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# The Climbing Swamp Fern, *Stenochlaena palustris* (Burm. F.) Bedd. (Blechnaceae) - A Noxious Weed in Oil Palm Estates and Its Management

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*The climbing swamp fern or Stenochlaena palustris, is a fern that has a creeping stem/rhizome which often grows into a vigorous sheet colony over large areas and climbs robustly on palm trunks as an epiphyte. The young shoots or new fronds of this fern are consumed as vegetables by humans. The fern has other usages in local medicine, basket making and a beneficial role in pest management. In a field with thick tall sheet growth of S. palustris, the harvesting, evacuation of fresh fruit bunch (FFB), loose fruit collection and many field operations will be difficult to be carried out efficiently. The luxurious epiphytic growth on palm trunk up into the canopy prevents the sighting and cutting of FFB during harvesting and thus many ripe FFB are left unharvested, which subsequently become over-ripe/ rotten. In both situations, oil palm yield in severely infested fields is badly impacted. In line with the integrated weed management approach, prevention of the establishment of S. palustris is important by early control of isolated colonies or small patches of this noxious weed in the replanting fields, drain sides and on trunk chips. In the control of this serious noxious weed, various measures applied singly or in combination are necessary in line with integrated weed management approach. Over the years, chemical control has been widely practiced in rubber and oil palm plantations. The herbicides including 2,4,5-T, paraquat, DSMA (disodium methyl arsonate), MSMA (monosodium methanearsonate), diuron, sodium chlorate, 2,4-D sodium, 2,4-D amine, imazapyr, glyphosate, glufosinate-ammonium, metsulfuron-methyl, saflufenacil and sulfentrazone (and mixtures) are briefly discussed and reviewed. To mitigate the removal of paraquat, several alternatives have been identified and reported by several researchers. The writer's recommendations to control S. palustris for mature plantings are: i) sodium chlorate + metsulfuron-methyl at 5.5 kg + 75 g per hectare (or 220 g + 3 g per 18 L water), ii) glyphosate + metsulfuron-methyl at 1.5 L + 75 g per hectare (or 60 ml + 3 g per 18 L water), iii) glufosinate-ammonium at 3.3 L per hectare (or 132 ml per 18 L water). For control of S. palustris in inter-row areas of immature plantings, treatments i) and iii) are recommended. This is to avoid unacceptable phytotoxicity to spear and new fronds of immature palms due to spray drift of glyphosate. For long-term control of S. palustris in pure stand and in inter-row areas, spraying of metsulfuron-methyl at 150 g product per hectare (or 20% product in 6 g per 18 L water) is recommended. For spraying of epiphytic S. palustris and other mixed species of epiphytes, glyphosate + metsulfuron-methyl at 1.5 L + 75 g per hectare (or 60 ml + 3 g per 18 L water) is recommended and the optimum spraying time is after frond pruning operation.*

***Keywords:*** *Stenochlaena palustris, noxious weed, climbing epiphytic weed, oil palm plantations, management, herbicides.*