



RESEARCH ARTICLE

OFF SEASON MANGO PRODUCTION: A FALSE TECHNOLOGY FOR AGAINST NATURE

*Ravindran, C.

Horticultural Research Station, Tamil Nadu Agricultural University, Kodaikanal, Dindigul
District, Tamil Nadu, India-624103

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*Corresponding author:

Ravindran, C.

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ABSTRACT

India is the second largest producer of fruits in the world next to China. Among the different fruit crops, Mango is the national fruit of India and contributing to 51% of world total production till 2022. Various technologies were developed and released by the National Institute and State Agricultural Universities to increase production of Mango for the benefit of farming communities. Among them, off season production of flowering (July-August) and fruiting (December- January) in mango through use of chemicals (Pacllobutrazol) is practiced by the farmer to get remunerative price for produce. The chemical not only reduce soil microbial count and also reduce the longevity of fruit tree. The nature is given in India to harvest mango fruits from beginning of February to October in different states. The only three months (Nov-January) consumer unable to get mangoes which is also possible through unusual phenomenon of regular off-season crop at Kanyakumari (the southernmost tip of the Indian peninsula) has been attributed to the influence of the fairly well distributed rainfall of the area. Hence, the off season production technology in mango is against nature and forcing the tree to bear two crops per year which is expecting like two children per year.

INTRODUCTION

The global horticultural industry has grown several-folds in the last 50 years. World fruit production is estimated at 676.9 million tonnes. The fruit industry is flourishing and opening up new prospects of R & D, skill and employment generation due to current awareness about the changing lifestyle, dietary habits, processing and exportation. The challenges of overcoming malnutrition to majority of the global population are yet to be fulfilled, hence fruit crops has major role to play. Indian Horticulture sector has been the mainstay of Indian Agriculture with a contribution of about 30 per cent to the agricultural GDP from about 14 per cent area and 40 per cent of total export earnings in agriculture as a whole. Horticulture production increased 13-folds from 25 million metric tons during 1950-51 to 331 million metric tons during 2020-21 surpassing food grain production. Currently, with 18% area, this sector contributes to about 33% of the gross value-added in the agricultural GDP of the country. India ranks second in production of horticultural crops contributing to about 12% of world's fruit and vegetable baskets. India has vast diversity of underutilized fruit crops of economic importance and several of which are yet to be mainstreamed.

The present day's agriculture is relying less than 100 plant species to provide food and nutrition to more than 90 percent of the population. There are more than 12,500 edible plant species in the world. Out of these, about 7,000 species have been used to a significant extent by humans at some point in time. A large number of fruit crops edible species remain neglected. In the present situation, the fruit production must look for the sustainable use of the available diversity in the exotic and neglected under-utilized fruit crops. The major fruit crops diversity in different states of India are given in Fig. 1. Fruits and vegetables account for nearly 90% of total horticulture production in the country. and is the leader in several horticultural crops, namely Mango, Banana, Papaya, Cashewnut, Arecanut, Potato and Okra. Mango is the national fruit of India. India is the world's largest producer of mangoes and home of about 1000 varieties, however only a few varieties are commercially cultivated throughout India (Table 1). Most Indian mango cultivars have specific eco-geographical requirements for optimum growth and yield. The Northern/Eastern Indian cultivars are usually late bearing compared to Southern and Western Indian cultivars. Some of the local cultivars of mango bear fruits throughout the year in the extreme Southern parts of India.



Fig. 1. Fruit Diversity in India

Fruits	Available Season in India											
	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Mango			■	■	■	■	■	■	■	■		
Banana	■	■	■	■	■	■	■	■	■	■	■	■
Guava					■	■	■	■	■	■		
Papaya	■	■	■	■	■	■	■	■	■	■	■	■
Pineapple				■	■	■	■					
Grapes					■	■	■					
Orange	■	■										■
Sweet lime	■											■
Pomegranate	■									■	■	■
Apple										■	■	■
Kiwi	■											■
Custard apple												
Strawberry	■	■										■
Sapota	■	■	■	■	■	■	■	■	■	■	■	■

Fig 2. Different fruit crops and season of availability in India

Table 1. All India Area, Production and Productivity of Mango

Year	Area	Production	Productivity
2011-12	2378	16196	6.8
2012-13	2500	18002	7.2
2013-14	2516	18431	7.3
2014-15	2163	18527	8.5
2015-16	2208	18642	8.4
2016-17	2212	19506	8.8
2017-18	2258	21822	9.7

Area in 000 Ha , Production in 000 MT
Productivity MT/Ha

Table 2. Major state producing commercial varieties of in India

States	Varieties
Uttar Pradesh	Bombay Green, Chausa, Dashehari, Mallika, Amrapali, Ambika 2000, Arunika 2008 and Langra
Andhra Pradesh	Banganapalli, Suvarnarekha, Neelum, Ratna, Sihdhu, Ambika 2000, Arunika 2008 and Totapuri
Telangana	Banganapalli, Suvarnarekha, Neelum, Ratna, Sihdhu, Ambika 2000, Arunika 2008 and Totapuri
Karnataka	Alphonso, Totapuri, Banganapalli, Pairi, Neelum, Ratna, Sihdhu, Ambika 2000, Arunika 2008, ArkaPuneet, ArkaAnmol, ArkaNeelkiran and Mulgoa
Bihar	Bombay Green, Chausa, Dashehari, Fazli, Mallika, AmrapaliGulabkhas, KishenBhog, Himsagar, Zardalu, Ambika 2000, Arunika 2008 and Langra
Gujarat	Kesar, Alphonso, Rajapuri, Jamdar, Totapuri, Neelum, Dashehari and Langra
Maharashtra	Alphonso, Mankurad, Mulgoa, Pairi, Rajapuri, Kesar, Gulabi, Vanraj
Tamil Nadu	Neelum, Bengalora, Kalapad, Panjavarnam,

Table 3. Mango season in India

India State	Mango Season and harvest in India
Kerala (Muthalamada)	Beginning of February and March
Tamil Nadu	April – May
Maharashtra	April – May (Ratnagiri), May-June (in other regions)
Gujarat	May – June
Andhra Pradesh	May – July (Coastal districts), May (Rayalaseema)
Karnataka	May -July
Uttar Pradesh	June- August
Bihar and Northern states of India	June – August
North Indian Varieties	Sep- October

Mango season and harvest in India are staggered through the country's major producing state are given (Table 2).

CONCLUSION

The nature is given in India to harvest mango fruits from beginning of February to October in different states.

Due to its high mobility, high stability and potential for bioaccumulation, the risks of Paclobutrazol application to the health of organisms and ecological systems have become a serious concern. Hence scope for selection of regular off-season cropping varieties and individual trees of such varieties in an effort to stabilise off-season crop production instead of using chemicals for forcing the mango to bear two crops per year.

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