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# Adverse impacts of invasive *Ageratina adenophora* on Nepalese native trees

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## Abstract

*Ageratina adenophora* is considered one of the most problematic invasive species in Nepal. Tropical to subtropical Nepal forests are severely invaded by this species. Previous studies on *A. adenophora* are concentrated on crop plants and some weedy herbs but the studies on its effects on native trees have been very scarce. Moreover, previous tests have typically used crushed or ground leaves that may contain compounds that do not exist on soil surface. To avoid these drawbacks, we used different bioassays to investigate the modes of impacts of *A. adenophora* on native trees (*Schima wallichii* and *Alnus nepalensis*) in Nepal. Seedlings of these tree species were grown in *A. adenophora* invaded and uninvaded soils, soil with *A. adenophora* litter and without litter, and soil with extracts prepared by soaking intact *A. adenophora* leaves. Analysis of growth parameters showed that litter, extracts and invaded soil by *A. adenophora* were toxic to the native seedlings. Inhibition was shown after seedling exposure and the effect remained permanent. In conclusion, native tree species are vulnerable to *A. adenophora* invaded sites creating problems in the establishment and survival of native seedlings in Nepal forests.

**Keywords:** Crofton weed, invasion, native trees, growth, litter toxicity

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