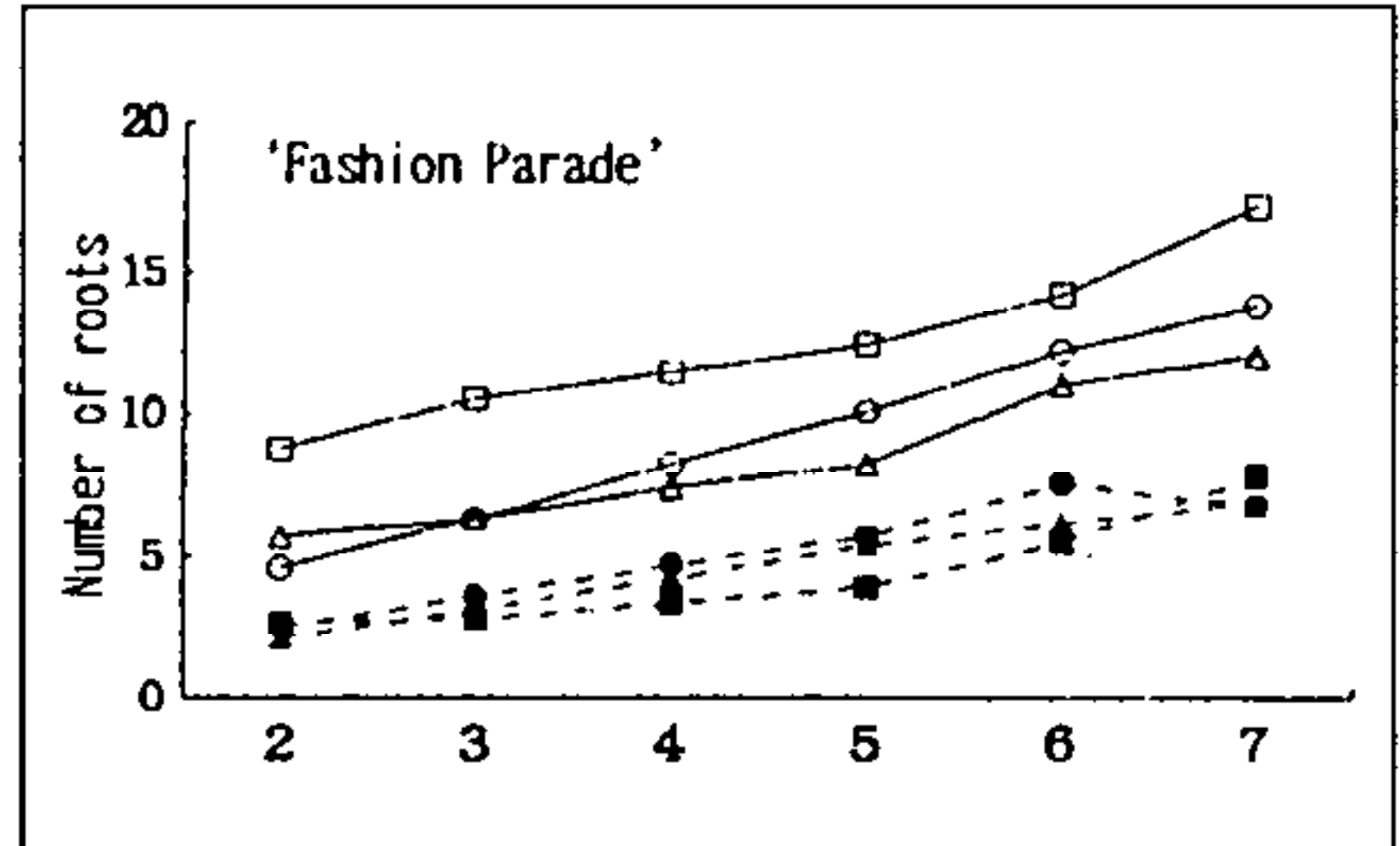


Figure 2. Change in number of roots after rooting induction treatment.

