

Pomegranate Juice & Aril Processing Line

Complete Turnkey Business Proposal

MACHINE
Genyond



Supplier reference: real compact fruit washing, extraction and processing line applicable to pomegranate juice preparation.

500 kg/h starter whole-fruit input	200-300 L/h indicative juice output	35-70 kW indicative connected load	8-12 entry operators
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Prepared for investment planning in Afghanistan and regional export markets. Final specifications, pricing, civil works, and utility loads require supplier quotation and site survey.

Executive Summary

This line separates pomegranate arils and produces pasteurized juice while limiting bitter peel and membrane extraction. Afghan pomegranates have strong fresh-market identity, so processing should use sound lower cosmetic grades and harvest surpluses rather than damaged or moldy fruit. The aril and juice routes share washing and opening equipment but require separate hygiene, chilling and packaging decisions.

Why this project fits Afghanistan

- Afghan pomegranates can supply premium juice from sound fruit outside top fresh grades.
- Mechanical aril separation improves recovery while limiting peel bitterness when correctly adjusted.
- Pasteurized juice serves retail, hospitality and beverage-blending markets.
- Chilled arils can earn more but require rigorous hygiene, rapid cooling and continuous cold chain.

Sanaatchi delivery scope

- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning
- International logistics, customs documentation, operator training, spare parts, and after-sales support

Recommended configuration

For the lowest credible entry, select a 500 kg/h pomegranate line with washer and sorter, breaker-peeler, aril separator, inspection table, low-tannin press or juicer, tanks, pasteurizer and semi-automatic filler. Launch pasteurized juice first; add chilled retail arils only after cold-chain and shelf-life validation.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Pasteurized pomegranate juice	Buyer-approved Brix, acidity, color, tannin, flavor and microbiology	Retail, hospitality and beverage buyers
Chilled pomegranate arils	Intact clean arils under validated cold-chain shelf life	Premium retail and food service
Peel and seed fractions	Separated promptly and traceably	Approved extraction, compost or research users

Supplier references range from compact aril extractors to automated one-tonne-per-hour aseptic lines. The entry plant avoids concentrate evaporation and aseptic drum filling. Press type and separator adjustment must be accepted with local fruit because broken peel and membrane raise bitterness and tannin. Finished output must be calculated from trial aril and juice yields.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Pomegranate washer and sorter	Cleans fruit and removes rot or cracked spoilage	500 kg/h gentle food-grade handling
2	Fruit breaker and peeler	Opens rind without excessive seed crushing	Adjustable for local fruit diameter
3	Aril separator	Separates arils from peel and membrane	Low breakage and easy sanitation
4	Aril inspection conveyor	Removes membrane, peel and defective arils	Food-grade rotating product bed
5	Low-tannin press or screw juicer	Extracts juice while limiting bitter peel compounds	Trial-confirmed yield and screen size
6	Balance tanks and filter	Controls pulp and prepares juice for heating	Cloudy or clarified route by buyer
7	Tubular pasteurizer	Applies validated time-temperature treatment	Automatic recorder and diversion
8	Semi-automatic filler and capper	Fills hot or validated cooled juice packs	Two launch pack sizes

Equipment models are indicative and will be matched to the selected capacity, local raw-material tests, available utilities, and preferred automation level.

Reference Equipment Gallery

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Supplier reference: real compact fruit washing, extraction and processing line applicable to pomegranate juice preparation.



Supplier reference: real industrial fruit extraction equipment representing the pressing stage after pomegranate aril separation.

Images are supplier references for configuration discussion; final equipment appearance and model may differ.

Plant, Raw Materials & Utility Requirements

Raw materials

- Sound mature Afghan pomegranates
- Potable process water
- Only approved antioxidant or recipe ingredients
- Heat-compatible bottles and closures
- Optional chilled aril trays with validated barrier film
- Labels, coding ink and cartons

Utilities & infrastructure

- Stable three-phase electricity
- Food-safe steam, electric or hot-water heat source
- Potable water and hygienic drainage
- Cooling water for juice and packs
- Cold room for any fresh-aril product
- Washable processing and packing rooms

Quality, safety and environmental controls

- Reject moldy, fermented or pesticide-noncompliant fruit
- Record variety, maturity, Brix, acidity and lot yield
- Control peel and membrane carryover to limit bitterness and tannin
- Verify aril integrity, juice screen, color, Brix, pH and acidity
- Validate pasteurization, closure, cooling and microbiology
- Maintain rapid chilling and cold-chain records for any fresh arils

A final factory layout must reserve safe forklift routes, maintenance clearances, raw-material segregation, finished-goods storage, fire protection, ventilation, and future expansion space.

Indicative Investment & Implementation Plan

LOW-ENTRY CONFIGURATION

Lowest entry produces pasteurized juice with one compact aril-separation and pressing stream plus semi-automatic filling. Concentration, aseptic bulk filling, optical aril sorting, cold room, building, fruit inventory and working capital are excluded.

Component	Indicative range	Notes
Washing, sorting, breaking and aril separation	US\$12k-28k	One 500 kg/h fruit stream
Inspection and gentle juice extraction	US\$8k-18k	Low peel-contact arrangement
Tanks, filtration and pasteurization	US\$8k-18k	No concentrate evaporator
Semi-automatic filling and cooling	US\$6k-14k	Two pack sizes
Freight, installation and initial spares	US\$6k-14k	Include sanitary hoses and screens
Indicative low-entry total	US\$40k-92k	Cold room, aseptic filling, building, fruit and working capital excluded

Implementation sequence

Phase 1	2-3 weeks	Confirm fruit varieties, juice/aril products and pack
Phase 2	3-5 weeks	Run separator and press trials on local fruit
Phase 3	6-10 weeks	Manufacture, inspect and ship equipment
Phase 4	3-6 weeks	Install, train and validate heat process and cold chain

Ranges are planning targets for a low-cost entry configuration, exclude land, and remain subject to confirmed capacity, supplier quotation, freight, duties, exchange rates and site conditions.

Next Steps & Contact Information

Recommended next steps

- Confirm target products, hourly output, and packaging formats
- Test representative raw materials and document quality requirements
- Complete site survey covering electricity, water, fuel, drainage, roads, and warehouse space
- Request comparable technical and commercial quotations from shortlisted suppliers
- Finalize financing, logistics, installation, training, and spare-parts plan

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Research and image references

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