

# Model Training Course

## Pomegranate Supply Chain



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## POMEGRANATE SUPPLY CHAIN

Globally, fresh produce markets have changed dramatically over the last two decades. Positive economic growth in much of Asia and the Pacific region has led to shifts in consumer demand, technological change in marketing and strong retail purchasing power. At the same time, consumer preferences have changed with an increased awareness of food safety, growing consumption of fresh produce and demand for a variety of familiar and unfamiliar produce items, organic produce and convenience foods. Consumers are increasingly concerned about the environmental and social conditions under which their food is produced/processed. At the retail level, consolidation has occurred at a rapid pace as large supermarket chains have emerged. This has resulted in changes in relationships among producers, wholesaler, super markets and retailers.

Efficient supply chain management of horticultural produce begins from SEED. A seed is a very simple few milligrams entity, when it gets amenable soil and moisture conditions it grows in to a big TREE, carrying fruits and thousands of seeds. A seed is a hidden ORCHARD when cared properly in nursery and transplanted to field it can cover thousands of hectares of land laden with trees and delicious FRUITS. The fruits are either channeled into INDIAN MARKET for human CONSUMPTION or are TRANSPORTED in EXPORT MARKET for trade. Transportation to distant places requires good QUALITY produce that is properly PACKAGED so as to cause minimum PHYSICAL and MICROBIAL injury to fruits. Excellent field conditions lead to minimum POST HARVEST LOSSES, making the fruit suitable for PROCESSING. An efficient supply chain management of horticultural produce deals with all stages from crop to shop. If the chain is managed efficiently at all entry points the profits or cash flow increases for all stake holders.

Drought hardy crops, especially perennial fruits with deep root systems are capable of surviving extreme radiation and temperatures and provide income security along with , nutritional and food security. Amla, Bel,Ber, Karonda, Pomegranate etc., are the fruit crops suitable for drylands. There is a scope to introduce medicinal and aromatic crops as part of cropping systems as an under crop, cash crop or inter crop in the dry lands. The performance of arid zone fruits viz., Ber, Aonla, Pomegranate, varies with the quantum and distribution of rainfall. Rajasthan accounts for 61% of arid zone area of the entire country. Horticultural production if not impossible it is a gigantic austere, task to perform in climatically harsh conditions as that occurs in Rajasthan.

India is leading in fruit production with overall production touching an all time high figure of 81285 MT. it is the largest producer of Banana (26509 MT), Guava (3198 MT) and Mango (18002 MT) in the world. India is suitable for growing all kinds of fruits from temperate climate Apple (1915 MT) to tropical fruits like Mango and Guava. It produces sweet quality Pineapple (1571 MT) as well as Litchi (580 MT). Pomegranate is produced all over India touching an average production of 745 MT in the year 2013.

Pomegranate is a fruit with proven health benefits, it holds good quantities of vitamins, potassium and antioxidant polyphenols. Moreover, research shows pomegranate is effective in reducing heart disease risk factors, risks of cancer and other maladies. It is a high value fruit crop; besides entire tree is of great economic value. Rajasthan has 1.01 thousand hectare area under its production giving yield of 5.50 thousand MT having 5.45 productivity factor. It is suitably grown in entire country with Maharashtra leading with 55% (408 MT) production followed by Karnataka 20% (150 MT) and Gujarat 11% (79.02 MT) fruit production. The product is sold in wholesale markets on an average from 2822

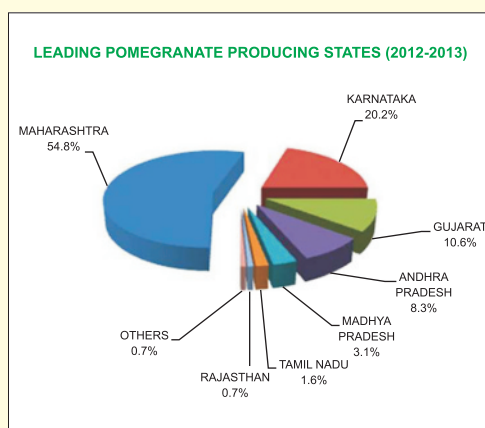
## Overall Area Production and Productivity of Fruits in India, 2013

