

# Arid Fruit Research

Atul Chandra  
Anju Chandra  
I.C. Gupta

# **ARID FRUIT RESEARCH**

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*S.P. Singh*

'Advances in Horticulture and Forestry' is an annual publication. Its main aim is to communicate current advancements which are made in the field of horticulture and forestry to educate the masses. It carries recent findings from the field as well as from the laboratories, and information on present state of knowledge on various topics on pomology, olericulture, floriculture, fruit and vegetable preservation and landscaping gardening. Not only this, it includes information on forestry, agroforestry, social forestry which are most essential for solving the problems of fire wood, fodder, feed, fruits small timber, medicines etc. The given information will open a new vistas in the improvement of environment and ecological balance, and will provide ways of utilization of wastelands, planting on arid and semi arid regions leading to unending greenery.

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*Atul Chandra, Anju Chandra and I.C. Gupta*

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**1992**

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*H.F. MacMillan*

The present book has been considerably useful and appreciated by all who are interested in or connected with agricultural or horticultural undertakings in the tropical and subtropical areas and particularly by residents who are desirous of establishing or improving their gardens

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## FOREWORD

About 12 percent of India's total area is arid, the extent of arid area being 31.7 mha. Out of this, 19.6 mha alone is in Rajasthan, 1.45 mha in Punjab and 1.28 mha in Haryana. Annual average rainfall of this area is 700 mm. This area does not have irrigation facilities and availability of irrigated land is also limited. However, the arid area is suitable for production of various types of fruit crops.

At present the fruit culture is being practised in 2.9 mha, but as per recommendations of National Commission on Agriculture, by the end of this century, this area must be increased to at least 4 mha. To achieve this goal, it is imperative that concerted efforts be made seriously to utilise the maximum land available in arid areas for fruit crops and high level researches be conducted by the Horticulturists working in the Universities and Institutes to develop best varieties suitable for these areas.

It is a great pleasure for me to learn that Dr. Atul Chandra has been working extensively on arid fruit crops for about a decade and his main area of research is nutritional aspects of fruit crops. He has written a book entitled "Arid Fruit Research" co-authored by his wife Mrs. Dr. Anju Chandra and Dr. I.C. Gupta, Principal Scientist (Soil Chemistry), CAZRI, Jodhpur. This book systematically presents the available information on the research work done in the recent decades. It is a complete treatise on the theory and practice of Arid Fruit Culture.

The book covers the researches on various aspects of arid fruits mainly in Uttar Pradesh, Haryana, Punjab and Rajasthan. It has been divided into eighteen chapters. The book is a master key to arid fruit culture.

I hope the book will attain great popularity among the students, teachers and researchers working in the field of Pomology.

(Hari Govind Singh)  
Vice-Chancellor

G.B. Pant University of Agriculture & Technology  
Pantnagar (Nainital)

## PREFACE

The Indian hot arid zone covers nearly 31.7 mha (12%) of total geographical area of our country. Significantly more than 61 per cent of the area falls in Rajasthan and more than 50 per cent of the area in arid zones is adversely affected with moderate to severe desertification. In arid zone, only about one per cent area is covered under trees as compared to nearly 10 per cent average in the country. It reveals that a lot of potential exists to extend the area under fruit trees in arid zone. The Government of India is laying more emphasis on Horticulture under VIII Five Year Plan and a sum of rupees one thousand crores has been allocated for the development of horticulture. To give due recognition to arid fruits, a National Research Centre on Arid Fruits has been established at Bikaner. In north India, arid fruits are mainly grown in the states of Rajasthan Punjab, Haryana and Uttar Pradesh. A good deal of research work on these fruits has been done mainly in these states on various aspects of arid fruit culture by Agricultural Universities, ICAR Institutes and State Departments of Agriculture/Horticulture. However, there has been limited effort to compile such information in the form of a reference book. In the present book, efforts have been made to highlight the researches conducted on different aspects on these fruit crops. It is hoped that such information provided in the book will be of great use to research workers, students, extension specialists, fruit growers and planners in the Departments of Horticulture and Agriculture and also to the agencies which are entrusted with the utilization of wasteland, development of arid zone and improvement of the environment. First chapter of the book deals with Climate, Soils and Irrigation Waters. Each fruit crop has been described in a separate chapter. Uses and Nutritive Value, Soils and Climate, Cultivars, Propagation, Establishment of Orchard, Nutrition, Flowering and Fruit set, Diseases and Insects, Post harvest handling and Storage, Yield and Economics etc. have been discussed precisely. The References cited in the text have been given at the end of chapter.

The authors are deeply indebted to many experts having specialised experience of different fruit crops of arid region without which this book could not have been completed. We are specially thankful to Dr. M.S. Manohar, Professor of Horticulture & Dean Rajasthan College of Agriculture, Udaipur, Dr. O.P.

Pareek, Project Director, (Fruits), NRCAF, Bikaner, Dr. P.C. Jindal, Senior Scientist, Division of Horticulture & Fruit Technology, Indian Agricultural Research Institute, New Delhi and Dr. K.M. Singh, Principal Scientist, Water Technology Centre, Indian Agricultural Research Institute, New Delhi for supplying relevant literature on the subject. The inspiration, encouragement and support given by our parents and forbearance by the family members are also duly acknowledged.

July 14, 1993

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