

Tomato paste plant in Algeria $\frac{1}{2}$ double concentrate production and local packing

Target application: tomato paste plant algeria

Reference configuration: 60 t/h fresh tomato at the reception (10 $\frac{1}{2}$ 200 t/h configurable)

Algeria has both a real growing basin $\frac{1}{2}$ Skikda, Guelma, Annaba, El Tarf $\frac{1}{2}$ and a strong domestic demand for double concentrate. Projects therefore usually combine a campaign plant sized on contracted local tonnage with a packing section that runs the rest of the year on stored aseptic bulk. Cheap natural gas changes the evaporation economics: multi-effect with gas-fired steam is often more competitive than MVR, which is the opposite of most European projects.

SCOPE OF SUPPLY

- Reception, washing, destoning and optical sorting for locally contracted tomato
- Hot break with enzyme inactivation, turbo-extraction and refining
- Multi-effect evaporation to 28 $\frac{1}{2}$ 30 $\frac{1}{2}$ Brix and double concentrate 36 $\frac{1}{2}$ 38 $\frac{1}{2}$ Brix
- Aseptic filling in 220 L bag-in-drum and 1 000 L IBC for year-round storage
- Packing section: standardization, pasteurization, can seaming and sachet filling
- Gas-fired steam generation, cooling towers and water recovery loops
- Electrical design 400 V / 50 Hz, Arabic and French documentation and labelling
- Installation, commissioning and operator training on site, with spare-parts planning

TYPICAL OUTPUTS

Double concentrate 36 $\frac{1}{2}$ 38 $\frac{1}{2}$ Brix $\frac{1}{2}$ Industrial paste 28 $\frac{1}{2}$ 30 $\frac{1}{2}$ Brix $\frac{1}{2}$ Cans 400 g $\frac{1}{2}$ 4.5 kg and sachets 50 $\frac{1}{2}$ 200 g $\frac{1}{2}$ bulk for out-of-campaign packing

DIMENSIONS AND BUILDING ENVELOPE

Process building footprint	2,200 $\frac{1}{2}$ 3,200 m $\frac{1}{2}$ for 60 t/h (1,200 $\frac{1}{2}$ 1,800 m $\frac{1}{2}$ at 30 t/h, 4,000 $\frac{1}{2}$ 5,500 m $\frac{1}{2}$ at 120 t/h)
Clear height	9 $\frac{1}{2}$ 12 m under beam in the evaporation bay, 6 $\frac{1}{2}$ 7 m in reception and filling
Reception yard	1,500 $\frac{1}{2}$ 3,000 m $\frac{1}{2}$ paved area for truck queuing, weighbridge and water dumping channels
Evaporator height	12 $\frac{1}{2}$ 18 m overall for double / triple effect calandria, outdoor or enclosed tower
Aseptic filling room	120 $\frac{1}{2}$ 200 m $\frac{1}{2}$, controlled area, 4.5 m clear height
Bulk storage	600 $\frac{1}{2}$ 1,200 m $\frac{1}{2}$ covered area per 10,000 t of 30 $\frac{1}{2}$ Brix paste in drums or IBCs
Heaviest single lift	18 $\frac{1}{2}$ 26 t (evaporator body) $\frac{1}{2}$ crane access to be verified at layout stage

LAYOUT $\frac{1}{2}$ FUNCTIONAL ZONES IN FLOW ORDER

1 $\frac{1}{2}$ Reception	Weighbridge, water dumping, roller and brush washing, destoner, elevators
2 $\frac{1}{2}$ Sorting	Optical and manual sorting platform, reject collection, waste conveying
3 $\frac{1}{2}$ Break section	Chopper, hot break 85 $\frac{1}{2}$ 95 $\frac{1}{2}$ C or cold break 65 $\frac{1}{2}$ 75 $\frac{1}{2}$ C, pulper / refiner / finisher
4 $\frac{1}{2}$ Evaporation	Multi-effect falling-film or forced-circulation train, vacuum unit, condensers
5 $\frac{1}{2}$ Sterilization	Tubular or scraped-surface steriliser with hold cell and aseptic buffer tank
6 $\frac{1}{2}$ Aseptic filling	Bag-in-box 3 $\frac{1}{2}$ 20 L, 220 L bag-in-drum, 1,000 L IBC, sterile air and steam barriers

7 $\frac{1}{2}$ Utilities & CIP	Steam distribution, cooling towers, chilled water, compressed air, CIP/SIP skid
---	---

8 $\frac{1}{2}$ Warehouse	Bulk storage, packaging materials, laboratory and QC office
---	---

UTILITIES AND CONSUMPTION

Installed power	1,600 $\frac{1}{2}$ 2,400 kW at 60 t/h (900 $\frac{1}{2}$ 1,300 kW at 30 t/h)
Steam	12 $\frac{1}{2}$ 20 t/h saturated at 8 $\frac{1}{2}$ 12 bar, MVR option reduces demand by 45 $\frac{1}{2}$ 60%
Cooling water	900 $\frac{1}{2}$ 1,600 m $\frac{3}{2}$ /h circulating, cooling towers sized on site design ambient
Process water	60 $\frac{1}{2}$ 120 m $\frac{3}{2}$ /h treated, with washing water recovery loops
Compressed air	700 $\frac{1}{2}$ 1,200 Nm $\frac{3}{2}$ /h at 7 bar, oil-free for the aseptic zone
Effluent	40 $\frac{1}{2}$ 90 m $\frac{3}{2}$ /h to treatment, COD load dependent on washing recovery
Manning	18 $\frac{1}{2}$ 26 operators per shift including sorting, QC and maintenance

CAPEX, OUTPUT AND PAYBACK

Algerian project $\frac{1}{2}$ investment profile

Campaign plant sized on contracted local tonnage, with a packing section running out of campaign on stored aseptic bulk.

