Abstract
Cedrela odorata L. is one of the most valuable timber species in Mexican tropical forests. Despite its potential use in forest plantations, genetic variation in growth rate and other economically important traits remains unknown. In order to initiate a domestication program for Cedrela odorata in Veracruz, Mexico, genetic parameters for growth traits (height, diameter at breast height- DBH, stem volume, and stem taper index) and the expected response to selection under different selection scenarios were estimated in this study. Five year-old trees established in a progeny test including forty-two openpollinated families collected in seven sites of Southeastern México were studied. The progeny test was established at the Experimental Station El Palmar, Veracruz. Significant variation was found for all growth traits (P≤0.01). Estimated individual-tree and family heritability for height was slightly higher (h²i =0.65; h²i f =0.62) than for stem volume (h²i =0.54; h²i f =0.59), DBH (h²i =0.38; h²i f =0.59) or stem taper index (h²i =0.38; h²i f =0.51). Selection at five years of age based on height would be more efficient to improve volume growth and stem taper index than direct selection on those traits due to the high genetic correlation among them (rA≥0.90), and the strong genetic control for height growth. Expected genetic gains for volume were similar (around 50 %) under two different selection scenarios (mass and family selection). Since expected gain is high, there is a large potential to increase productivity in this base population of Cedrela odorata through genetic improvement.

Keywords
Cedrela odorata, heritability, selection, correlated response, genetic gain.