



## Research Paper

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# Influence of pre-sowing treatments on germination, growth and vigour of mango cv. ALPHONSO

■ HIMA BINDU AATLA<sup>1</sup> AND D. SRIHARI

### Members of the Research Forum

#### Associated Authors:

<sup>1</sup>Department of Horticulture, Post Graduate Studies, Dr. Y.S.R. Horticultural University, WEST GODAVARI (A.P.) INDIA

#### Author for correspondence : D. SRIHARI

Post Graduate Studies, Dr. Y.S.R. Horticultural University, WEST GODAVARI (A.P.) INDIA

**ABSTRACT :** An experiment was conducted in Rajendranagar, Hyderabad, India, to determine the effect of pre-sowing treatments on germination, growth and vigour of mango during 2010-2011. Significantly higher values for all growth attribute parameters were recorded with the treatment (T<sub>0</sub>) i.e. extracted kernel pre-treated with KNO<sub>3</sub> @ 0.5 per cent found to be sound integrated practice, where it recorded maximum germination percentage (64 %), seedling diameter (7.10 mm), number of leaves (10.90), leaf length (15.83 cm), leaf width (8.00 cm), root length (23.40 cm), root spread (8.66 cm), root to shoot ratio (0.807), vigor of seedling (1094.33) and vigor index (1517.30) over all the other treatments. Whereas maximum seedling height (24.13 cm) and internodal length (3.66 cm) was recorded in extracted kernel pre-treated with GA<sub>3</sub> @ 500 ppm.

**KEY WORDS :** GA<sub>3</sub>, Germination, Growth, KNO<sub>3</sub>, Mango, Vigour

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Mango (*Mangifera indica* Linn.), was selected for the study as it is one of the most important fruits for all sections of people in India. It is considered as the national fruit of India. India is the leading producer of mango in the world. While in Andhra Pradesh it is grown in an area of 0.49 million ha with a production of 2.52 million tons in the year 2010 (Center for Monitoring Indian Economy, 2010). The productivity of mango in India and Andhra Pradesh is 5753 kg/ha and 5067 kg/ha, respectively (Center for Monitoring Indian Economy, 2010).

The area under mango is increasing rapidly owing to great demand for fresh fruits as well as processed products in the international market. Even though the area under mango is increasing rapidly, the pace of development is not appreciable. However, the greatest bottleneck in the expansion of area under fruits is the non-availability of genuine and quality planting materials in adequate quantity from reliable nurseries.

Healthy and good quality plant material is the foundation of successful fruit industry in the country (Reddy and Shukla, 2007). In view of growing importance of fruit crops, the demand for quality planting material has increased manifold throughout the country in the recent past. Synchronization and rapid seedling emergence are the commonly reported

benefits of pre-sowing treatments on germination. In most of the fruit crops, rootstock influences the vigor, longevity, tree size, yield and quality (Mukherjee and Majumdar, 1963). The rootstock is a very vital component of a grafted plant and once the trees are grafted on a certain rootstock and planted in the orchard, it is not possible to change it without incurring losses. Therefore, the good rootstock should possess the qualities like high degree of compatibility with the scion variety, adaptable to the agro-climatic conditions of the proposed area, tolerant to salt, resistant to drought, enduring to frost, resistant to diseases and pests prevailing in the proposed area. So raising of good quality rootstocks is very important for future amble.

To meet the ever rising market demand and to evolve a best technology for producing high quality mango planting material in a short period of time pre-sowing treatments are very important which will also regulate growth and vigor of the root stock. Organized research work in these lines of mango is not available and hence, the present research work has been designed.

## RESEARCH METHODS

An experiment was carried out at Experimental Learning