Particular	Area ('000'HA.)	Production ('000'MT.)	Productivity (Production/Ha.)
Banana	776.00	26509.00	34.20
Mango	2500.00	18002.00	7.20
Citrus	1042.00	10090.00	9.70
Others	1402.00	9315.00	6.60
Papaya	132.00	5382.00	40.70
Guava	236.00	3198.00	13.60
Grapes	118.00	2483.00	21.10
Apple	312.00	1915.00	6.10
Pineapple	105.00	1571.00	14.90
Sapota	164.00	1495.00	9.10
Pomegranate	113.00	745.00	6.60
Litchi	83.00	580.00	7.00
Total	6982.00	81285.00	11.60*

INR to 6656 INR per quintal depending on the quality of fruit. The maximum price is 15000 INR per quintal in Chittorgarh market in Rajasthan followed by Bhiwani in Haryana and Azadpur market around Delhi. Maximum quantity of fruits goes in Azadpur market in Delhi followed by Mumbai, Nagpur and Sangli in Maharashtra state and Ahmadabad in Gujarat state.

Maharashtra state cultivates Pomegranate in largest area (78000 h) followed by state of Karnataka (16000 h) with a total production of 558.30 MT, around 75 percent production of entire country's production comes from these two states. Gujarat and Andhra Pradesh are upcoming states in Pomegranate production. As the coastal line falls in Gujarat the export potential of Jalore seedless variety seems to be bright in near future.

There has been a steady increase in area and production of pomegranate in the country. It is estimated that by the year 2025 the area under pomegranate may increase to 7.5 lakh ha from 1.13 lakh ha at present. Production is expected to increase by ten times and export seven times. A strong research backup would be required to support quality production.



Pomegranate is an important fruit crop of Maharashtra and Karnataka. In Maharashtra, production of Pomegranate is mainly concentrated in the Western Maharashtra region and the Marathwada region. Pomegranates are commercially cultivated in Solapur, Sangli, Nashik, Ahmednagar, Pune, Dhule, Aurangabad, Satara, Osmanabad and Latur districts. The variety Ganesh and Bhagwa cultivated in Maharashtra are suitable for export purposes.

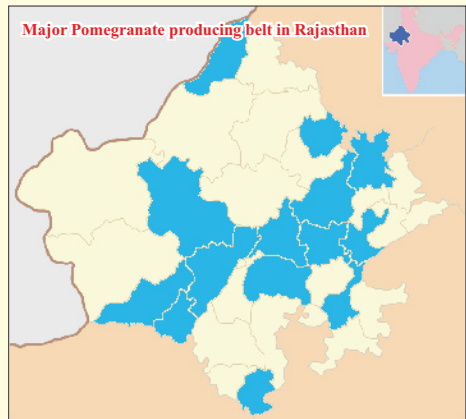
Pomegranate tree comes under fruiting three times in a year. It is customary agro-technique in arid region to shed fruits of summer and winter season to harvest good crop, flower setting that occurs in rainy season is found suitable in arid climate. But in Tamil

States	Variety grown
<b>Maharashtra</b>	Ganesh, Bhagwa, G-137, Mridula and Ruby
<b>Andhra Pradesh</b>	Ganesh, Bhagwa, and G-137
<b>Karnataka</b>	Bhagwa, Jyoti and Ruby
<b>Tamil Nadu</b>	Mridula, Ganesh, Jyoti and Co-1 (hybrid)
<b>Rajasthan</b>	Jalore seedless and Bhagwa
<b>Gujarat</b>	Dholka, Jalore seedless and Ganesh
<b>Madhya Pradesh</b>	Jyoti and Bhagwa

Nadu and Maharashtra states more fruitings per tree are allowed. The harvest continues for entire year in Karnataka and Maharashtra states.

Pomegranate is exported through sea route to Europe (42%) and Middle East countries (47%) neighboring countries also import 1% of produce. The entire export consignment is filled in 4 kg cartons with different counts, may be 10, 12 and 15. If the size of the fruits is big only 10 may get into a carton. It is estimated that 4000 cartons divided in pellets are needed to fill a big container, pellets help in retaining the structure of the cartons besides protecting the fruit from getting damaged while in transportation.

