

INVASIVE BEHAVIOUR OF *Myroxylon balsamum* AT UDAWATTAKELE FOREST RESERVE

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Udawattakele forest is a national heritage of Sri Lanka which has rich flora and fauna. There are about 460 plant species including 135 tree species and 11 liana species, of which 9 species are endemic to Sri Lanka. When considering floristic composition of Udawattakele it is dominated by *Swietenia macrophylla* (mahogany), *Michelia champaca* (gini-sapu), *Mesua ferrea* (na) and *Myroxylon balsamum* (katta kumanchal). Senadhera (1997) has reported that *Myroxylon balsamum* has become invasive in some parts of the forest. The objectives of this investigation was to estimate the invasive behaviour of *Myroxylon balsamum* at Udawattakele forest reserve.

Plots of 10 m x 15 m were used for sampling of overstory vegetation and 10 m x 10 m plots were used for understory. Plots were located randomly in *Myroxylon balsamum* dominant regions in the forest and measurements taken were number of individuals and their species, tree height (m), stem diameter (m) at breast height (1.3 m above ground level) and crown diameter (m) in order to evaluate species diversity and dominance. Germination of *Myroxylon balsamum* seeds were evaluated under four different light levels (full sunlight, 70% and 35% light and complete dark conditions). A map was prepared to show the distribution and density of *Myroxylon* at various parts of Udawattakele forest reserve.

Results showed that *Myroxylon* has dominated the understory even when a few mother plants were available in the overstory. This could be attributed to prolific seed production capacity, its ability to germinate under wide range of light conditions, favourable micro-climatic conditions presenting in the understory and absence of any seed pest or pathogen. Further results clearly showed that *Myroxylon* invasion had resulted in the decline of species diversity of the forest.

If no control measures are applied, there is a possibility that this species could invade the other parts of the forest in the long term. Therefore necessary action must be taken immediately to control *Myroxylon balsamum*. This could be done by uprooting seedlings, collecting and destroying seeds and thinning some mother trees. Further understanding of the efficiency of key physiological processes of *Myroxylon* including water use efficiency and stomatal conductance could be useful in deciding measures to control the invasion. Further examinations of the dynamics of the *Myroxylon* seedling bank and competition taking place at some parts of the forest between mahogany, *Myroxylon* and na for the dominance could be useful in the management and maintenance of the species diversity of Udawattakele forest reserve.