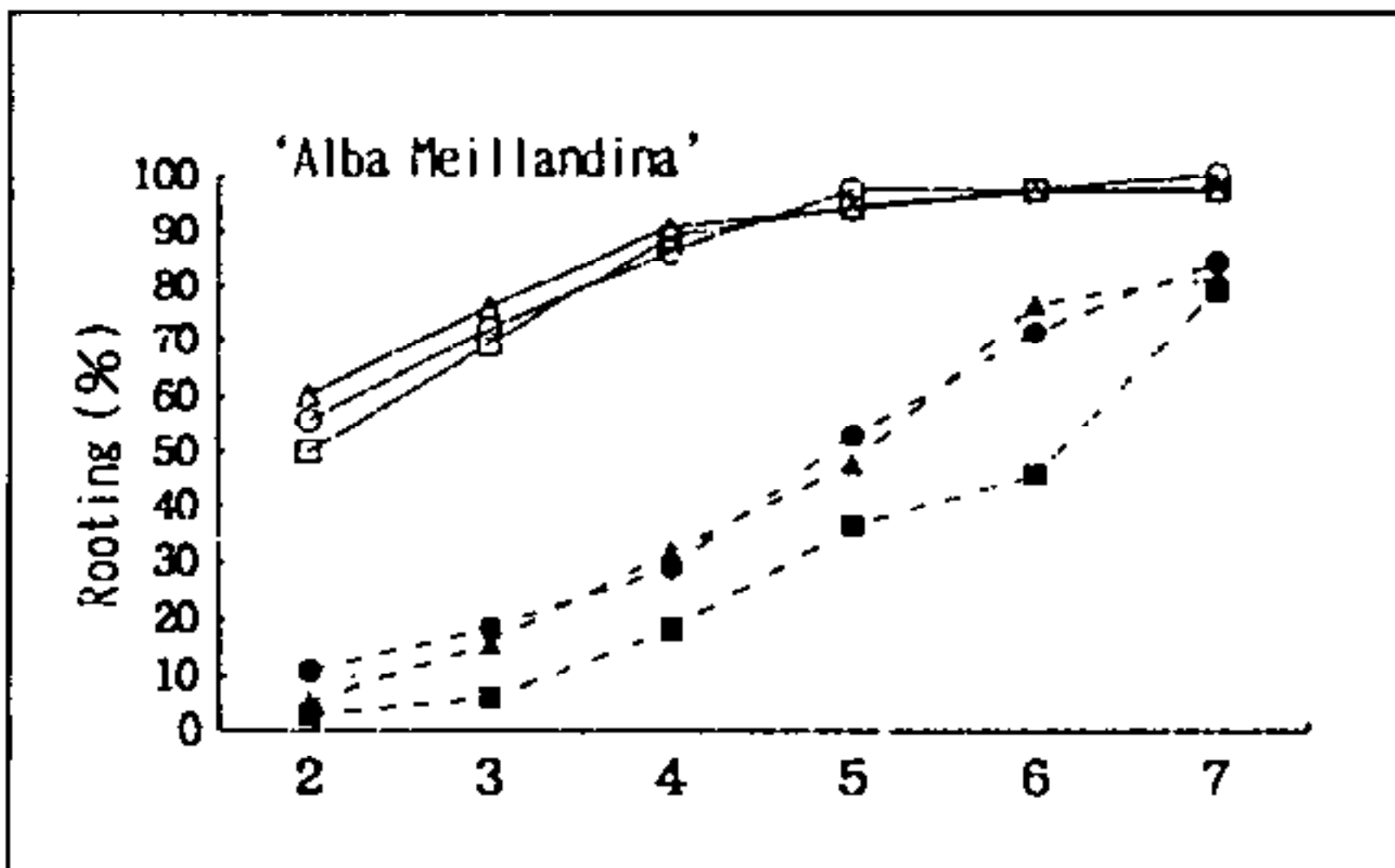


Figure 3. Change in rooting rate after rooting induction treatment.