The major benefit of production (89%) remains with farmers. If the produce is sold in Indian market the profit of service provider is less as the quality of fruit that is sold in India is inferior to export quality. An orchard is purchased by a service provider if 40% of fruits are of export quality. A single container requires 16 tons of fruit i. e. 4000 cartons.



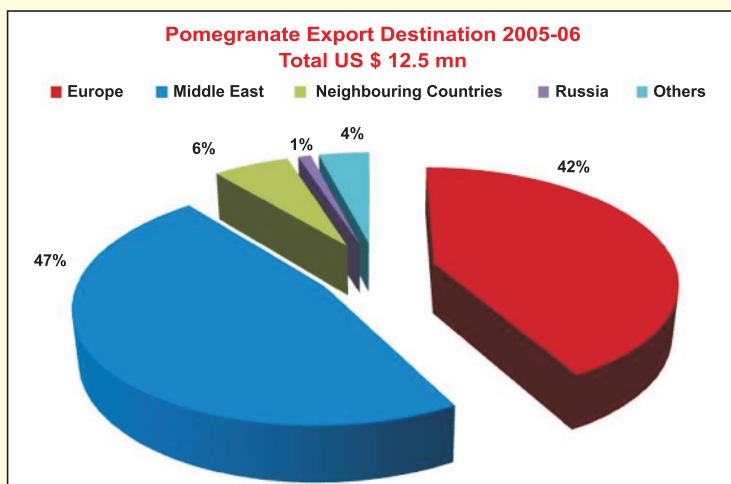
Area: 875 hectare  
 Production: 6252 MT  
 Yield: 7145 kg/h

The collection time for container is seven months, if the produce is delayed for any reason natural or manmade the benefits to service provider and farmers are proportionately reduced; it is the export market that governs Indian market.

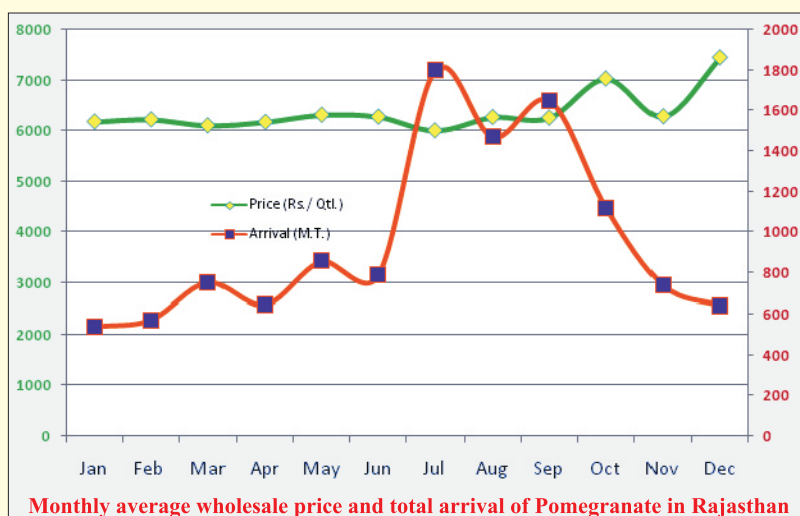
Harvesting season of Pomegranate												
States	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Andhra Pradesh												
Gujarat												
Karnataka												
Madhya Pradesh												
Maharashtra												
Rajasthan												
Tamil Nadu												

