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BEWARE OF ARUNADEVI, THE INVASIVE ALIEN!

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'Arunadevi', known botanically as Wedelia trilobata, was introduced to Sri Lanka from a neighbouring country in the 1980s. It is believed that it was informally introduced into some tea plantations to function as a cover crop. Its aggressive growth habit caused it to cover the ground completely and very quickly. However, realizing that Arunadevi will compete with tea, specially during dry weather, growers took care to restrict its planting to roadsides and banks, steep terrains, and other non-crop areas. Over the past couple of decades, it has been used successfully in tea plantations, as a cover crop to prevent soil erosion and to smother weeds in non-tea areas.

The succulent and lush growth of Arunadevi which forms a thick carpet with an abundance of yellow-coloured flowers, no doubt, makes it an attractive sight. As to be expected, visitors, impressed with this charming herb, carry cuttings away to establish it in their home gardens as an ornamental plant. Unfortunately, Wedelia has now escaped from these home gardens and spread into nearby abandoned lands, roadsides, playgrounds, and so on. Moreover, this rampant weed has now encroached even into abandoned paddy fields. It is now encountered even in non-tea growing areas, from the country sides to the outskirts of cities, although it was confined at the outset to the tea lands in the up-, mid- and low country regions.

It is clear that Arunadevi can no longer be considered as a cover crop and must be regarded, owing to its aggressive nature, as an invasive weed. The invasiveness of a given flora can be defined as its ability to grow fast and replace other plants in the vicinity. In fact, Wedelia trilobata was identified by the Ministry of Forest and Environment in 1999, as an alien invasive plant of national significance.

With the rapid spread of Arunadevi into every nook and corner, it is becoming a menace to the environment and poses problems to tea growers, farmers, and authorities responsible for the maintenance of roadsides, playgrounds, etc. It is therefore opportune to examine and evaluate the various weed management strategies available for this rampant weed.

Slash weeding is practised by many tea growers but it is a costly operation, and needs to be repeated at short intervals. The loppings are sometimes used to make compost because of the succulent nature of the leaves and the low carbon: nitrogen ratio (10:1). However, using this compost, in situ or elsewhere, could help to spread the weed rapidly through its partially decomposed, but still viable, cuttings. Thus, some planters have done away with compost-making to avoid this risk. If the loppings are to be used for making compost, thorough mixing and proper supervision are needed to ensure that all the material is well decomposed.

The growth of Arunadevi is partially suppressed by a parasitic herb, *Cuscuta* sp. or 'Aga Mula Nethi Wela'. This biological control phenomenon could be observed seasonally, particularly in the mid- and up-country regions, but it is of little practical significance.

Wedelia is difficult to control chemically. It is resistant to many herbicides, and a single herbicide at lower dosages is generally ineffective. This is due to the coarse and hairy nature of the leaf, which presumably hinders the entry of herbicide particles into the leaf cells. Therefore, various cocktail mixtures and high dosages of herbicides were tested against *Wedelia.*

Of these mixtures, 50 ml of MCPA (60%) + 100 ml of glyphosate (36%) (equivalent to 0.5 oz. MCPA (60%) + 1 oz. glyphosate (36%)), or 0.5 oz. MCPA (60%) + 0.4 oz. Diuron (80% wp) (equivalent to 50 ml of MCPA (60%) + 40 g of Diuron 80% wp), or a straight application of 0.75 oz. MCPA (60%) (equivalent to 75 ml of MCPA (60%), in 15 litre spray tanks (equivalent to one gallon of water), were equally effective.

Herbicides should be applied to the tender foliage, that is at about 3-4 weeks after slashing. However, *Wedelia* cannot be completely controlled with a single application. About 3-4 repeat applications, at four monthly intervals, are required to achieve effective control. Thereafter if eradication is desired, all viable shoots which have survived should be collected manually.

Although the foliage of *Wedelia* is killed by Paraquat, regeneration takes place within three to four weeks. Therefore, the use of such contact herbicides is useful only as an alternative to slashing in steep terrain, banks, roadsides, etc.

With *Wedelia trilobata* being identified as an alien invasive weed, care should be taken to maintain it in tea lands only within restricted areas, as indicated above. It should not be promoted as a cover crop in non-tea growing regions. The less aggressive *Arachis pintoii* may be considered as an alternative.