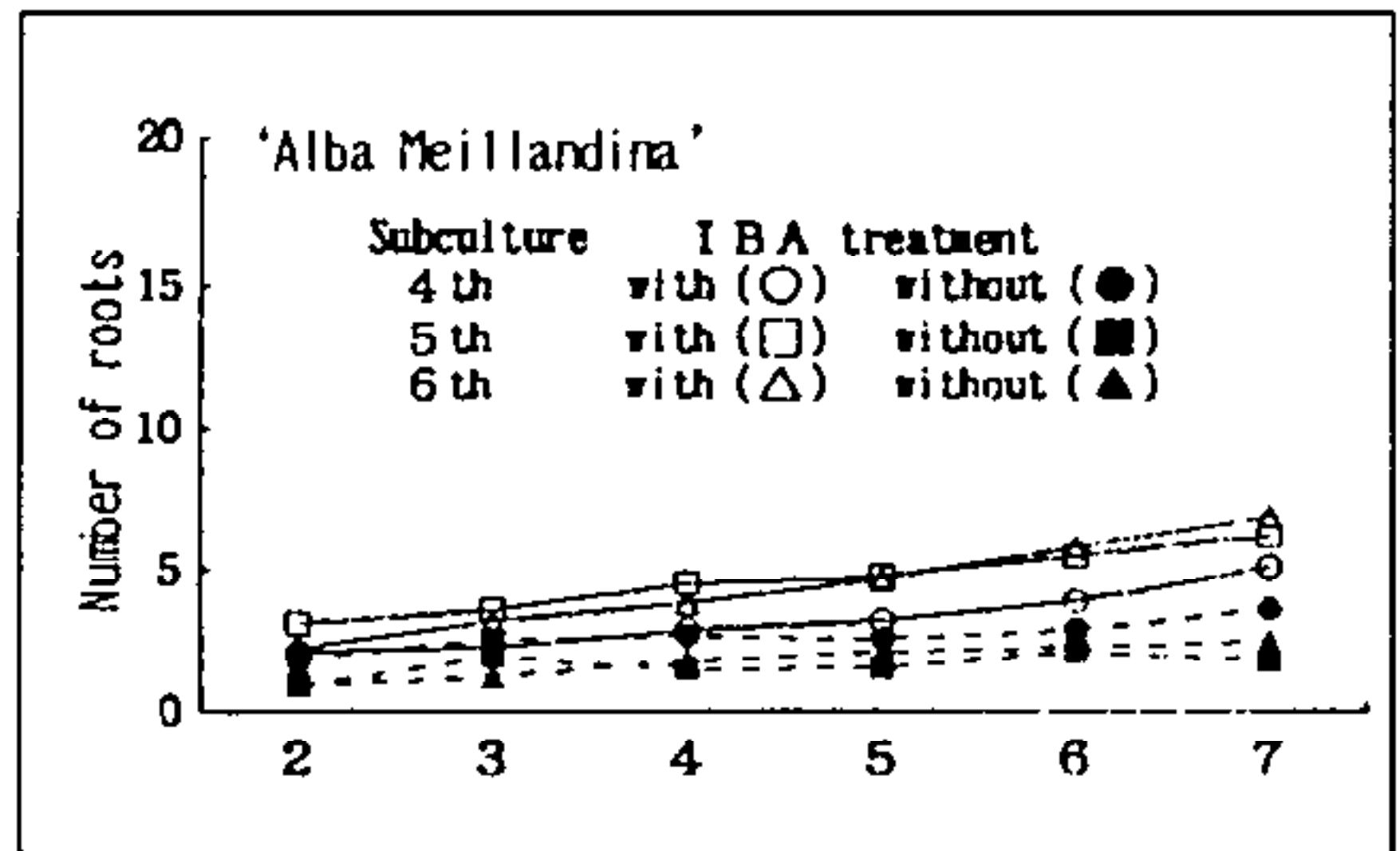


Figure 4. Change in number of roots after rooting induction treatment.