Towards environmental sustainability: integration of management practices with inherent characteristics of rubber plant

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Abstract

This paper attempts to identify impact of rainfall and moisture stress on growth and yield of rubber to develop suitable adaptation measures subsequently. The capacity of rubber plantations to mitigate adverse weather conditions is also discussed. Adverse impacts of soil moisture stress identified in this study were; 30% decrease in establishment success, 35% reduction in girth at 6 months after planting and increase in unproductive immature period by more than 2 years. Planting hole application of organic material, mulching around rubber plants at the time of planting and application of high dose of K fertilizer were identified as suitable adaptation measures. Low water use, osmotic adjustments, capability of capturing more rainfall and high carbon sequestration were identified as adaptation characteristics inherent in rubber plantations. The paper emphasizes the role of rubber plantations as a self-sustaining and environmentally acceptable ecosystem, which can withstand drought while simultaneously contributing to maintenance of the global carbon balance with an economical benefit.

Keywords: Adaptation measures, Carbon Sequestration, Climate Change, Mitigation Characteristics, Rubber, Sri Lanka