

Market Opportunities

Fruit and vegetable processing are among the most important agricultural activities for the development of rural businesses. Pre-packaged foods and beverages are among the largest and fastest growing markets in the North and in poor and fragile regions. Currently, there is no fruit and vegetables processing taking place in many developing and fragile contexts. Therefore, multiple opportunities exist at all stages of the value chain for small and medium-sized farmers like drying, pressing, pasteurization, filtration, filling and packaging.

Current Problems

Despite this huge demand for processed and packaged fruits and vegetables, there is barely a food and beverages industry in poor and fragile countries satisfying the demand. One of the reasons is that fruits and vegetables are produced and harvested within a few months and that the crops are often highly perishable. Large amounts of harvest in such a short time pose problems for optimal (cooled) storage and protective transportation and produces lots of avoidable waste. Additionally, the overflow of fresh fruits and vegetables on the market keeps prices very low and deprives small and medium-sized farmers of income. Another problem is that before harvesting, many farmers use chemicals, which are forbidden in a wide range of countries, thus posing health problems for the local population or complicating or even inhibiting exports to regional and international markets.

Local farmers can't take advantage of these opportunities as they lack appropriate and hygienic storage, processing, packaging and transportation opportunities. The main reasons for this are bottlenecks in their value-chains stemming from lack of know-how and agro-technical means of production.

NOMADES Solutions

To tackle these problems, NOMADES has designed processing plants comprised of extremely solid machinery for the processing, conditioning, and packaging of fruits and vegetables. Most of our projects focus mainly on local transformation of locally produced fruits and vegetables of any kind into natural products. The processing plants we propose can be adapted for different production capacities (100 kg up to 1000 kg raw materials per hour) and different fruits and vegetables. Therefore our solutions help extend the production over the harvest time frame and ensure year-round employment. This helps maximizing positive impacts for the weakest and poorest producers by giving them a guaranteed and fairly priced outcome to their production and employment opportunities on the plant site.

Additionally, implementing local processing units helps solving transportation and storage problems. The pasteurized and packaged products can be stored at least two years after processing what solves the problem of the perishable nature of fresh produce and offers solutions for malnutrition and health problems as well as extended marketing possibilities and higher value added. Another possibility for producers is to organize them in local associations jointly running one processing unit and making them more independent from market speculations.

Semi-Industrial Unit for Fruits and Vegetables Processing, Conditioning and Packaging

We have put together some reference production units that can process 100 kg or 500 kg of fruits and vegetables per hour into 100% natural, tasty, conservable pure fruit and vegetable juices, purees, jams, syrups, mashed potatoes, soup, vegetables, sauces, compote ,oils etc. without preservatives and chemicals. We assessed these scales as perfectly suited for on-farm processing that can be installed easily in small and medium-sized farms. The plants require approximately 50 to 150 square meters (not including supplies and product storage). The machines proposed here are particularly suited for continued 24/7 operation since they have very low energy consumption, simple maintenance and maximum operation comfort.

Processing Unit for Fruits and Vegetables 100 kg per hour

This processing unit has a capacity to process around 100 kg of fruits and vegetables per hour into 100% natural, tasty, conservable pure fruit and vegetable juices, purees, jams, syrups etc. This processing plant allows the employment of five to ten workers. The machines proposed here are particularly suited for continued 24/7 operation since they have very low energy consumption, simple maintenance and maximum operation comfort.



Washing and Cutting Equipment for hand-washing and cutting of fruits and vegetables.



Stainless steel equipment like trays, plates, knives, etc. for hand-washing and cutting of fruits and vegetables.

Juice Extractor for the constant extraction of fresh and natural fruit and vegetable juices.



Extremely stable and robust high performance commercial juicer, perfect for the professional daily use. The residue is automatically ejected through a tube into a container underneath the counter. The strong motor and the large feed chute allow large quantities to be processed.

Pasteurizer for conserving fruit and vegetable juices without chemical additives.



The pasteurizer consists of a stainless steel pressure tank. The electric heating coil and tubular heat exchanger through which the raw juice flows are built-in to the lid. The raw juice is led off via the storage tank clear juice discharge into the pasteurizer that is placed at a lower level.

