

# Productivity Enhancing Technologies for Horticultural Crops

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# Productivity Enhancing Technologies for Horticultural Crops

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*for their concern to the people*



## PREFACE

Horticulture in India is fast emerging as a major commercial venture, because of higher remuneration per unit area and the realization that consumption of fruits and vegetables is essential for health and nutrition. Horticultural crops form an important part of wholesome food containing carbohydrates, proteins, minerals, dietary fibers and vitamins in adequate amount. They produce more edible energy and protein per unit area and time than many other food crops. There is an urgent need to increase horticultural productivity in order to provide nutritional security to the fast growing population of the country (increasing at 1.6% annually) which is expected to reach 1331 million by 2020. India plans to increase the production of horticultural crops to 200 million tonnes by 2020 from current level of 125 million tonnes (NHB, 2008).

In India, prospects of increasing production of horticultural crops by increasing land under cultivation are limited. Hence, it is essential to increase productivity of horticultural crops in order to meet the future demand and fulfillment of country's commitment to the sustainable horticultural development with the objective of nutritional security at individual level, poverty alleviation and employment generation through horticulture sector.

Even though India is leading in productivity of some horticultural crops like mango, banana, cauliflower, pea, coconut, cashew nut, ginger, turmeric and black pepper; still there is scope to increase productivity in other horticultural crops compared to other countries.

The average productivity of most horticultural crops in India is low. There is a wide gap between yields obtained and potential yields with improved varieties and technologies. For many crops, yield realized are much less than 50% of the potential. The productivity of horticultural crops is very low on farmers' fields as compared to that of the co-ordinated trials. The productivity in co-ordinated trials is also higher than that of the developed countries. The yield gap between the co-ordinated trials and on-farm trials could be bridged by adopting improved HYV/hybrids and good horticultural practices, thereby achieving the production target of 200 million MT by 2020.

Programmes, therefore, need to be taken up to reduce the yield gap by improving productivity. The main emphasis should be on improving the productivity by use of disease-free, quality planting material of only released and recommended varieties/ hybrids, both in the public and private sector. High density planting by reduction in planting distance or by use of plant growth inhibitors and dwarfing rootstocks as recommended for crops like mango, citrus, apple, banana, pineapple and some temperate fruits will go a long way. Use of protected cultivation under controlled conditions for growing

fruits like strawberry, vegetables such as cucumber, cabbage, capsicum, tomato and temperate vegetables in plain areas and high value cut flowers for domestic use and export need to be promoted. The cultivation of crops, which produce higher biomass/unit area/unit time like, banana, pineapple, papaya, potato, sweet potato, cassava, elephant foot yam should be taken up in areas requiring poverty alleviation and nutritional security.

The information on productivity enhancing technologies in horticultural crops (fruits, vegetables, plantation, spice, tuber, ornamental, medicinal and aromatic crops) is very much scattered. There is no book at present which comprehensively and exclusively deals with the above aspects on horticultural crops. The present book is divided into two parts. The first part deals with the principles of productivity enhancing technologies covering aspects such as use of high yielding varieties/hybrids, high density planting, micro-irrigation, fertigation, integrated nutrient management, protected cultivation, bioregulators, biotechnological approaches, post-harvest management, integrated weed management, integrated pest management, integrated disease management and integrated nematode management. The second part of the book deals with crop-wise productivity enhancing technologies. The book is illustrated with excellent quality photographs enhancing the quality of publication. The book is written in lucid style, easy to understand language along with adoptable recommendations for enhancing the productivity.

In view of greater emphasis being given by the Government of India to horticulture by establishing horticulture mission and exclusive State Horticultural Universities, there is an urgent need for good text books to teach courses on different disciplines of horticulture. In this context, the present book is of immense help to all those concerned with enhancement of productivity in horticultural crops.

This book can serve as a practical guide to practicing farmers of horticultural crops. Further, it is a useful reference to policy makers, research and extension workers and students. The material can also be used for teaching post-graduate and under-graduate courses. Suggestions to improve the contents of the book are most welcome (E-mail: [reddy\\_parvatha@yahoo.com](mailto:redy_parvatha@yahoo.com)).

The publisher, Scientific Publishers (India), Jodhpur, deserves commendation for their professional contribution.

June 5, 2010

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*Section - I*

**PRINCIPLES OF PRODUCTIVITY  
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