

Shoot Bending for Improved Plant Training of Cut Roses (*Rosa hybrida*)

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Roses (*Rosa hybrida*) are one of the most popular cut flowers all over the world. The demand for roses is increasing in Sri Lanka as well as export markets. However, the small scale rose growers in Sri Lanka are not in a position to supply the flowers in times of high demand. Therefore, flower production needs to be increased through increasing productivity. It has been revealed that more shoot yield can be obtained through shoot bending compared to conventional plant training methods. Hence, this research was conducted to determine the positive yield responses of bending.

The research was conducted in Keppetipola (agro-ecological region; IU3) using three varieties of budded roses, namely White Success, Black Magic and Peach Pope. Mother shoot bending method and conventional training (without bending) were practiced in separate replicated raised beds. Recommended agronomic practices for roses along with application of cow dung and few other commercial fertilizers at the rates in commercial floriculture were used. Watering and application of other agro-chemicals (fungicides, pesticides, liquid fertilizer) were done as general cultural practices. Pinching, disbudding and pruning were practiced to train the plant from initial stage and bending was done five weeks after planting.

Shoot height, shoot number and leaf number did not significantly increase when mother shoot was subjected to bending at 5 weeks after planting. However, there was a significant increase in leaf area (bending: 1861.5; without bending: 1390.4 cm²) and the flower bud yield (bending: 18.5; without bending: 10 buds plant⁻¹) in the bending treatment, determined in all varieties (within the first month). This could be a result of formation of more ground shoots in bended plants, giving an adequate floral initials within the improved plant structure. None of the floral qualities such as height and diameter of the flower bud and the length of flower stalk were affected by mother shoot bending in all three varieties (length of flower stalk when bending: 72.3cm, and without bending: 64.3cm.; height of the flower bud when bending: 3.4cm, without bending: 3.2cm.; diameter of the flower bud when bending: 2.5cm, while without bending: 2.5cm).

Results revealed the success of mother shoot bending at the initial stage of growth under moderate field conditions. As it increases the ground shoot number, it could be identified as a better method to train rose plants at the initial stage in order to form a better plant structure and a yield. Although mother shoot bending increased the leaf area and the flower yield, the flower quality of the three selected varieties was not significantly improved.