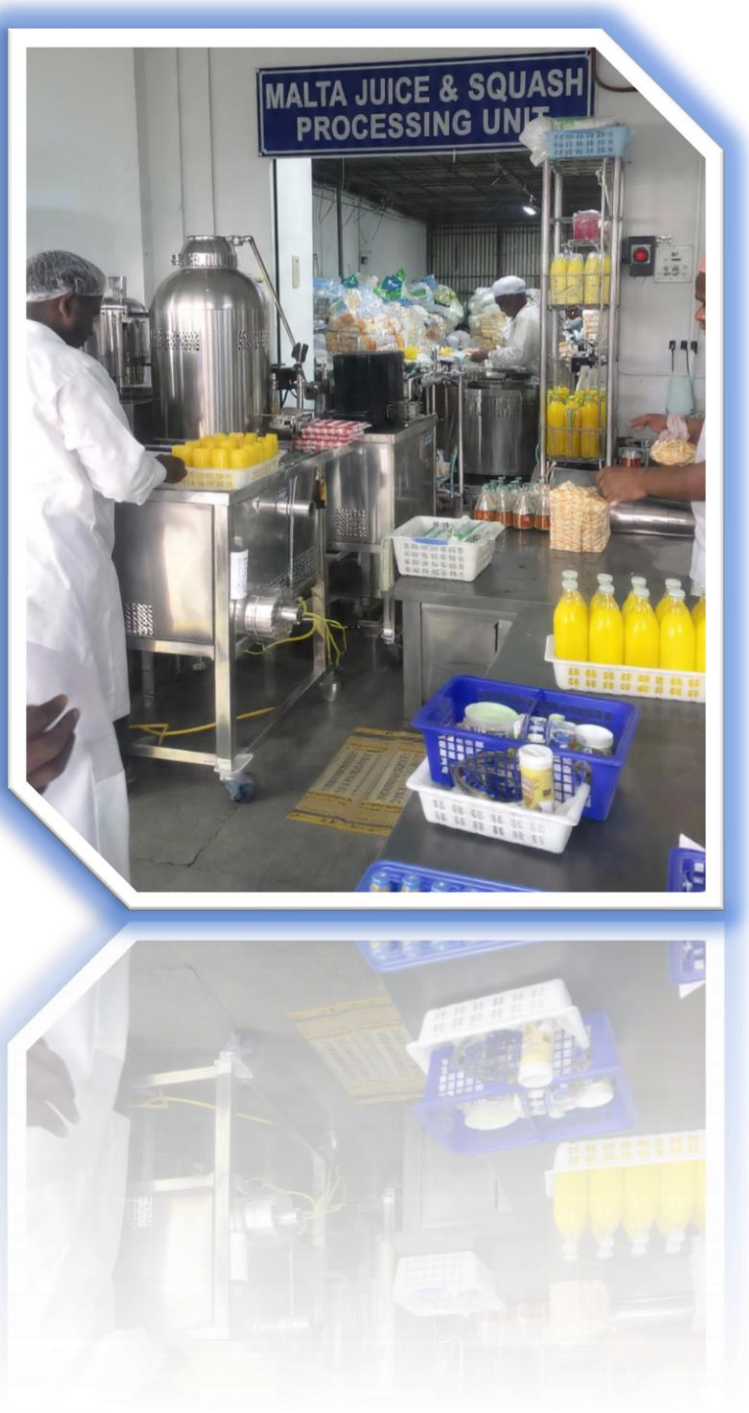
MALTA JUICE & SQUASH PROCESSING UNIT



MALTA JUICE & SQUASH PROCESSING UNIT

(Small–Medium Scale Agro-Processing Enterprise)

1. INTRODUCTION

Malta (Citrus sinensis), popularly known as Himalayan orange, is one of the most abundantly grown citrus fruits in the hill districts of Uttarakhand and adjoining Himalayan regions. Despite its excellent nutritional profile, high vitamin C content, and strong consumer acceptance, a significant portion of Malta production goes to waste every year due to a lack of processing facilities, poor storage infrastructure, and limited market linkages.

The proposed Malta Juice & Squash Processing Unit aims to bridge this gap by establishing a scientifically designed processing facility that converts fresh Malta into value-added products such as juice, squash, and nectar. The project not only enhances the shelf life and market value of the fruit but also creates a sustainable livelihood model for farmers, rural youth, and women entrepreneurs.

