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EFFECT OF POTASSIUM AND MAGNESIUM INTERACTION ON SOIL PROPERTIES AND GROWTH OF IMMATURE *HEVEA BRASILIENSIS* IN ASSAM

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Two field experiments were conducted for eight consecutive years (1987-1995) at two locations in Assam to assess the influence of potassium and magnesium and their interaction on growth, yield and nutrient contents of rubber (*Hevea brasiliensis*). Girth and girth increment did not show significant improvement due to application of K and Mg but it significantly increased their contents in leaf and had synergistic effect on leaf N and P contents. Application of K significantly increased the availability of K. Also increased the availability of P and organic carbon content and reduced the availability of Ca and Mg. Similarly application of Mg improved the Mg availability as well as organic carbon and available P and Ca. Antagonism between K and Mg was expressed in soil as well as in leaf. Addition of K reduced the Mg availability in soil and Mg concentration in leaf. Conversely addition of Mg reduced the soil available K and leaf K concentration.

Key Words: Growth, *Hevea brasiliensis*, Immature phase, Magnesium, Nutrients, Potassium, Soil characteristics.

INTRODUCTION

In India rubber (*Hevea brasiliensis*) cultivation has been extended to north-eastern region during the last two decades. In this region the physico-chemistry of the soil is quite different from that in the traditional rubber growing regions. In southwest India appreciable amount of illite has been recorded in soils of this region particularly of Tripura and Assam. The available potassium status of these soils has not been satisfactory (Krishnakumar and Potty, 1989) and good response to applied potassium has been reported (Krishnakumar & Potty, 1990). The climate is humid sub-tropical (with a mean annual temperature of 23°C, and rainfall of 1540 mm). The soils are deep to very deep and highly weathered.

Potassium (K) and Magnesium (Mg) being primary and secondary nutrients respectively, are required for growth and normal functioning of rubber plants. It is also known that the response to applied K and Mg depends on their status and availability

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