

doi: <https://doi.org/10.20546/ijcrar.2025.1304.004>

## Economics of Processing Management of Pomegranate by Sahyadri Farmer's Producer Company Ltd Nashik in Maharashtra

**Y. C. Sale\* and M. B. Nikam**

Associate Professors of Agril.Economics, College of Agriculture, Pune and CET Cell, Mumbai, India

\*Corresponding author

### Abstract

Food processing sector is one of the largest sectors in India in terms of production, consumption, export and growth. India's Food processing sectors covers fruits and vegetables, milk and milk products, meat, poultry and marine, alcoholic beverages, plantation, grain processing and other consumer product group like confectionary, chocolates, coco products, soya products, mineral water and high protein foods. India is second largest producer of vegetables next to china in the world. In India, it is grown in an area 9.575million hectare with the productivity 17.7 MT/HA which contributes 14% of total world production of vegetables. Food and food products are the biggest consumption category in India, with spending on food accounting for nearly 21% of India GDP and with a market size of \$181billion. The study on "Economics of Processing Management of Pomegranate by Sahyadri Farmer's Producer Company Ltd Nashik in Maharashtra" has been undertaken in association with "Sahyadri Farmer's Producer Company Ltd.". with objective of the Study of processing management of pomegranate arils at Sahyadri Farmers Producer Company Ltd.. The sample size consisted of 10 suppliers the detail of supplier which were selected purposively. The primary and secondary data related to the year 2019-20 were collected. They process more pomegranates from the month of December to January and store this processed materials in cold storage. Total cost of equipments used for fruits and vegetables processing is Rs.16300. That total cost of machinery used for processing of fruits and vegetables is Rs.1, 74, 50,000. Per Unit Cost of Processing = Rs. 62622941.82 /- Cost of Processing / Kg = Rs. 52.71/- Cost of Processing Pomegranate Arils = Rs. 7.86 /.

### Article Info

Received: 25 February 2025

Accepted: 28 March 2025

Available Online: 20 April 2025

### Keywords

Agriculture, knowledge, skills, tools, technique, production, consumption, export.

### Introduction

Agriculture is backbone of Indian economy. The food processing industry in India is one of the largest in terms of production, consumption, export and growth prospects. The fruit and vegetables plays important role in processing of agricultural products (Rao, *et al.*, 2003).

Process management is the ensemble of activities of planning and monitoring the performance of a process. Processing is the value addition in perishable products.

Processing management is the application of knowledge, skills, tools, technique and systems of define, visualize, measures, control, report and improve processes with the goal to meet customer's requirements profitably. Food processing is the transformation of raw ingredient into food or food into other form (Edward, 1973).

Food processing is typically takes clean, harvested crops and uses these to produce attractive, marketable and often long shelf life food products. Food processing sector is one of the largest sectors in India in terms of

production, consumption, export and growth. India's Food processing sectors covers fruits and vegetables, milk and milk products, meat, poultry and marine, alcoholic beverages, plantation, grain processing and other consumer product group like confectionary, chocolates, coco products, soya products, mineral water and high protein foods (Sharma and Jain, 2011). India is second largest producer of vegetables next to china in the world.

In India, it is grown in an area 9.575million hectare with the productivity 17.7 MT/HA which contributes 14% of total world production of vegetables. Food and food products are the biggest consumption category in India, with spending on food accounting for nearly 21% of India GDP and with a market size of \$181billion. The Indian domestic food market is expected to grow by nearly 40% of the current market size to \$258 billion by 2015 and \$344 billion by 2025. Now days, food processing industry is blooming sector due to increasing demand for processed frozen product and future opportunities. "Sahyadri Farmer's Producer Company Ltd." is entered in agricultural processing sector since 2011. Hence, a study on "Economics of Processing Management of Pomegranate by Sahyadri Farmer's.

Producer Company Ltd Nashik in Maharashtra" have been undertaken in association with "Sahyadri Farmer's Producer Company Ltd.". with objective of the Study of processing management of pomegranate arils at Sahyadri Farmers Producer Company Ltd.

### **Research Methodology**

The study was undertaken to study processing Management of Pomegranate Arils at Sahyadri Farmers Producer Company Ltd Nashik. which was purposively selected as per the need of the company. The sample size consisted of 10 suppliers the detail of supplier which were selected purposively. The required data were collected with the help of primary as well as secondary data. The primary data related to the year 2019-20 were collected through specially designed questionnaire. Secondary data related to year 2019-20 were obtained from records of company.