This unit is conceptualized as a small-to-medium-scale agro-processing enterprise, suitable for implementation under MSME, PMFME, or FPO-based business models, with strong backward linkages to farmers and forward linkages to retail and institutional markets.

2. PROJECT CONCEPT & BUSINESS MODEL

The proposed project is based on a value-addition and aggregation model, wherein raw Malta fruit sourced directly from farmers is processed into finished beverage products with significantly higher market value. The business model ensures year-round income generation by converting a seasonal crop into shelf-stable products.

The unit will operate on a farm-to-market approach, reducing post-harvest losses, stabilizing farmer prices, and ensuring quality control at every stage of processing. The model integrates procurement, processing, branding, and distribution into a single operational framework.

Business Model Overview

Component	Description
Input	Fresh Malta sourced from local farmers and FPOs
Processing	Cleaning, extraction, formulation, pasteurization
Output	Juice, squash, nectar
Distribution	Retail, hotels, institutions, online
Revenue	Product sales and bulk orders
Value Addition	3–5 times increase over raw fruit price

This model ensures that the entrepreneur earns not merely through trading but through processing and branding. Farmers benefit from assured procurement, while the unit benefits from stable raw material supply and predictable production planning.

3. MARKET POTENTIAL & INDUSTRY OVERVIEW

The Indian fruit beverage industry has emerged as one of the fastest-growing segments within the food processing sector, driven by changing consumer lifestyles, rising health consciousness, and increasing disposable incomes. Over the past decade, there has been a visible shift in consumer preference away from carbonated and synthetic beverages toward natural, fruit-based, and functional drinks. This transition has been further accelerated by increased awareness regarding immunity, nutrition, and preventive healthcare, particularly in the post-pandemic period.

Citrus-based beverages, especially those rich in Vitamin C, occupy a dominant position in this growing market. Consumers increasingly prefer drinks that offer natural refreshment along with nutritional benefits such as immunity enhancement, antioxidant properties, and digestive support. As a result, fruit juices, squashes, and nectar-based beverages have witnessed consistent growth in both urban and semi-urban markets. The demand is not only limited to retail consumers but has also expanded significantly in institutional segments such as hotels, hospitals, educational institutions, corporate cafeterias, and tourism establishments.

Within this broader market, Himalayan Malta (Citrus sinensis) holds a distinct competitive advantage. Grown in high-altitude regions under natural climatic conditions, Malta fruit is known for its superior taste, high juice content, rich vitamin C levels, and minimal chemical usage. The fruit enjoys strong consumer acceptance due to its refreshing flavor profile and perceived health benefits. However, despite high production potential, a substantial quantity of Malta fruit is currently sold at low prices or wasted due to inadequate processing, storage, and market linkages.

The growing popularity of region-specific and origin-based products has further enhanced the market prospects for Malta-based beverages. Consumers today actively seek products associated with natural sourcing, hill agriculture, and traditional farming systems. Beverages branded as “Himalayan” or “natural mountain produce” command better price realization and stronger brand loyalty, particularly in urban markets and among health-conscious consumers.

Institutional demand for fruit-based beverages has also shown a steady rise. Hotels, resorts, wellness centers, hospitals, educational institutions, and government establishments increasingly prefer natural fruit drinks over synthetic alternatives as part of their health and sustainability initiatives. Additionally, the rapid growth of tourism in hill states has created a year-round market for local fruit beverages, especially during peak tourist seasons.

From an industry perspective, the fruit processing sector in India remains significantly underutilized, with only a small percentage of total fruit production being processed. This gap presents a substantial opportunity for new processing units, particularly those located near production clusters. The availability of government support through schemes such as PMFME, along with rising private consumption, makes the timing highly favorable for investment in fruit-based processing enterprises.

In this context, the Malta Juice & Squash Processing Unit possesses strong market viability due to assured raw material availability, growing consumer demand, favorable policy environment, and expanding institutional consumption. The project is well positioned to cater to both retail and bulk markets while also offering scope for product diversification, branding, and future expansion into export-oriented segments.

Market Opportunity Analysis

Segment	Demand Trend
Packaged fruit juice	High
Squash & concentrates	Very high
Hospitality sector	Stable and growing
Institutional buyers	Increasing
E-commerce	Rapid growth

With increasing urbanization and preference for ready-to-drink beverages, processed fruit products have emerged as high-demand commodities. Malta-based products also enjoy premium positioning due to their Himalayan origin and perceived purity.

