
ASLAN CO LTD - TURKEY



MULTIFRUIT PROCESSING PLANT

PROPOSAL 21202P- A

June 8th, 2021

YOUR ITALIAN PARTNER SINCE
1936

Azizel Food Processing S.r.l.

Cap. Soc. 160.000 € i.v. – P.I./C.F. 04898430964

a company of
 **ALIMENTA**

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COMPANY PROFILE



Azizel Food Processing (**Azizel**) was founded in 1936. The core activity of **Azizel** has always been focused on developing innovative technologies for fruit and vegetable processing and dairy. In particular, **Azizel** designs, manufactures, and supplies plants and machines to transform any type of fruit into juices (clear, cloudy, pulpy), concentrates, nectars, baby food, jams, ready-made drinks, and in general any fruit/ vegetable base products including ketchup, tomato paste, sauces, yoghurt, basis for yoghurt, milk condensate UHT, etc.

Unique and innovative technologies and dedicated extraction machines have been developed by **Azizel** to process tropical fruits (pineapple, mango, guava, passion fruit), pomegranate, citrus fruits (orange, lemon, grapefruit) and vegetables (tomato and carrot).

Azizel has also developed extensive experience in supplying multifruit processing plants designed to maximize yield and quality of each product, so allowing their operation all over the year avoiding seasonal stopover.

Azizel's plants meet the most stringent food standard specifications and have a high degree of automation that substantially reduces operating costs.



Azizel has supplied more than 1000 plants in over 100 countries.

INTRODUCTION

The following proposal is based on the more than 80 years of Azizel activities in the design and supply of fruit and vegetable processing plants.

Furthermore, Azizel has since the beginning developed dedicated processes for tropical fruits optimizing the equipments used for the puree/juice extraction, thermal treatment and refining, evaporation and aseptic filling in order to maximize yields and produce high quality juices preserving the organoleptic properties (colour, taste, aroma, etc.) of the fruits.

In particular, Azizel has designed dedicated machines for the processing of single fruits such as Citroevolution3 for orange, Pinetronic for pineapple, Super Passypress for passion fruit.

Azizel has supplied a very large number of plants dedicated to multi tropical fruits and avocado processing in more than 100 different countries. Some recent references are listed below:

MULTIFRUIT

Organic Growers & Packers Ltd (Malindi-Kenya)

Complete plant for processing mango (5 t/h) and banana (5 t/h) for production of natural and concentrated puree packing in aseptic bags

Somaliland Beverage Industries (Somalia)

Complete plant for processing mango (2,5 t/h) and guava (1,5 t/h) for production of natural puree packing in aseptic bags (Coca-Cola licenser)

Cairo 3A for Agricultural and Animal Production (Egypt)

Complete plant for processing pomegranate (15 t/h) for production of clear concentrated juice packing in aseptic bags and additional machines for processing of mango, apricots and peaches (5T/h) for the production of natural puree

Kirene (Senegal)

Complete plant for processing mango (5 t/h) for production of natural puree packing in aseptic bags (Coca-Cola licenser)

Allfruit EPZ Limited (Kenya)

Complete plant for processing passion fruit (7 t/h) & mango (5 t/h) for production of juice and puree packing in aseptic bags

Del Monte (Dubai)

Complete multifruit processing plant, including orange, mango and pineapple, for the production of high quality chilled juices packed in PET.

Kingdom Fruit (Ghana)

Complete plant for the processing of mango, pineapple and orange and preparation of final juice drinks, capacity 1,5 to 2 t/h input.

Olympic Fruit Processor (Kenya)

Plant for the production of passion fruit and mango concentrates. Capacity 1200 kg/h

Smeda (Pakistan)

Complete plant for the production of single strength mango and guava puree packed in aseptic bags, capacity 10 t/h input.

Freshtrop (India)

Complete plant for the production of single strength mango & guava puree and pomegranate concentrate, packed in aseptic, up to 10 t/h input.