### **Results and Discussion**

#### **Collection of Commodities For Processing Purpose**

The Sahyadri Farms collects the raw material directly from agents. They select the raw material on the basis of appearance, firmness, size and color. They collect raw

materials from Nashik, Indapur, Sangamner, Rahta, Sangola

#### **Processing Planning of Products**

They make monthly schedule for processing of products. The Sahyadri Farms process more raw material according to season of availability of pomegranate and during the season when prices of raw material is less.

They process more pomegranate from the month of December to January and store this processed materials in cold storage and according to order materials dispatched.

#### **Quality Policy**

Sahyadri Farms is committed to deliver to its customers an increasing range of safe Process product of the best quality, processed under hygienic conditions.

Towards this end, the company will be uncompromising and unrelenting in the implementation of quality management systems and HACCP that will enable it to continuously improve its processes and to satisfy the expectations of its customers.

#### **Machinery Used For Processing Purpose**

Sahyadri Farmer's producer private Ltd. uses various machinery for Fruits and vegetables processing. Machineries and equipments used are mentioned below.

#### **Conveyor Belt**

Continuous moving belt of fabric, rubber or metal used for transporting objects from one place to another. Manually sorting, remove damaged corns and peas and passing the corns and peas to machine is done on conveyor belt.

#### **Depoding Machine**

Depoding machine is used for shelling of peas. It helps in saving time and efforts of labor and with less time more shelling of peas is possible.

#### **Washer**

Washer is used for washing the green peas and sweet corns with sodium hypo chloride solutions and then with clean water.

**Table.1** Parameters of Pomegranate For Processing Purpose

Sr. No.	Parameters	Specification	Method
		Pomegranate	
A	Physical Parameters		
1	Colour	Light red to red	Visual
2	Flavour	Characteristic	By Sensory
3	Taste	Characteristic	By Sensory
4	Size(diameter in mm)	5mm to 8 mm	Visual
5	Broken arils	Max 7%	Visual
6	Damaged Fruits (%)	Max 3	Visual
B.	Microbial Parameter		
7	Visual Fungal Growth	Absent	Visual
8	Insects	Absent	Visual;
C.	Chemical Parameter		
9	Brix	Min 15	Refractometer
10	Temperature at center	Min -18 c	Thermometer

**Table.2** Equipments Used For Processing of Fruit And Vegetables

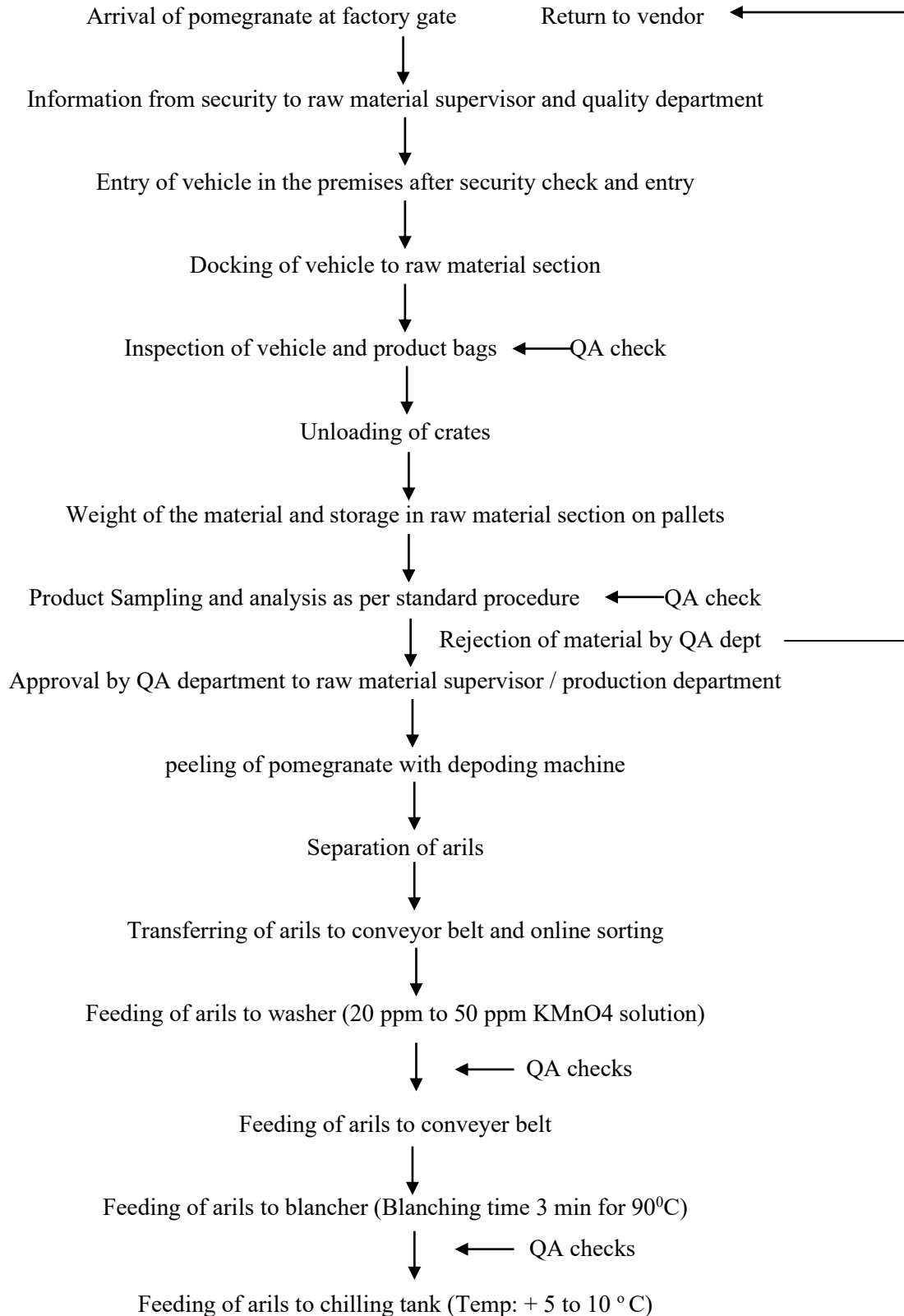
Sr No	Name of Equipment	Rate(Rs)	Quantity	Amount(Rs)
1	Weighing Balance	1500	3	4500
2	S.S Table	4000	2	8000
3	S.S Jar	100	8	800
4	Water tank	1500	2	3000
	<b>Total</b>			<b>16,300</b>