4. PRODUCT PROFILE

The processing unit will manufacture a range of Malta-based beverages catering to different consumer preferences. Each product is designed to meet FSSAI standards while maintaining natural taste and nutritional value.

Product Line

Product	Description	Packaging
Malta Juice	100% natural juice	200 ml / 500 ml
Malta Squash	Concentrated syrup	700 ml / 1 L
Malta Nectar	Pulp-based beverage	250 ml
By-products	Peel, pulp waste	Compost / feed

Diversification of products ensures better utilization of raw material, higher profitability, and reduced wastage. Squash and nectar also provide longer shelf life and better margins.

5. PROCESS FLOW CHART

The production process is designed to ensure food safety, quality consistency, and operational efficiency. Each stage follows standard food processing norms.

Process Flow Diagram

Fresh Malta Procurement

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Sorting & Grading

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Washing & Cleaning

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Peeling & Juice Extraction

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Filtration

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Formulation (Sugar + Water + Acidity Control)

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Pasteurization

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Filling & Bottling

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Capping & Labeling

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Packaging

↓

Storage & Dispatch

The flow ensures minimal human handling, controlled hygiene, and consistency in taste and quality. Pasteurization plays a crucial role in extending shelf life without chemical preservatives.

6. DETAILED PROCESS DESCRIPTION

6.1 Raw Material Procurement

Fresh Malta fruits are procured directly from farmers and FPOs during harvest season. Direct procurement reduces cost, ensures freshness, and improves farmer income.

6.2 Washing and Sorting

Fruits are thoroughly washed to remove dirt and pesticides. Damaged or under-ripe fruits are removed to maintain product quality.

6.3 Juice Extraction

Mechanical extractors are used to extract juice efficiently while minimizing pulp loss.

6.4 Formulation

Depending on the product:

- Juice: minimal sugar
- Squash: higher sugar concentration
- Nectar: pulp + water + sugar balance

6.5 Pasteurization

Heat treatment eliminates harmful microbes and ensures shelf stability without preservatives.

6.6 Bottling and Packaging

Products are hygienically filled, sealed, labeled, and packed for market distribution.

7. PLANT & MACHINERY REQUIREMENT

The machinery selection is based on processing capacity, automation level, and hygiene standards.

Machinery Requirement Table

Machine	Purpose
Fruit Washer	Cleaning
Juice Extractor	Juice extraction
Pulping Machine	Nectar preparation
Mixing Tank	Syrup blending
Pasteurizer	Heat treatment
Bottle Filling Machine	Filling
Capping Machine	Sealing
Labeling Machine	Branding
Storage Tanks	Intermediate storage

These machines ensure continuous production flow, reduced labor dependency, and consistent product quality.

8. INFRASTRUCTURE REQUIREMENT

Adequate infrastructure is essential for smooth operations, hygiene, and regulatory compliance.

Component	Area
Processing Hall	1,200 sq ft
Raw Material Store	500 sq ft
Finished Goods Store	600 sq ft
Office & Lab	300 sq ft
Utilities Area	300 sq ft

Total Area Required: 3,000 sq ft

9. MANPOWER REQUIREMENT

Human resources are required for operations, quality control, marketing, and administration.

Position	Number	Responsibility
Plant Manager	1	Overall operations
Machine Operators	2	Processing
Helpers	4	Handling & packing
Quality Supervisor	1	Quality control
Sales Executive	1	Marketing
Accountant	1	Finance

Annual Manpower Cost

Category	Amount (₹)
Salaries	18,00,000
Wages	8,00,000
Total	**26,00,000**

10. UTILITIES REQUIREMENT

Utility	Requirement
Electricity	25–30 KW
Water	4,000–5,000 L/day
Fuel	LPG / Electricity
Storage	Ambient + optional cold storage

11. STATUTORY & REGULATORY REQUIREMENTS

- FSSAI License
- GST Registration
- MSME / Udyam Registration
- Factory License
- Pollution Control Consent
- Trademark Registration

12. CAPITAL INVESTMENT

Fixed Capital Investment

Component	Amount (₹)
Land & Building	20,00,000
Machinery	38,00,000
Utilities	5,00,000
Office Setup	2,00,000
Pre-operative Expenses	5,00,000
Total	**70,00,000**

Working Capital Requirement

Component	Amount (₹)
Raw Material	8,00,000
Packaging	5,00,000
Salaries	6,00,000
Marketing	4,00,000