30 t/h fresh tomato	Turnkey CAPEX: $\frac{1}{2}$ 4.5 $\frac{1}{2}$ 6.5 million Annual output: 9 000 $\frac{1}{2}$ 12 000 t/year of 30 $\frac{1}{2}$ Brix paste EBITDA: 18 $\frac{1}{2}$ 24% of revenue Payback: 4.5 $\frac{1}{2}$ 6 years Commissioning: 12 $\frac{1}{2}$ 15 months contract-to-commissioning
60 t/h fresh tomato (reference)	Turnkey CAPEX: $\frac{1}{2}$ 8 $\frac{1}{2}$ 11 million Annual output: 19 000 $\frac{1}{2}$ 24 000 t/year of 30 $\frac{1}{2}$ Brix paste EBITDA: 20 $\frac{1}{2}$ 26% of revenue Payback: 4 $\frac{1}{2}$ 5.5 years Commissioning: 14 $\frac{1}{2}$ 18 months contract-to-commissioning
120 t/h fresh tomato	Turnkey CAPEX: $\frac{1}{2}$ 14 $\frac{1}{2}$ 19 million Annual output: 38 000 $\frac{1}{2}$ 48 000 t/year of 30 $\frac{1}{2}$ Brix paste EBITDA: 22 $\frac{1}{2}$ 28% of revenue Payback: 3.5 $\frac{1}{2}$ 5 years Commissioning: 16 $\frac{1}{2}$ 20 months contract-to-commissioning

Assumptions behind the figures

- Campaign of 90 $\frac{1}{2}$ 110 days per year, 20 $\frac{1}{2}$ 22 productive hours per day.
- Hot break line, evaporation to 28 $\frac{1}{2}$ 30 $\frac{1}{2}$ Brix, aseptic filling in 220 L bag-in-drum or 1 000 L IBC.
- Yield 5.5 $\frac{1}{2}$ 6.5 t of fresh tomato per tonne of 30 $\frac{1}{2}$ Brix paste, depending on inbound $\frac{1}{2}$ Brix.
- CAPEX is turnkey scope: process equipment, automation, installation, commissioning and training; civil works and land excluded.
- EBITDA and payback assume export bulk paste pricing and no financing cost inside the operating margin.
- Algerian project: 400 V / 50 Hz, gas-fired steam generation, multi-effect evaporation to 28 $\frac{1}{2}$ 30 and 36 $\frac{1}{2}$ 38 $\frac{1}{2}$ Brix, French and Arabic documentation.
- The retail packing section (cans and sachets) is quoted separately from the campaign plant CAPEX range.

Indicative engineering ranges used by MCF Technology for budget screening. Final CAPEX, EBITDA and payback are fixed only in the feasibility study, once inbound $\frac{1}{2}$ Brix, campaign length, utilities cost and target packaging are confirmed.

INSTALLATION, SITE CONDITIONS AND SCOPE BOUNDARIES

- Scope of supply: process equipment, automation, mechanical and electrical erection, commissioning, FAT/SAT, HACCP validation and operator training.
- Excluded from the ranges: land, civil works, building steelwork, external utility generation and import duties.
- Installation, commissioning and after-sales service are delivered worldwide by MCF crews, with remote diagnostics on the SCADA.

- Algeria: 400 V / 50 Hz, gas-fired steam generation favouring multi-effect evaporation, double concentrate at 28°Brix and 36°Brix, French and Arabic documentation.

TECHNICAL FAQ

Why multi-effect rather than MVR in Algeria?

Because subsidised natural gas usually makes steam cheaper than electricity: a triple or quadruple-effect evaporator with vapour recovery beats MVR on operating cost. The comparison is recalculated with the actual tariffs in the feasibility study.

Can the plant run all year?

The evaporation section runs only during the 60-110 day campaign; the packing section runs the rest of the year on aseptic bulk stored in drums or IBCs, which is what stabilises annual EBITDA.

What Brix does the Algerian market expect?

Double concentrate at 28°Brix for retail cans and 36°Brix for industrial and export bulk; standardized paste at 22°Brix for sachets.

Which documentation and languages?

Technical documentation, HMI and operator training in French and Arabic, with CE-marked machines, EHEDG hygienic design and AISI 304L/316L food-contact surfaces.

Indicative CAPEX?

4.5-6.5 million for 30 t/h and 8-12 million for 60 t/h fresh tomato including evaporation and aseptic filling; the packing section is quoted separately. Turnkey process scope, civil works excluded.

NEXT STEPS

- Full technical page: <https://mcftechnology.group/en/tomato-paste-plant-algeria>
- Configure the line and request the feasibility study: <https://mcftechnology.group/en/configurator>
- Run the ROI simulator: <https://mcftechnology.group/en/roi-simulator>
- Build the bankable financial plan (3-10 years): <https://mcftechnology.group/en/financial-plan>
- Request a quotation: <https://mcftechnology.group/en/contact>

DISCLAIMER

All figures in this datasheet are indicative engineering ranges used by MCF Technology for budget screening and layout discussion of the reference configuration. They are not a quotation, not a performance guarantee and not the audited result of a specific plant. Final specification, dimensions, utilities and CAPEX are fixed in the feasibility study on your product, packaging formats, utilities cost and site conditions.