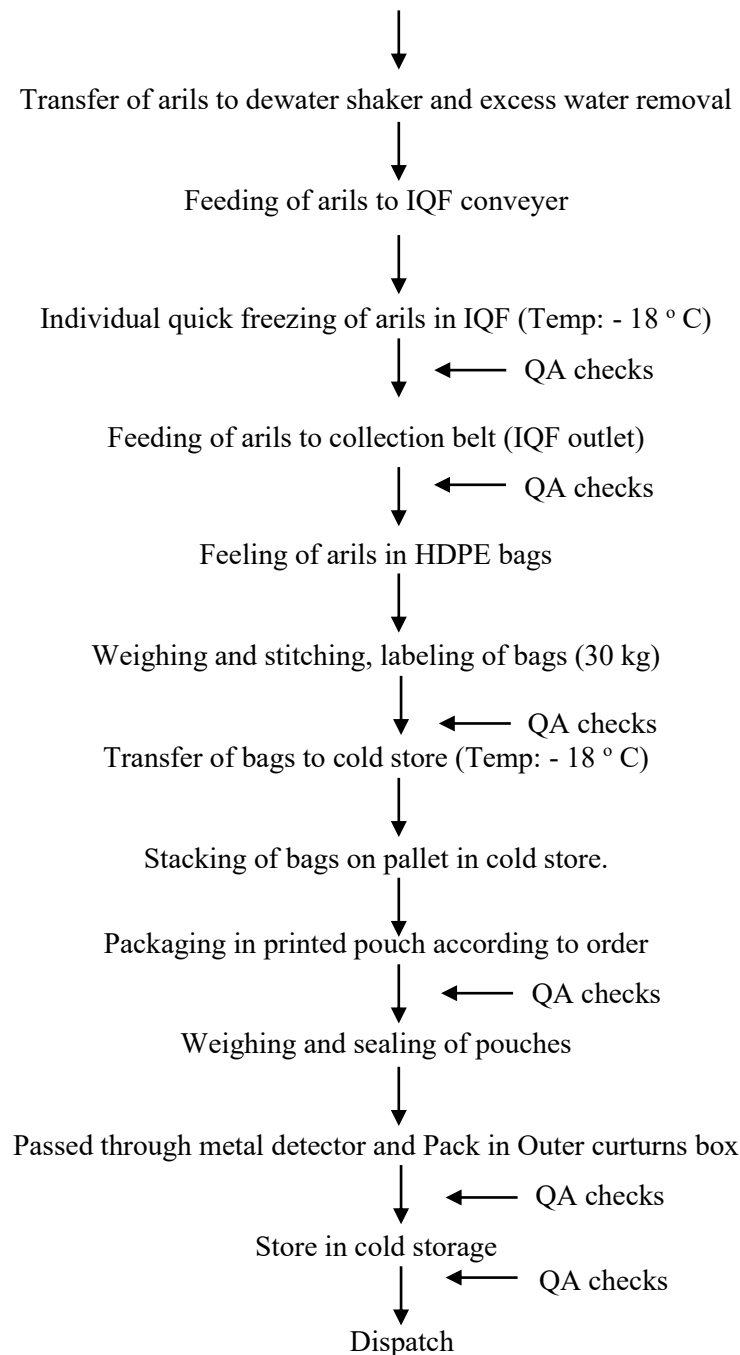
**Table.3** Machinery Used For Fruits & Vegetable Processing

