



## Stimulation of adventitious root formation by laser marking in rose cuttings

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### Contents and Objectives:

The adventitious root formation in roses is important for the propagation of potted roses among other species. Genotypic differences in rooting ability trigger that for some rose varieties only unsatisfactory rooting results have been achieved so far. Wounding stimuli are important for the process of adventitious root formation. In this sense, several studies suggest that rooting can be improved under certain circumstances if further wounds are made in addition to the cuttings. Traditionally, this is done with a knife or scissors, but the use of laser marking seems to be promising because of its precision and uniformity allow the establishment of adjustable excision levels depending on parameters such as energy and pattern. In order to analyze the influence of additional wounding along the base of rose cuttings, the following points are going to be addressed in this doctoral project: establishment of several marking levels to achieve a suitable wound depth on the cutting surface, image analysis to determine root presence and distribution after marking, research of the laser effects regarding mechanical stress and heat measurements. Information collected in this project aims to establish the conditions that mechanical damage need to fulfil in order to stimulate a positive rooting response in difficult-to-root species.

### Publications:

### Partners:

Leibniz Universität Hannover. Woody Plant and Propagation Physiology Department. Hannover, Germany

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