Iftekhar Ahmed & Co. (Pakistan)

Complete plant for processing citrus (10 t/h), mango (10 t/h) and guava (5 t/h) for production of puree packing in aseptic bags

K.H.D.P. (India)

Multifruit processing plant for the production of concentrates, juices and candied fruits (pineapple 3,5 t/h, mango 2,5 t/h)

Niyya Food & Drinks Co. (Nigeria)

Complete plant for the processing of pineapple and mango preparation of final juice drinks filled in bottles, capacity 3 T/h input.

Stay Sweet Co. (Ghana)

Complete plant for the processing of mango, pineapple and oranges and preparation of final juice drinks, capacity 2 T/h input.

2K Farms Co. (Ghana)

Complete plant for the production of mango puree and pineapple juice packed in aseptic bags, capacity 1,5 T/h input.

Hay Indus Co. (Ghana)

Complete plant for the processing of pineapple and mango preparation of final juice drinks packed in pouches, capacity 1 T/h input.

Tropical Fruit Processors (Mombasa, Kenya)

Turn key complete plant for processing citrus fruits, pineapple, mango, passion fruit, tomato, banana. Completed of concentration, filling and freezing store. Capacity 5 T/h

Bakhresa Group (Dar Es Salaam, Tanzania)

Multifruit processing plant (mango, passion fruit, orange, pineapple) 2,5 T/h

Tropical Fruit Processors (Mombasa, Kenya)

Turn key complete plant for processing citrus fruits, pineapple, mango, passion fruit, tomato, banana. Completed of concentration, filling and freezing store. Capacity 5 T/h

AVOCADO

Avocadoil (Israel)

Refiner for avocado pulps

Crofts (Kenya)

Super avocado destoner

Alfa Laval (New Zealand)

Super avocado destoner

Westfalia Separator (Chile)

N°2 Super Avocado Destoner

Pieralisi Maip (Italy for Mexico)

Super Avocado Destoner

Pieralisi Maip (Italy for Kenya)

Jumbo Avocado Destoner

Gea Iberica (Spain)

Complete line for avocado destoning and refining. Capacity 2,5 t/h

Zenat International Group (Spain)

Super avocado destoner

Plan Fresh - Kenya

Super avocado destoner

Avopacific (California – USA)

Jumbo Avocado Destoner

Avopacific (Mexico)

N°2 Jumbo Avocado Destoner

PROCESS DESCRIPTION

The presented photos are indicative and machines may differ from actual size and execution

The plant here below described is designed to process alternatively:

- 1.500 kg/h of mango for the production of natural puree
- 1.500 kg/h of avocado for the production of natural puree
- 1.500 kg/h of papaya the production of acidified puree
- 2.000 kg/h of banana for the production of acidified puree.

The extracted purees will be sterilized and filled in 200 l aseptic bags.

FRESH FRUITS TREATMENT AND PUREE EXTRACTION LINE

Fresh fruits, with the exclusion of papaya and banana, are fed to Azizel washer Inoxall. The unit has been designed for washing by immersion. Two subsequent washing processes are performed in the washer.



Washer Inoxall

The first washing is by immersion in order to soften and remove the dust from the surface of the fruits. Mud is collected in the bottom part of the basin. Water is continuously fed by a jet system, causing a rubbing of the fruits against each other, thus removing the dust and

to push them towards the discharge belt conveyor. The washer includes a belt conveyor on the bottom of the basin to route the sinking fruits to the elevator. Excess water is discharged through an overflow pipe. The basin is complete with a large bottom tap for cleaning and emptying operations.

The fruits are discharged by a plastic bucket elevator having two functions: shower washing (2nd washing) by a suitable device mounted on the first part of the elevator and water dripping in the second part of the elevator.

The same elevator feeds the fruits to the sorting line model Selinox.



Sorting line Selinox, roller type

This unit consists of a roller belt conveyor that, slowly rotating, allows to inspect carefully the fruits as to eliminate the rotten or unsuitable ones that cannot support the subsequent industrial process.

By means of an elevator, mango and avocado are fed to the Super Mango/Avocado Destoner for the removal of stones and peels by a suitable sieve. The machine is supplied with an additional kit for the destoning also of avocado.



Super Mango/Avocado Destoner



Mango/Avocado Destoner

The design of the destoner grants the best quality and the highest puree yields thanks to its construction characteristics suitable to handle fruits having hard peel and strong pulp adherence to the stone.