Sr No	Name of Machinery	Rate (Rs)	Quantity	Amount(Rs)
1	HP Receiver	2000000	2	4000000
2	Condenser plate heat exchange	1500000	2	3000000
3	Condenser pump	20000	3	60000
4	Inter Cooler	300000	6	1800000
5	Compressor	500000	6	3000000
6	L P Receiver	300000	2	600000
7	Liquid pump	10000	4	40000
8	Boiler	700000	2	1400000
9	Inspection belt and Elevator belt	125000	2	250000
10	IQF	1000000	1	1000000
11	Blancher cumculer	200000	1	200000
12	Printing Machine	100000	1	100000
13	Sealing Machine	1250000	1	1250000
14	Metal Detector	550000	1	550000
15	Taping Machine	200000	1	200000
	<b>Total</b>			<b>1,74,50,000</b>

**Flowchart.1** Flow Chart of Pomegranate Arils Processing

**1. Procedure For Pomegranate Processing**





### **Blancher cum Cooler**

Blancher is used for blanching of green peas and sweet corns and after blanching cooling is done.

### **Vibrator**

Vibrator is used for dewatering or removal of excess water from vegetables.

### **IQF**

IQF is used for freezing the individual piece. Capacity of IQF was 1000 kg/hr. The temperature of IQF is -18<sup>0</sup> C.

### **Metal Detector**

Used for detection of metal in pouches during packing.

**Sealing Machine**

Sealing machine is used for sealing the pouches during packaging. Temperature required for sealing the pouches depend upon material used for packaging.

**Procedure for Processing**

**Cost of Processing For Pomegranate**

**Equipment Used For Processing**

Table 2 shows that total cost of equipments used for fruits and vegetables processing is Rs.16300.

**Machinery Used For Processing**

Tables 4 shows that total cost of machinery used for processing of fruits and vegetables is Rs.1, 74, 50,000.

**Estimation of Cost of Processing**

Cost of processing = Total Annual Variable Cost + Total Annual Fixed Cost

= 1289016.42 + 61333925.4

Per Unit Cost of Processing = Rs. 62622941.82 /-

**Cost of Processed Pomegranate Arils**

$$\begin{aligned} \text{Cost of processing / kg} &= \frac{\text{Total Annual Cost of Processing}}{\text{Total Annual Production}} \\ &= \frac{62622941.82}{1188079.75} \end{aligned}$$

Cost of Processing / Kg = Rs. 52.71/-

**Per Kg Cost of Processing**

$$\begin{aligned} \text{Per Kg cost of processing} &= \frac{\text{Fixed cost} + \text{Variable cost} - \text{R.M cost}}{\text{Production}} \\ \text{For pomegranate arils} &= \frac{61333925.4 + 1289016.42 - 53273000}{1188079.75} \end{aligned}$$

Cost of Processing Pomegranate Arils = Rs. 7.86 /

**Findings**

1. Procurement chain for pomegranate was Farmer → Supplier → Sahyadi Farms.
2. The suppliers identified for pomegranate for sahyadri farm’s Ltd. were mostly from Sangola, Indapur Nashik and Sanganner market.
3. The total quantity of pomegranate procured by Sahyadri Farms Company in 2017-18 was 1837 MT.
4. There is no price difference in supply pomegranates to SFPCL to other company as opinioned by 75 % percent Supplier.
5. Product share of company Processed pomegranate is 14.89 percent of total processed product
6. The cost of processing of pomegranate was Rs. 7.86/kg.
7. The cost of processed pomegranate arils was Rs. 52.71/kg.

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**How to cite this article:**

Sale, Y. C. and Nikam, M. B. 2025. Economics of Processing Management of Pomegranate by Sahyadri Farmer’s Producer Company Ltd Nashik in Maharashtra. *Int.J.Curr.Res.Aca.Rev.* 13(04), 25-30.  
doi: <https://doi.org/10.20546/ijcrar.2025.1304.004>