



RESEARCH ARTICLE

Leaf nutrient status and fruit quality of Alphonso mango as influenced by micronutrients

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ABSTRACT

The problem of alternate bearing habit in Alphonso mango is considered as one of the long standing unresolved problems, directly and substantially contributing to poor production along with other problems like some physiological stresses and quality related issues has been raised in mango orchards. To overcome this problems the experiment was planned with eleven treatments involving two levels of micronutrients (ZnSO₄ 1% and 2%; FeSO₄ 1% and 2% and Borax 0.5% and 1%), their combinations and a control. Owing to results, it is revealed that foliar application of micronutrients produced favorable effect on fruit quality in terms of TSS, total sugars, reducing sugar and ascorbic acid. There was no significant effect on the acidity (%) and non-reducing sugar (%) due to any of the micronutrient either alone or in combinations. In case of nutrient status in mango leaves, Zn content was found to be higher in ZnSO₄ 2% + FeSO₄ 2% treatment, while iron and boron content were the maximum in ZnSO₄ 2% + FeSO₄ 2% + Borax 1% in the leaves of mango cv. Alphonso.

Key words: Leaf nutrient content, Mango, Micronutrient, Quality

INTRODUCTION

Alphonso mango (*Mangifera indica* L.) has some serious inherited physiological disorders such as, alternate bearing habit and excessive/heavy fruit drop. From last few years, some

physiological stresses and quality related issues has been raised in mango orchards. It was observed that unbalanced fertilization, micronutrients deficiencies, poor tree management and inadequate cultural practices are mainly responsible for orchard related quality issues (Ahmad and Rashid, 2003). Macronutrients as well as micronutrients are the key elements in plant, found equally important for the growth and development. Micronutrients play a vital role in various enzymatic activities and synthesis of assimilates and hormones. Their acute deficiencies some time poses the problem of incurable nature (Kumar, 2002). These micronutrients also help in the uptake of major nutrients and play an active role in the plant metabolism process starting from cell wall development to respiration, photosynthesis, chlorophyll formation, enzymatic activity, hormone synthesis, nitrogen fixation and reduction etc. (Das, 2003). Looking to the past researches made by scientist and problem faced by farmers, this experiment has been decided.

MATERIALS AND METHODS

The experiment was conducted at Regional Horticultural Research Station, Navsari Agricultural University, Navsari 396 450, Gujarat, during the year 2012-13. It was laid out in Randomized Block Design with eleven treatments combinations and replicated thrice. The treatments involving two levels of micronutrients (ZnSO₄ 1% and 2%; FeSO₄ 1% and 2% and Borax 0.5% and 1%) alone and in combination along with control are tried. Spray was carried out twice before initiation of flowering during 2nd fortnight of October and November. The experimental

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