

EVALUATION OF BOWL SLUDGE AS A SOURCE OF PHOSPHORUS NUTRIENT FOR *HEVEA BRASILIENSIS*

Elsie S. George, K.I. Punnoose, and M. Karthikakuttyamma
Rubber Research Institute of India, Kottayam – 686 009, Kerala, India

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Field experiments conducted at two locations in Kerala, India to evaluate bowl sludge, a waste product from latex centrifuge factories, revealed its usefulness as a source of phosphorus nutrient for rubber (*Hevea brasiliensis*). The increment in girth and yield was comparable to that when super phosphate or mussoorie rock phosphate was used. Soil chemical properties were not affected by continued application though bowl sludge contained appreciable quantity of magnesium. Leaf and latex nutrient contents were also unaffected. The result of the study indicated bowl sludge as a potential source of phosphorus fertilizer for rubber plantations.

Key words: Bowl sludge, *Hevea brasiliensis*, Phosphatic fertilizers, Waste utilization.

INTRODUCTION

Phosphorus being one of the major plant nutrients with least mobility in soil, its nutrition to rubber like any other crops is of utmost importance. Rubber cultivation in India is confined to laterite, lateritic and red soils and these soils are deficient in available phosphorus mainly because of its fixation as iron and aluminium phosphates (Rajan and Rao, 1978). Use of rock phosphate as nutrient source in acidic soils has been suggested as one of the approaches to minimize phosphorus fixation (Singh *et al.*, 1993 and Prakash *et al.*, 1994). The phosphorus demand in rubber growing soils is therefore mostly met by the direct application of rock phosphate, which contains phosphorus as water insoluble form.

Bowl sludge is a waste product from latex centrifuge factories, which contained magnesium ammonium phosphate formed by the reaction between magnesium present

in the latex and diammonium phosphate, added to it. Most of the factories discard this material around the factory premises leading to environmental pollution. The effectiveness of bowl sludge as a source of phosphatic fertilizer for leguminous cover crop, *Pueraria phaseoloids* and young *Hevea brasiliensis* has been reported to be comparable to other sources such as super phosphate and mussoorie rock phosphate (George *et al.*, 1991). At 70 per cent capacity utilization of latex centrifuge factories in India the production potential of bowl sludge is estimated as 400t per annum which if used as fertilizer can save 2.2 million rupees for the rubber plantation industry (George *et al.*, 1994). The present study aims at evaluating the effect of continued application of two phosphatic fertilizers *viz.* superphosphate and Mussoorie rock phosphate and bowl sludge under field condition, on growth and yield of rubber as well as on soil properties.

Correspondence: Elsie S. George (E-mail: elsie@rubberboard.org.in)