Component	Amount (₹)
Miscellaneous	2,00,000
Total	**25,00,000**

Total Project Cost: ₹95,00,000

13. REVENUE MODEL & PROFITABILITY

Annual Production & Revenue

Product	Quantity	Rate	Value
Juice	1,50,000 L	₹60	90,00,000
Squash	80,000 L	₹120	96,00,000
Nectar	70,000 L	₹70	49,00,000

Total Revenue: ₹2.35 Crore

Profitability Statement

Particular	Amount
Gross Revenue	2,35,00,000
Operating Cost	1,55,00,000
Net Profit	80,00,000
Profit Margin	34%

14. IMPLEMENTATION SCHEDULE

Month	Activity
1–2	Registration & approvals
3–4	Machinery procurement
5	Installation
6	Trial production
7	Commercial operations

15. SOCIAL & ECONOMIC IMPACT

- Employment for 10–12 people
- Income generation for 50+ farmers
- Reduction in post-harvest losses
- Promotion of agro-entrepreneurship
- Strengthening rural economy

16.Equipment & Processing Vendors (Uttarakhand / Nearby)

Vendor / Supplier	Address	Contact / Focus
Swastik kitchen solutions	Sainik Colony, Lane No. 1, near Mahindra Service Center, Daudwala, Mothrowala, Dehradun, Uttarakhand 248121, India	Kitchen equipment solutions and stainless steel fabrications that can be adapted for juice processing plant utilities.
Passion commercial kitchen equipments	Mehboob Colony, Brahmanwala, Dehradun, Uttarakhand 248171, India	Supplier of commercial kitchen machinery — can provide fruit processing and beverage equipment support.

Vendor / Supplier	Address	Contact / Focus
Asian Power Cyclopes	Rochipura Lane No. 5, Rajeev Juyal Rd, Majra, Dehradun, Uttarakhand 248171, India	Machinery parts manufacturing — can help with custom components for juice/squash processing lines.
Nawani Fruit Processing Industries	Mini Industrial Area Jaikandi, Kaleshwar, Uttarakhand 246444, India	Local fruit & vegetable processing unit — potential partner/vendor for local insights, equipment needs, or component sourcing.
Supper Power Pack Systems	Lansdowne, Uttarakhand, India	Packaging machinery manufacturer — provides packaging line equipment for beverages.
Maruti Machines Private Limited	Uttarakhand (local representative) / Contact: +91-98240-13702	Manufacturer & supplier of beverages & fruit juice processing plants including mixing, filling and packaging systems.
Krishna Food Processing Machines	SIDCUL Industrial Area, Rudrapur, Udham Singh Nagar, Uttarakhand	Supplier of juice extractors, pulpers, bottle fillers, and cold storage systems (from similar project profile sources).
Gupta Electronics	Dispensary Road, Dehradun, Uttarakhand 248001	Local vendor of electrical and some processing control equipment (juice parlour project reference).
R. C. Electronics	54, Dispensary Road, Back Side of Kothali, Dehradun-248001, Uttarakhand	Supplier of process controls and electrical components used in small beverage plants.
Dev Enterprise	Career House, G.M.S. Road, Behind Hotel Kamla Palace, Dehradun-248001, Uttarakhand	Supplier of small processing and retail equipment related to food/beverage processing.

17. CONCLUSION

The Malta Juice & Squash Processing Unit represents a technically feasible, financially viable, and socially impactful agro-industrial venture that aligns seamlessly with India's broader development objectives. By promoting value addition at the source, the project strengthens the *Make in India* initiative through localized manufacturing and reduction of dependence on imported or large-scale processed beverages. At the same time, it embodies the spirit of *Vocal for Local* by utilizing regionally grown Malta fruit, enhancing farmer incomes, and promoting indigenous produce in organized markets. The project fits squarely within the objectives of the *PMFME Scheme* by encouraging formalization of micro food processing enterprises, enabling access to credit and subsidies, and supporting branding and market linkage of rural enterprises. Moreover, it serves as a strong model for *rural entrepreneurship development* by creating direct and indirect employment, encouraging self-employment among youth and women, strengthening farmer–enterprise linkages, and reducing post-harvest losses. With assured raw material availability, steady market demand, scalable operations, and strong institutional support, the project offers sustainable returns and long-term economic viability. Owing to its replicable structure and high socio-economic impact, the Malta Juice & Squash Processing Unit is highly suitable for implementation by entrepreneurs, Farmer Producer Organizations (FPOs), Self-Help Groups (SHGs), and government-supported development initiatives.

Disclaimer

Only a few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not imply any recommendation.