INVASIVE BEHAVIOUR OF *Myroxyylon balsamum* AT UDAWATTAKELE FOREST RESERVE

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Udawattaakele 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 Udawattaakele it is dominated by *Swietenia macrophylla* (mahogany), *Michelia champaca* (gini-sapu), *Mesua ferrea* (na) and *Myroxyylon balsamum* (katta kumanchal). Senadhera (1997) has reported that *Myroxyylon balsamum* has become invasive in some parts of the forest. The objectives of this investigation was to estimate the invasive behaviour of *Myroxyylon balsamum* at Udawattaakele 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 *Myroxyylon 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 *Myroxyylon 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 *Myroxyylon* at various parts of Udawattaakele forest reserve.

Results showed that *Myroxyylon* 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 microclimatic conditions presenting in the understory and absence of any seed pest or pathogen. Further results clearly showed that *Myroxyylon* 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 *Myroxyylon 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 *Myroxyylon* including water use efficiency and stomatal conductance could be useful in deciding measures to control the invasion. Further examinations of the dynamics of the *Myroxyylon* seedling bank and competition taking place at some parts of the forest between mahogany, *Myroxyylon* and na for the dominance could be useful in the management and maintenance of the species diversity of Udawattaakele forest reserve.