

AGROMANAGEMENT TECHNIQUES TO MITIGATE DROUGHT IN YOUNG RUBBER PLANTATIONS

M.D. Jessy, P. Prasannakumari and James Jacob

Rubber Research Institute of India, Kottayam – 686 009, Kerala, India

Received: 09 November 2013 Accepted: 20 January 2014

Jessy, M.D., Prasannakumari, P. and Jacob, J. (2014). Agromanagement techniques to mitigate drought in young rubber plantations. *Rubber Science*, 27(1): 54-60.

In India, attempts are being made to expand rubber cultivation to agro-climatically less favourable regions also, where drought is the major constraint. Climate uncertainty and increasing drought are adversely affecting the establishment and growth of plants even in traditional regions. Objective of the present study was to develop a viable technology for mitigating adverse effects of drought in young rubber plants in dry areas. The effectiveness of super absorbent polymer, tillage and potassium (K) supplement was tested in a field experiment conducted at Puthukkad Estate, Trichur, which is a drought prone area during 2010-12. Three types of planting materials *viz.* polybag plants raised from green budded stumps, polybag plants raised through direct seeding and root trainer plants were evaluated. Observations on chlorophyll content index (CCI), soil moisture and plant growth were recorded. Plants which received super absorbent polymer, tillage and K supplement retained significantly higher CCI compared to control during dry period in January. Soil moisture status during dry period in January was significantly higher in the treatments with super absorbent polymer and tillage. Tillage and super absorbent polymer improved growth of plants during 2012. Polybag plants raised through direct seeding were significantly superior to polybag plants raised from budded stumps with respect to CCI and growth during both years and were superior to root trainer plants after two years. The results showed that tillage and super absorbent polymer are effective in mitigating adverse effects of drought in young rubber plants and polybag plants raised through direct seeding have a better performance in dry areas compared to the other two planting materials.

Keywords: Drought, Planting material, Potassium, Super absorbent polymer, Tillage

INTRODUCTION

In India, scarcity of land for further expansion of rubber cultivation in traditional rubber growing regions coupled with the comparatively stable and attractive income from rubber plantations in recent years has led to expansion of rubber cultivation in agro-climatically less favourable regions. Area under rubber is

fast expanding in Karnataka and Goa region, and many farmers are venturing to rubber cultivation in Maharashtra and Orissa also. Prolonged dry season is the main climatic constraint in these regions and its impact will be more pronounced during establishment and early growth of plants. Appropriate farm technologies to mitigate