

CONTROL OF *IMPERATA CYLINDRICA* (L.) BEAUV. IN RUBBER PLANTATIONS – A REVIEW

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Imperata cylindrica (L.) Beauv. is an aggressive, rhizomatous, perennial grass invader especially in perennial crops. It has linear to lanceolate leaves and the leaves originate directly from ground level and the length ranges from one to four feet. This weed has several features that encourage its profuse growth and persistence. It adapts to a wide variety of soil types and can form stout, extensively creeping, scaly rhizomes with sharp-pointed tips. It can reproduce sexually from seeds and vegetatively through rhizomes. Rhizomes have a high regenerative ability and seeds have the capacity to get dispersed by wind. Developing a rubber plantation in *I. cylindrica* dominated areas is a serious problem for the rubber farmers in most parts of South East Asia. The problem attributes in three respects: the high cost (labour for land preparation), its competitive effect on rubber and annual intercrops and the fire hazard it poses during the dry season. Integration of tillage, herbicide application and cover cropping provide better control than the independent effects of each practice. However, as a single option in the short-run, herbicides like glyphosate is the most effective, because it is cost-effective with less soil disturbance, preventing erosion. For the control of subsequent re-growth, an integrated approach, which emphasizes the use of multiple practices like tillage, cover crop, herbicide, etc. is the best option. This review article highlights two major topics; (1) the impact of *I. cylindrica* in immature rubber plantation and (2) integrated management approach.

Keywords: Cover crops, Glyphosate, Imazapyr, *Imperata cylindrica*, Rubber, Tillage

INTRODUCTION

Imperata cylindrica (L.) Beauv. has been ranked as one of the 10 worst noxious weeds of the world (Holm *et al.*, 1977; MacDonald, 2004) and is found in a wide range of habitats, which include degraded forests, grasslands, arable land and young plantations. It is native to South East Asia and infests nearly 200 million ha of plantation and agricultural land worldwide. This weed is seen in the warm tropical regions, from Japan to southern China, through the Pacific Islands, Australia, India, East Africa and the south-eastern United

States (Holm *et al.*, 1977). It is known as speargrass in West Africa, alang-alang in Asia and cogongrass in America. In India, it is known by a variety of names like *ullu*, *sirhu*, *dabh*, *khans* etc. (Quattrocchi, 2006). Garrity *et al.* (1997) found that the area of *Imperata* grasslands in Asia is about 35 million ha which represents 4% of the total land area. The countries with the largest area of *Imperata* grasslands are Indonesia (8.5 million ha) and India (8.0 million ha).

A major percentage of global natural rubber is produced in South East Asia and smallholders play a key role in producing