

## POTASSIUM REQUIREMENT AND RESPONSE OF AN ULTRA SHORT - AGE RICE VARIETY GROWN ON AN ULTISOL

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Scarcity of water is being identified as one of the main constrains in the paddy cultivation in Sri Lanka, particularly under rainfed condition. One of the viable options to overcome the problem is to cultivate using drought escaping varieties. For this purpose, ultra short age high yielding rice varieties have been developed and they can be harvested in 75- 80 days. Since they complete their life cycle within a short duration, they need high rate of nutrient supply from the soil. Potassium is one of the major nutrients, which absorbed luxuriously by rice and therefore a supply of K is needed in quantities essential to cater the demand. Hence, a field experiment was conducted at the Batalagoda, Ibbagamuwa to study the response of ultra short age rice grown in Ultisol for added K fertilizers, to determine optimum rates and timing of K application, and to study K dynamics during the cropping period.

The experiment was conducted using S-12 ultra short age rice variety with five levels of K treatments as follows; 0 kg K<sub>2</sub>O /ha (T1), 60 kg K<sub>2</sub>O/ha as basal dressing (T2), 60 kg K<sub>2</sub>O/ha by two split applications (T3), 120 kg K<sub>2</sub>O/ha as basal dressing (T4) and 120 kg K<sub>2</sub>O/ha by two split applications (T5). Nitrogen Phosphorus and Zinc were supplied at the rate of 120 kg N/ha, 45 kg P<sub>2</sub>O<sub>5</sub>/ha, and 2 kg ZnSO<sub>4</sub>/ha. Direct seeding was done at the rate of 100 kg/ha. Grain yield, total biomass, K content in plant, and total K uptake at different growth stages were measured. Initial and final exchangeable and HNO<sub>3</sub> extractable K content in the soil were also measured.

Results indicated that plant K concentration was significantly affected by the K application at tillering, heading and harvesting stages. A gradual decrease of plant K concentration was observed in every treatment from tillering to harvesting. Plant K uptake was low at tillering stage, increased at heading and then decreased at harvesting. Total biomass production at harvesting was also significantly affected by K application. Although application of K significantly increased the grain yield, split application did not have any effect on the grain yield.

