The effects of residue management practices on phosphorus and potassium uptake in pineapple

ABSTRACT

Pineapple residue in Malaysia is usually burnt. The need for sustainable agricultural development coupled with the 1997 haze problem in Southeast Asia has led to the calls for "zero burning". A study was initiated at Simpang Renggam Pineapple Estate, Johore to quantify P and K uptake in pineapple parts and to also compare the efficiency of P and K uptake for burn and no-burn practices. At maturity (sixteen months after planting), three plants were sampled from each treatment and partitioned into roots, stem, leaves, fruit, peduncle and crown, and their dry weight, P and K concerntrations determined. Irrespective of treatment difference, P uptake was highest in the fruit, followed by the leaves, stem, crown and roots. The order of K was fruit, stem, peduncle, crown and roots. Between 66 and 58% of the total P and K taken up is recycled and the rest (42 and 34%) is lost through harvest. In situ burning of pineapple leaves before planting does not improve P and K uptake and yield. Major difference in P efficiency for butn (51.60%) and no-burn (53.21%) under fertilized was not observed.

Keyword: Nutrient uptake; Pineapple residue management; Nutrient partitioning; Peat; Phosphorus; Potassium