The Asian Journal of Horticulture, Vol. 3 No. 2 : 479-482 (December-2008)

A Review :

Potassium nutrition in banana

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Accepted : *November, 2008*

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Key words : Banana, Potassium

Banana being a surface feeder and a nutrient exhausting crop, it is of paramount importance to maintain a high degree of soil fertility in order to maintain the production at economic level over a long period. Large quantities of major nutrients especially potassium is necessary for proper growth, high yield and improved fruit quality of banana (Singh *et al.*, 1990). Potassium is required for the activation of over sixty enzymes involved in the formation of carbohydrates, translocation of sugars, various enzyme actions, yield, quality parameters, storage life of banana, the tolerance of certain diseases, mechanisms to overcome the abiotic stresses and several other functions. In this review, the literature pertaining to the effect of potassium on growth, development, dry matter production and distribution, yield, quality and interaction with other nutrients are discussed.

Potassium in banana nutrition :

Potassium is a key element in banana nutrition. It is the most abundant cation in tissues of banana (often up to 3-4 per cent of dry weight). Uptake studies showed that large amounts of potassium is absorbed during the later half of the vegetative phase (Lacoeuilhe, 1973) and have a special effects on the maturation process (Fox *et al*., 1979). Potassium is found to regulate the transfer of nutrients to the xylem. Where potassium supply is low, the transfer of nitrogen, phosphorus, calcium, magnesium, sodium, manganese, copper and zinc across the xylem is restricted (Turner and Barkus, 1983), the exception being potassium itself, a constant proportion of which moves to the top of the plant irrespective of potassium supply. Knowing the importance of potassium, various proportion of K is recommended to banana by different workers. Fawcett (1921) recommended 1 : 2 : 4 NPK mixture, while Stephens (1945) recommended a NPK ratio 1 : 1 : 2 or 1 : 1 : 4 with annual dressing rate of one ton/ acre.

Potassium on growth and development:

Banana requires potassium in large quantities throughout its normal life upto flowering stage. The K application must follow the potential growth of the plant and would thereafter be increasing; during fruit filling stage, the need for K is substantial (Lacoeuilhe, 1973). The response to potash fertilization was spectacular and its deficiency caused retardation of root growth (Charpentier and Martin-Prevel, 1965). According to K application in the early stages recorded the maximum height, girth, number of leaves, leaf area and increased sucker growth. The study also revealed a close relationship between pseudostem height, girth and yield. Potassium increases drought tolerance in plants (Mengel and Kirkby, 1980) and is believed to increase resistance power of plants to diseases (Katyal and Chadha, 1961). It is inferred that K application extended the longevity of leaves (Israeli and Lahav, 1986). Role of potassium in advancing flowering and shortening the number of days for maturity in banana has been well documented by many workers (Lahav and Turner, 1983). In a trial with Dwarf Cavendish banana, EL-Khoreiby and Salem (1991) indicated that the height and basal circumference responded positively to the highest K application rate of 500 g K_2O / plant. At this rate the plants were more vigorous and there was greater leaf area. Baruah and Mohan (1991) observed highly significant effect of K on leaf area index and phyllochron. The best