Stand-up Pouches and Hand Sealers for fresh-cut produce packaging.



The packages are blended to provide moisture, oxygen, and aroma barrier properties also featuring excellent optics and high gloss for easy viewing of product type and quality.



Compact and easy-to-operate hand sealer for professional closing of heat-sealable materials like flexible stand-up pouches.

Processing Unit for Fruits and Vegetables 500 kg per hour

This processing unit has a capacity to process around 500 kg of fruits and vegetables per hour into 100% natural, tasty, conservable pure fruit and vegetable juices, purees, jams, syrups etc. This processing plant allows the employment of ten to twenty workers. The machines proposed here are particularly suited for continued 24/7 operation since they have very low energy consumption, simple maintenance and maximum operation comfort.

WASHING AND MILLING

Washing and Milling Plant for cleaning and optional milling of fruits and vegetables.



Proper washing is the mandatory first stage of any process. The mill prepares fruits or vegetables for pressing. The unit prepares a thick mash that can also be used for other purposes, such as jams or fruit pastes.

DE-STONING

De-Stoning and Passing Plant for de-stoning and straining fruit and berries.



De-stoning system with changeable screens and adjustable rotor. The raw material is fed to a filling hopper and dosed to the rubber rotor shaft. The processed mash flows through the mash collecting into the mash delivery connection. The separated stones are continuously conveyed in the rotary screen to the stone discharge chute at the back.

PRESSING

Press rotary cage model for pressing of the thick mash into high flavoured juice.



Pressing is the main step in the whole chain. The mass to be pressed is wrapped into a cloth which allows for a first filtering operation (second stage is done through decantation). The waste (skin, pulp, seeds, etc.) can be recycled as a clean and hygienic complement food for livestock.

PASTEURISING

Pasteurizer for long-term conservation of the juice without refrigeration.



Due to its high water content, juice is susceptible to micro-organisms and must be sterilized. The juice is pasteurized through very quick temperature raise and cools down without altering the nutritional and gustative qualities of fruit.

FILLING AND SEALING

Filling and sealing machine for packaging of liquid in film pouches.



Semi-automated filling and sealing machine for the packaging of liquid in flexible film pouches or Doypack® stand up pouches. The machine can easily be upgraded for the conditioning of viscous or paste products (oils, liquid eggs, jams, etc.)

Universal kitchen machines with kettle sizes up to 200 liters

Universal kitchen machines are available with kettle sizes from 5l to ca. 200l. The different models are manufactured for cutting, slicing, mixing, cooking, beating, stirring, kneading, straining etc. They are suited for processing fruit, jelly, mashed potatoes, soup, vegetables, sauces, compote, beetroot, cucumbers, cabbage, potatoes, crisps, celeriac, carrots, hard bread, muesli, cheese, bread/bread-crumbs, hazelnuts, almonds etc. The machines proposed here are particularly designed for continued 24/7 operation, low energy consumption, easy maintenance and highest operation comfort.

Planetary mixers



Stirring and beating machines



Processing plants for jams, jellies, marmalades with 250 liter cookers

The batch cooking plants are particularly suitable for small product batches. They are optimized for a minimal loss of product and short cleaning times. Cooking and cooling of the product takes place in one and the same process tank. This equipment is particularly suitable for smaller volumes and frequent recipe changes to assure the processing of jams, marmalades, compotes and jelly from a variety of local raw materials. The heating-up of the raw material under admixture of sugar, pectin and further additives with subsequent thickening under vacuum is carried out in one and the same processing vessel. The machines proposed here are particularly designed for continued 24/7 operation, low energy consumption, easy maintenance and highest operation comfort. The complete standard system is erected on a skid. This simplifies transport and speeds up installation as well as dismantling in case of relocation.

Single - stage cooking plant



Standard equipment:

- 250 litre cooker with manual fill-in cover
- Vapours condenser
- Vacuum pump
- Steam heating for agitator and jacket
- Relay control
- Sealing water system for axial face seal
- Fittings, valves and meas./control equipment

Standard batch cooking plant