Internal view of the Mango Destoner

Main features of our Mango/Avocado Destoner:

- high reliability
- high efficiency in pulp recovery
- high efficiency in peel separation
- fine tuning of beaters that allows soft operation



Mango stones from mango destoner

In order to reduce the oxidation of avocado pulps, an acidifying solution, prepared in a dedicated dosing group, is added.



Dosing group

PAPAYA, BANANA

Papaya and banana are prepared on working tables by the operators: banana is peeled and papaya is peeled and spooned.



Working tables

Extracted pulps are collected on a belt conveyor and fed to the mash pump.

During the mashing also a solution of citric and ascorbic acid is added to reduce the oxidation of the products. The solution is prepared in dedicated dosing group.

During the treatment of banana, an injection of nitrogen is effected to reduce oxidation of the product (nitrogen generator is excluded from our supply).

Mango pulps fall by gravity in the extraction pump and fed to the thermal treatment section composed by the scrape surface pre-heater suitable to increase the temperature to approx. 75°C max in order to deactivate the enzymes and, by consequence to reduce oxidation. Also mashed banana and papaya are fed to the same heat exchanger while avocado pulps is not heated.



Scraped surface heat exchanger

All heated and avocado pulps are fed to the Supercreamer, single stage pulper with interchangeable screens, for refining operations.



Pulper/refiner Supercreamer

The Supercreamer is used to refine the product in order to remove all inedible parts such as stems, seeds, eventual foreign bodies, etc. Thanks to its design it assures a small amount of air incorporated into puree.

The machine includes a perforated screen in order to change the refining degree: usually for fruit puree a screen with 0,5 mm holes is used but other sieves are available on request.



Mango/Avocado Destoner and pulper/refiner Creamer

PUREE TREATMENT AND ASEPTIC LINE

Due to the low value of pH, banana and papaya have to be acidified in order to reduce the pH below 4,5. The low-acid nature of these products makes it more susceptible to spoilage and pathogenic organisms, which can be countered by acidification. For this purpose, the puree is sent to a buffer tank where it is acidified: the solution of acid citric is prepared in a dedicated group and it is added to modify the pH of the puree. By a pump, the product is recycled on the same tank in order to increase the mixing of the ingredients. When the puree reaches the due value of pH, a dedicated pump transfers the product to a buffer tank. The acidification group is mainly composed by n°2 mixing tanks and n°3 monoscrew pump to allow the recycle/transfer of the product. The group is also equipped with an electronic pH-meter to control the pH value.



Dosing group

One tank with pump of the acidification group is also used for the buffering of other fruit purees. When used for avocado puree, this tank is kept under nitrogen blanket to reduce at minimum the potential oxidation of the avocado puree.

Extracted purees are fed to the tubular sterilizer STTC/H-DEA equipped with deaerator used for the reduction of air incorporated in liquid or thick alimentary products, by nebulization under vacuum in order to reduce the oxidation.



Tube in tube sterilizer



Tube in tube sterilizer



Deaerator with aroma recovery

The model is complete with integrated aromatic condensates recovery: the aromatic steams are condensed and newly incorporated directly in the product.

Banana puree has to be also homogenized before the sterilization.



Dispersor homogenizer

A model at 250 bar is used.

Our STTC sterilizers are composed by tube in tube heat exchangers with 4 concentric pipes. The machine is skid-mounted in order to simplify the installation at site.



Tube in tube sterilizer

The sterilized products are fed to one head aseptic bag-in-drum filler Simplex complete with expansion vessel, an universal machine designed to fill a wide range of bags. The bag-in-drum proposed is suitable for feeding 200/220 l drums. The design of the filler grants a reduced change over time and a minimum maintenance.



Aseptic head



Aseptic filler Simplex (indicative picture)

ELECTRIC BOARD WITH PLC

The processing line is supplied with a dedicated Electric and Control board with PLC. The line's operations are controlled by means of a suitable panel with PC/PLC system for the automatic control of the main line.

A touch screen panel 12" allows the management of the line via video graphic screens: the main operating functions of the plant such as motors and the electro valves status, important process variable as temperature, pressure, flow, levels, etc, PID process regulator status, alarms ON, and signalization of activated interlocks are controlled by the operator via touch screen.



