



Boron and molybdenum nutrition in sprouting broccoli under terai region of West Bengal

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ABSTRACT

The present investigation was carried out with sprays of borax *viz.*, B₀: control; B₁: 0.3% at 45 days after transplanting (DAT) and B₂: 0.3% at 30+45 DAT and ammonium molybdate *viz.*, M₀: control; M₁: 0.05% at 45 DAT and M₂: 0.05% at 30+45 DAT alone and in combinations on broccoli (cv. KABUKI). The results revealed significant response on growth, yield and quality of sprouting broccoli. Spraying of borax @ 0.3 % at 30+45 DAT (B₂) gave maximum total head yield (13.37 tonnes/ha) and protein content of head (3.24 g/100g) where as spraying of ammonium molybdate was less pronounced than spraying of borax in terms of yield and quality of sprouting broccoli. However, combined application of borax @ 0.3 % at 30+45 DAT and ammonium molybdate @ 0.05% at 45 DAT (B₂M₁) gave maximum total head yield (14.38 tonnes/ha), whole plant weight (945.65 g) and protein content (3.38 g/100g) of sprouting broccoli.

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Key words : Sprouting broccoli, Boron, Molybdenum, Yield, Quality

Sprouting broccoli (*Brassica oleracea* L. var *italica* Splenck.) which is popularly known as broccoli is an important vegetable crop and a new introduction to India. It is valued for its tender green bud, thick floral stalk and the secondary heads (spears). The soil and winter climate of terai region of West Bengal are very much suitable for luxuriant growth of broccoli. Recently it is gaining importance due to increasing awareness of nutritional security and quality produce as well as reasonable tourist influx in terai region. But micronutrient especially boron and molybdenum deficiency cause reduction in yield and quality of this crop in this region. Chattopadhyay and Mukhopadhyay (2003) also reported boron and molybdenum deficiency at different growth stages of cauliflower in the soils of terai region of W.B. Research work for micronutrient management, especially foliar feeding of micronutrients for sprouting broccoli is still meagre for this zone. Hence, the present investigation was carried out to find out effect of foliar application of boron and molybdenum for sprouting broccoli in the soils of terai region of West Bengal.

MATERIALS AND METHODS

The experiment was conducted at Vegetable Farm of Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch

Behar, West Bengal. Foliar spray of borax *viz.*, B₀: control; B₁: 0.3% at 45 days after transplanting (DAT) and B₂: 0.3% at 30+45 DAT and ammonium molybdate *viz.*, M₀: control; M₁: 0.05% at 45 DAT and M₂: 0.05% at 30+45 DAT alone and in combinations were done on broccoli (cv. KABUKI) planted at 45 x 45 cm in plot size of 2.5 m x 1.8 m. Thus nine treatment combinations were laid out in factorial randomized block design with 3 replications. The recommended dose of N, P₂O₅, K₂O (120 kg, 60 kg and 60 kg/ha, respectively) along with other cultural practice of crop production and protection were followed. The observations were recorded on ten randomly selected plants from each plot. The harvest index was calculated by using the formula given by Yosida (1983). Protein content of head was determined by modified Lowry's method given by Lowry *et al.* (1991). The data was analyzed statistically as suggested by Gomez and Gomez (1984).

RESULTS AND DISCUSSION

The data (Table 1) showed that application of boron had significant effect on stem length, stem diameter, leaf width and spraying of borax @ 0.3% at 30+45 DAT (B₂) produced maximum stem length (45.57 cm), stem diameter (2.56 cm) and leaf width (15.62 cm). Lowest maturity