WATHU PALU: INVADER IN TROPICAL PARADISE

Picture 1: Wathu palu vine

Most of us know and familiar with wathu palu as a nuisance vine growing around our gardens (covering banana plants) especially in the wet zone and up country areas of Sri Lanka. The common name of this vine around the world is "mile a minute" due to its rapid growth rate. Botanical name of the species is MIKANIA MICRANTHA native to Central and South America (from Mexico to Argentina) and the Caribbean region. It is a major weed of agriculture and natural environment in the tropical areas of South and Southeast Asia including China, Malaysia and Sri Lanka. Further it has become a serious weed in West Africa and Pacific Islands and still expanding its range. The first infestations of wathu palu were discovered in Australia in tropical Far North Queensland in 1998 at Ingham and Tully. Intensive eradication program is being carried out successfully to remove all known infestations. Now wathu palu is a top priority weed to be eradicated in Australia.

Wathu palu is a creeping or twining perennial vine capable of growing up to 20 m high on supporting vegetation. It can smother native vegetation, plantation crops (banana, tea, coconut and rubber seedlings, pineapple, and cocoa), forests and infrastructure. It has been observed that wathu palu can grow 9 cm per day under ideal conditions. The lateral shoots will twine around its own main stem until other support is found. In the absence of support, wathu palu is prostrate and will form roots along any stems touching the ground.

Leaves

The leaves of this vine are smooth and heart-shaped. They are 4-13 cm in length 2-9 cm wide and taper to an acute point. Leaves have 3 main vines that arise from the base of the leaf. The leaf stalk is 2-8 cm long and the leaves are arranged in opposite pairs along the stem.

Stems

The stems of the wathu palu are slender, ribbed and bear fine, white hairs. The lateral stems are as vigorous as the main stem and it's difficult to distinguish between the two.

Flowers

The flowers of the vine are white to greenish white. They produced in flat topped cluster mainly at the ends of stems growing in full sunlight. Each flower head is 4-6 mm long and contains 4 individual flowers. Wathu palu starts to flower in August and continues up to February but can take place all year if plants are exposed to full sun.

Picture 2: Wathu palu at flowering

Picture 3: Impacts of wathu palu smothering native plant species

Seeds

Fruit setting occurs 17-21 days after flowering. Seeds are black in colour, 1.5 to 2 mm long, thin and five angled. Each seed has a parachute like tuff of fine whitish bristles (pappus) over 30 that are 2-3 mm long. The pappus is longer than the seed itself. Wathu palu vine produces large quantities of seed (20000 – 40000 seeds/plant/year). These seeds are well equipped for wind dispersal. Seeds can also be dispersed by animals, water and machinery. The germination percentage is very low (8-12%) compared to other invasive species.

Wathu palu has vigorous and sexual reproductive capacity but cannot tolerate heavy shade. Plants can grow vegetatively from the nodes and form very small segments of the stem. Growth of young plant is extremely fast and using trees as support, the weed rapidly forms a dense cover over entangled leafy stems.

Wathu palu vines show phenotypic plasticity in high altitude areas where the stems turn dark violet and more hairs. The leaf surface and petiole develop a dark violet tinged and the margins are deeply toothed or serrate.

Impacts

•Wathu palu can smother, penetrate crowns and choke and pull over plants.

•It causes a significant reduction in the growth and productivity of several crops.

•It successfully competes with trees and other crop plants for nutrients, water and light.

•When mixed with the soil, wathu palu vine debris produces toxins (phenolic and flavonoid compounds) that inhibit growth of vegetation such as native species and agricultural crops.

•Wathu palu thrives in open, sunny, disturbed areas but tolerate partial shade, making it invasive under tree crops and the understorey of forests. It has the ability to grow up through the canopy of a forest and is a serious threat to the biodiversity of tropical and sub-tropical ecosystems.

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