Electric board

CLEANING OF THE PLANT

Centrifugal pumps are included for the creation of a closed CIP circuit, where necessary, for the cleaning.



Centrifugal pump

WASTE ELIMINATION SYSTEM

The plant is completed by a set of screw conveyors for the carrying of the waste out of the factory.

PRICE LIST

ITEM	DESCRIPTION	M.U.	Q.TY	EURO
A	FRESH FRUITS TREATMENT AND PUREE EXTRACTION LINE			
1	WASHER INOXALL	PC	1	
2	SORTING LINE ROLLER TYPE	PC	1	
3	ELEVATOR	PC	1	
4	SUPER MANGO/AVOCADO DESTONER	PC	1	
5	KIT FOR AVOCADO TREATMENT	PC	1	
6	MONOSCREW PUMP	PC	1	
7	DOSING GROUP	PC	1	
8	WORKING TABLE	PCS	6	
9	BELT CONVEYOR	PC	1	
10	MUSH PUMP	PC	1	
11	DOSING GROUP	PC	1	
12	TANK 500	PC	1	
13	MONOSCREW PUMP	PC	1	
14	PRE - HEATER SCRAPE SURFACE SSR1000	PC	1	
15	PULPER/REFINER SUPER CREAMER	PC	1	
16	MONOSCREW PUMP	PC	1	
17	ACCESSORIES INCLUDING N2 DEVICE FOR BANANA AND AVOCADO	SET	1	
	Total price of the Line A:			297.700
B	PUREE TREATMENT AND ASEPTIC LINE			
1	ACIDIFICATION GROUP FOR BANANA AND PAPAYA PUREE	SET	1	
2	TUBULAR STERILIZER STTC/H DEA 1000 WITH HOMOGENIZER	PC	1	
3	1-HEAD ASEPTIC FILLER SIMPLEX WITH EXPANSION VESSEL	PC	1	
4	ACCESSORIES	SET	1	
	Total price of the Line B:			568.600
W	CONTROL BOARD WITH PLC			
1	CONTROL BOARD WITH PLC	PC	1	
	Total price of the Line W:			64.500
T	CLEANING OF THE PLANT			
1	CIP PUMP RETURN	PCS	3	

2	SODA DOSING PUMP	PC	1	
	Total price of the Line T:			16.800
Z	WASTE ELIMINATION SYSTEM			
1	SCREW CONVEYOR	SET	1	
	Total price of the Line Z:			24.600
TOTAL EX-WORKS PRICE, PACKING EXCLUDED				972.200
PACKING FOR SHIPMENT				16.700
TOTAL EX-WORKS PRICE, PACKING INCLUDED				988.900
Recommended spare parts for one year		SET	1	20.300
Technical assistance to supervise plant erection and commissioning and to train the customer personnel		MAN-DAYS	60	54.000

EXCLUSIONS

Our supply does not include the following items:

- Item marked as *local supply* to be purchased locally under Azizel specification
- Civil and erection works
- All electrical (i.e.: from the master switchboard to each control board; from each control board to each motor) and mechanical connections (water, steam connections, compressed air ...).
- All utilities, energy and raw materials necessary for the plant commissioning, start-up and operation.
- Transport/lifting equipment necessary for the assembling.
- Manpower required for the plant erection, commissioning and start-up.
- Value added tax, import duties, local taxes of any kind.
- Everything not clearly expressed as included in this proposal.

COMMERCIAL TERMS

Delivery terms

Goods shall be delivered Ex-Works Busto Arsizio (Varese – Italy).

Packing

Packing of the goods shall be made in containers or wooden crates/cases suitable to protect the goods during sea transportation and long storage and marked with the required information such as port of shipment, port of destination, client's name, gross and net weight, package/case number, etc.

Delivery time

The goods shall be ready for shipment within 4/5 months (August and December excluded) from the date of the receiving of down payment. Any delay in receiving the payment in the form and substance acceptable by Azizel may involve the postponement of the delivery date.

Terms of Payment

The total price shall be paid as follows:

30% as not refundable down payment at the order confirmation.