Round the year
  Peak Season
  Lean Season

Source : Directorate of Horticulture / Agriculture of respective states

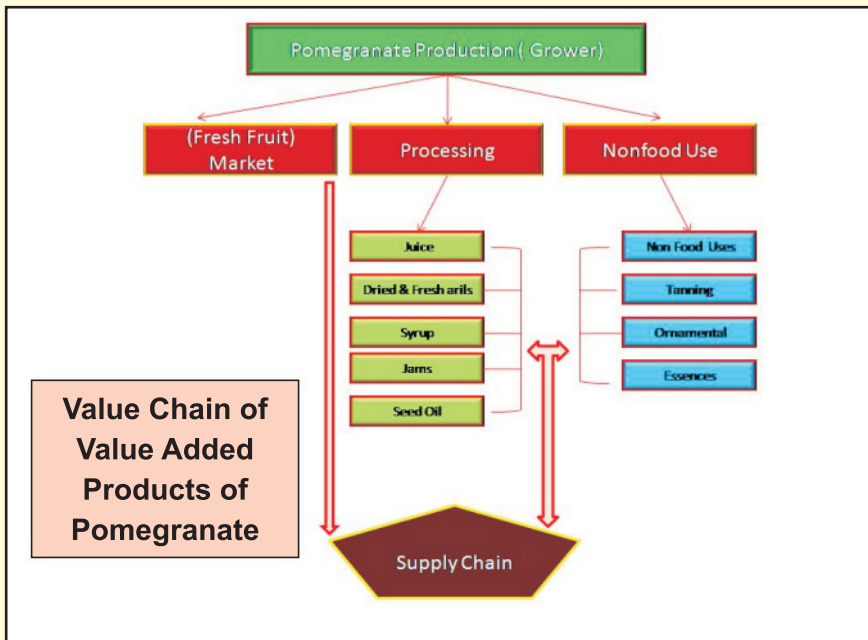
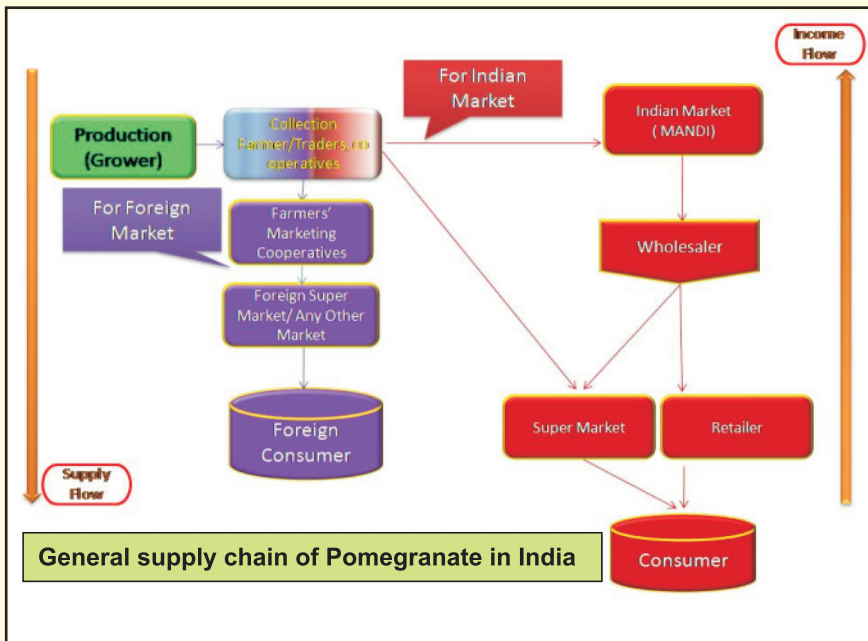


Fruit available in Rajasthan around Chittorgarh market is of export quality, farmers of this region need technological and technical empowerment to earn desirable returns for their produce. Productivity of Pomegranate is greater in Tamil Nadu region however, area of cultivation is less. Maharashtra produces greater quantity of Pomegranate as the area under cultivation is high but productivity is low. Tamil Nadu is the leading state that grows Pomegranate with full technological package. In the proposed supply chain farmers must obtain advance training in production technology. Government should offer support in supply of critical inputs such as improved saplings, biosafe chemical pesticides



and insecticides for clean and hygienic production. On farm grading of fruit and availability of cold chain maintenance from farm to controlled atmospheric storage station till export to destination country will go a long way in helping farmers.

Fresh produce availability for processing and value addition is only 2-3 % of entire production, processing sectors have tremendous possibilities to grow as FDI is released up to 100 % in this sector; National Mission on Food Processing is a giant leap forward to promote processing sector vis-a-vis farming enterprise.



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