Growth, survival and herbivory of seedlings in Brosimum alicastrum (Moraceae), a species from the Neotropical undergrowth. Growth responses, survival, and herbivory, on seedlings of Brosimum alicastrum were studied in a neotropical Mexican forest. We selected 122 seedlings and divided them into three groups assigned to defoliation treatments: control or 0 (n=21), 50 (n=51) and 90% (n=50). Every 4 months during two years we measured seedling growth (in terms of relative growth rate in biomass, leaf area growth, produced leaves and height growth) and survival. In addition, we evaluated every 12 months pathogen damage and insect herbivory using a 2 mm-2 grid. Separately, we estimated mammal herbivory in 3-month old seedlings that were selected within a plot of 500 m x 10 m (N=1095). Pathogen damage and insect herbivory were evaluated within the same plot in 113 seedlings. We found that 50 % defoliated seedlings showed compensatory responses in all growth parameters. Relative growth rate and height growth also had a compensatory response in seedlings at 90% defoliation. Relative growth rate and leaf area growth gradually decreased with time although height growth seedling showed an opposite pattern. Leaves produced were not affected by time. Estimated seedling survival probability increased with defoliation to a maximum of 97%, decreasing at 24 month to 37%. Mammal herbivory was more frequent and severe than herbivory caused by pathogens and insects. In some cases, mammal herbivory produced total defoliation. Compensatory growth in leaf area growth, produced leaves and height growth seedling suggest a synergic compensatory mechanism expressed in a whole-plant growth biomass (relative growth rate). Compensation and survival results suggest trade-offs at the leaf level, such as leaf area growth and produced leaves versus chemical defenses, respectively.

Keywords
Brosimum alicastrum, defoliation treatments, growth compensatory, herbivory, relative growth rate, seedling survival.