Abstract

The present study aimed to quantify morphological changes due to mechanical stimuli by stem bending in the hardening phase of ‘espinheira-santa’ [Maytenus ilicifolia (Schrad.) Planch.] seedlings. The experiment was conducted at shade house as a completely randomized factorial design (2 x 5) formed by seedlings of two height classes and five stem bending intensities (0, 5, 10, 20 and 40) performed daily for thirty days, with four replicates of ten seedlings. The effect of mechanical stimuli was quantified by the increments in height, stem diameter as well as root and shoot biomass to calculate the absolute growth rate. In addition, root electrolyte leakage was measured. The data was submitted to regression analysis at 5%. The results indicated that increasing the frequency of stem bending induced a reduction in height increment, electrolyte leakage from root tissues and an increase in stem diameter increment and root biomass in seedlings classified by height. The shoot biomass of seedlings with larger dimensions increased a frequency of 20 stem bending even with the linear reduction in seedling height, and consequently increased growth rate. Mechanical stimulus is an option to promote morphological changes in Maytenus ilicifolia seedlings which increases hardiness and seedlings quality for out planting.

Keywords

Espinheira-santa, mechanical stimulus, seedling production, root electrolyte leakage.