70% by irrevocable, divisible Letter of Credit, confirmed by a first class Italian bank acceptable to Azizel, confirmation cost at the Customer's charge, payable pro rata of each shipment of the Plant equipment, machinery, materials and spare parts against presentation to the bank of the following documents:

- Commercial invoice;
- Bill of Lading;
- Packing List;

The above Letter of Credit shall be opened and effective within 30 days from the date of down payment.

Spare parts

The present proposal includes the supply of the recommended spare parts for the plant first year operation. The list of the recommended spare parts will be provided upon completion of the plant design and engineering.

Supervision to plant erection, commissioning and start-up

The present proposal includes the technical assistance to be provided by Azizel to supervise the critical phases of the plant erection, commissioning, start-up and testing according to the program of the works to be agreed between the Customer and Azizel. During the plant commissioning and start-up Azizel will train the qualified personnel of

the Customer. All travelling, local transport, living and lodging at a European standard hotel or equivalent accommodation, shall be at Customer charge and care.

The additional technical assistance which may be required by the Customer shall be charged by Azizel to the Customer at the rate of 900 Euro man/day.

Guarantees

- *Guarantee on delivery*

Azizel guarantees that the delivery of the goods will be completed within the deadline specified above.

- *Guarantee on plant performance*

Azizel guarantees that during normal and steady operation and provided that the raw materials and utilities characteristics are in accordance with the Azizel specifications the Plant is capable of achieving the production capacities specified in the proposal. The fulfilment of the guarantees on the Plant Performance will be assessed during the test run that will be carried out under the Azizel's supervision according to the procedures to be agreed upon between the Customer and Azizel 90 days before commencement of the Test Run.

- *Mechanical guarantee*

The Plant's equipment, machinery and materials supplied by Azizel under the Contract is guaranteed against defects of design, workmanship or material for a period of 12 (twelve) months from the running test of the Plant or 15 months from the notice of goods ready for shipment issued by Azizel, whichever period expires first.

During the said period Azizel undertakes to repair or, at the Azizel option, to replace any defective or faulty part provided that such default or defect is not attributable by normal wear and tear or caused by mis-operation and /or improper or lack of maintenance.

Any fault or defect arising out during the Mechanical Guarantee period shall be immediately notified in writing by the Customer to Azizel, along with any useful information for the evaluation of the default by Azizel.

Azizel shall take the remedial actions in the shortest reasonable time, giving the relevant notice to the Customer.

The replaced/repared parts supplied free of charge by Azizel to the Customer will be delivered FOB Italian port.

Azizel shall not be held responsible nor liable toward the Customer for any consequential damage, loss of profit etc. deriving from any default of Azizel in performing any of its obligations. The liability of Azizel toward the Customer shall in no case exceed 10% of the total price.

Confidentiality

The Customer hereby undertakes to keep secret and confidential the present proposal and all and any information, data, specifications, drawings, manuals and documents related to the goods, whether in the verbal, written or digital form, whether of technical or commercial nature, as it will be provided by Azizel to the Customer in connection with the present

proposal (hereinafter named Confidential Information) and not to use or divulge any of such Confidential Information to other parties except for purposes strictly related to the evaluation and implementation of the project object of the present proposal.

The Customer hereby acknowledges that the Azizel remains the exclusive owner of the Confidential Information, which shall therefore be used by the Customer within the limitations herein set forth.

Without prejudice to the Azizel's ownership of the Confidential Information, the Customer's confidentiality obligations shall remain in force for ten (10) years from the date of the present proposal.

Engineering/manufacturing standards

The Azizel plants and equipment are designed and supplied by Azizel in accordance to the European Union standards, laws and regulations in force at the time of the supply.

All weight dimensions and measures shall be in the metric system.

Azizel shall have the right to modify at no cost for the Customer any part of the design and/or specifications of the plant, of the equipment and/or of materials if such modification is desirable to improve the plant/equipment operation or to up-grade its efficiency or to facilitate the expediting activities.

Proposal Validity

The present budget proposal is valid for 60 days from the date specified below.

Busto Arsizio, June 8th, 2021

Azizel Food Processing

Mehmet ASLAN

President