Evaluating the most appropriate control method of *Mimosa pigra*; case of Mahaweli River Basin

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Mimosa pigra can be identified as on the worst invasive species and it can be found in certain parts on wet and intermediate zones of Sri Lanka. It can be grown at any elevation and found in low, up and mid country of Sri Lanka. It is clerly visible a 30 to 35 km belt of *Mimosa pigra* along the upper catchment areas of Mahaweli River. People in the area complain that this species has become a problem for them in their regular farming activities.

This study was carried out in identifying community attitude towards *Mimosa pigra* and its control methods. A community survey was carried out covering three GN divisions in the area; Nathtarampotha, Pilapitiya, and Pandiwatta by selecting 90 families. According the results obtained there were very few uses of "Yoda Nidikumba" and surrounding people are using the plant mainly as a fuel wood.

Uprooting plants before getting matured, cutting,slashing and tilling are identified by the community as mechanical control methods. However, community is unable to suggest a proper control method for preventing spread of *M.pigra.* According to respondents, still no proper attempt has been made by responsible parties. However, Mahaweli Authority is attempting to control the species by introducing large trees which provide shades such as *Acacia acuminate* (Jam) and *Terminalia arjuna* (Kumbuk). By studying the seed germination of *Mimosa pigra* under light and shade conditions it is proven that the light condition is most preferable for the success growth of the *Mimosa pigra.* Maintaining a shady condition in the invaded area inhibit the seed germination and growth of *M.pigra.* Study revealed that *Gliricidia sepium* (Watahiriya) can be introduced for the land as a pioneer species to control the *Mimosa pigra* while fertilizing the soil.

Seed Germination Indexes were found for Zea *mays*, *Vigna unguiculata along* with *Mimosa pigra* by supplying same conditions using soil samples from the study site. *Zea mays* is the most suitable variety for the study site which can be grown where *Mimosa pigra* is dominant.

Vegetation cover and water management system are best management activities for reducing the germination of *Mimosa pigra* seeds. It is important to carry out more studies about *Mimosa pigra* in this area as the flood plains of the Mahaweli River is being invaded by this particular invasive species day by day. Monitoring must be

continued at the study site longer than the known seed longevity to ensure that the seed bank is exhausted, and that no further germination occurs.

Keywords: *Mimosa pigra*, Mahaweli river basin, control methods, pioneer species