

Abstract

Many woody plants respond to intense clipping through an increase in growth parameters and nutritive value. However, optimal clipping intensities that result in peak plant growth and nutritive value have not been determined. We studied the response of *Ziziphus mucronata* and *Acacia nilotica* saplings to four clipping intensities. Parts of the main stem and each lateral branch were removed to simulate 0%, 30%, 60%, and 90% clipping intensity. After four months of resprouting five sapling growth parameters were determined viz. height, basal stem diameter, length of the longest shoot, root length, and number of new shoots. In addition, foliar crude protein (CP), neutral detergent fibre (NDF), acid detergent fibre (ADF), total phenolic (TP), and condensed tannin (CT) concentrations were determined. Shoot clipping did not stimulate sapling height and basal diameter growth, while shoot length responded to an increase in clipping intensity with a weak hump-shape in both species. *Ziziphus mucronata* increased root growth in response to increasing clipping intensity, while *A. nilotica* showed no clear trend. The largest number of new shoots was produced at 60% and 30% clipping intensities for *Z. mucronata* and *A. nilotica* respectively. *Ziziphus mucronata* produced more new shoots than *A. nilotica*. The most severe (90%) clipping intensity produced the highest CP and lowest NDF content in the two species, reduced TP and CT content in *A. nilotica*, but not in *Z. mucronata*. We conclude that an increase in clipping intensity produced varying responses in sapling growth parameters and nutritive values in *Z. mucronata* and *A. nilotica*.