

Abstract

Solanum mauritianum is considered as an invasive plant with unknown economic value, fast growing and aggressive gap colonizer associated with forest disturbance. It belongs to the family of Solanaceae and can grow to over 20 m in height. It is native to Southern America and threatens integrity of several natural forest in Western Kenya. Surveys were undertaken in 1998 and 2005/2006 at Mount Elgon and Kakamega forests to evaluate the species ecology, spread and impact on other tree species. Total enumeration of seedlings, saplings and mature individuals was done over two 1-ha-blocks in each forest. The total number of 0.1 ha plots sampled was 20 per forest in relatively lightly and heavily disturbed areas. The results show the species relative dominance in Mount Elgon increased from 1.0% in 1998 to 48.9% in 2006, out competing the regeneration of other trees. For example at Labaa, the once dominant *Diospyros abyssinica* with 36% relative dominance in 1998 declined to 1.9% in 2006. This threat to the health of ecosystems is not yet noticeable in Kakamega forest where the weed relative stocking was 0.2%. A strong positive correlation ($n=5$, $r_s=0.9$, $p=0.95$) between *S. mauritianum* established and charcoal burning still exists in Mount Elgon. Thorough literature review and field observations confirmed about the characteristics of *S. mauritianum* as weed. Proliferation strategies and opportunities underlying the successive invasion by weed have been reviewed and elements of an integrated, multidisciplinary effort to control the adverse impact of the weed in forest and outside forests identified. Measures to check the invasiveness of these species include reducing forest gaps, monitoring its reproductive biology to eliminate mother trees before seeding, educative campaigns to prevent local communities from domesticating this species on their farms, research programme on *S. mauritianum* to understand causes of its competitive advantage over others and search for resistant species that would out compete and networking with scientists in other countries such as South Africa and Brazil.