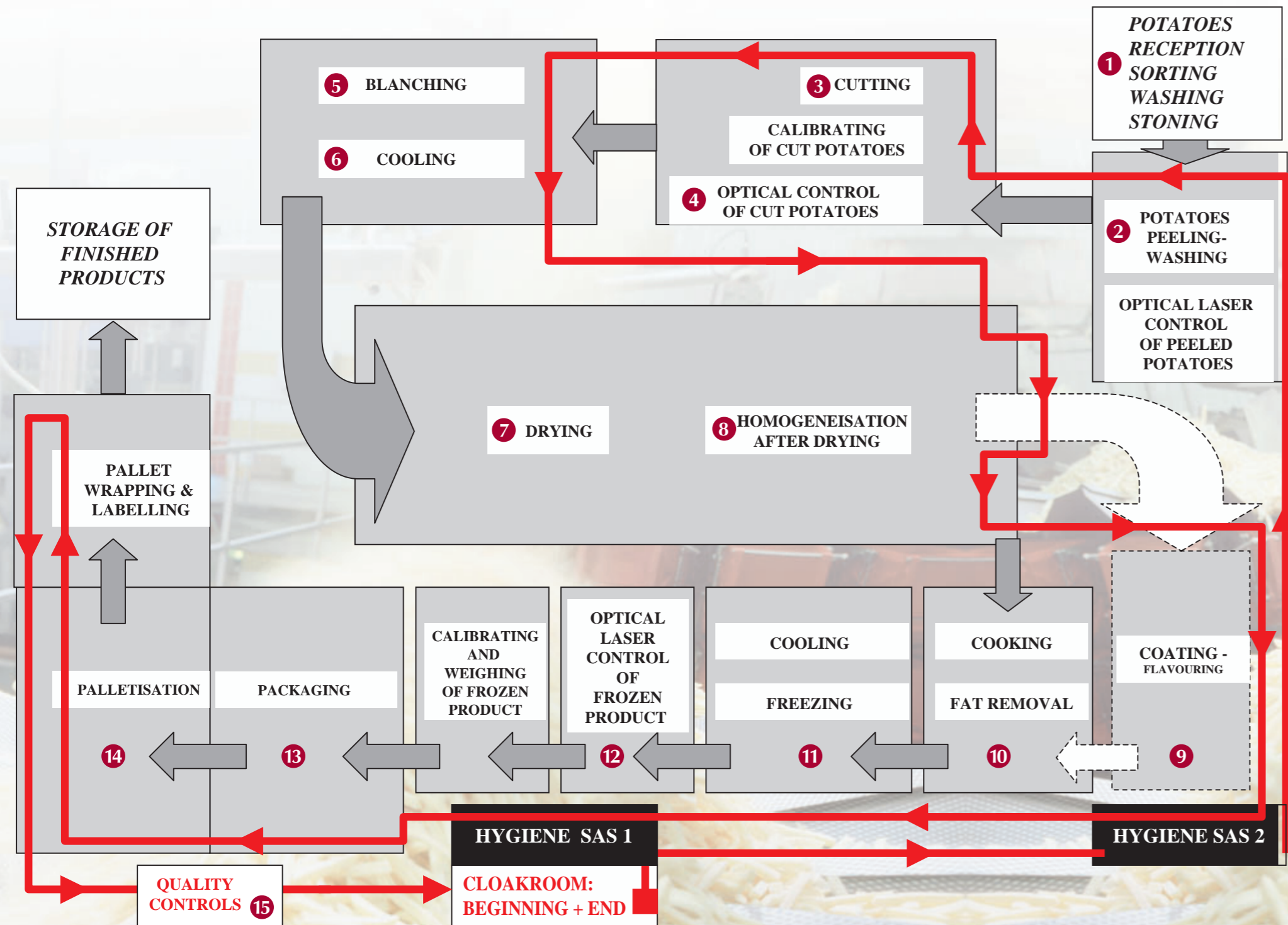


Potato processing at Lutosa: the different stages of your visit



Welcoming and identity control

Weighbridge: weighing of the lorries with raw materials or finished products at the entrance and exit of the site.

Potato store

Potatoes are stored in huge air-conditioned warehouses at a temperature of 8°C. Temperature and humidity levels are controlled entirely by computer. To keep them constant, the computer automatically opens external shutters and then activates large fans. Cold air is blown through underground

ventilation shafts into the potato store to lower the temperature.



Video room

Presentation of the different departments of the company (agronomy, commercial & marketing services, quality control, production, research & development, environment and logistic). Projection of the film explaining the manufacturing process.

Visit of the new production unit for frozen french fries and coated products

Capacity: 16 tonnes of finished products per hour. The production process includes 15 stages:

1 Reception – Sorting – Washing – Stoning

Upon arrival, the potatoes go first to the agronomy department for inspection. From there they go to the sorting centre, where they are calibrated and sorted into the required quality and size for each specific type of product (chips, flakes, specialities). Lastly they are thoroughly rinsed with water and any stones present are removed.

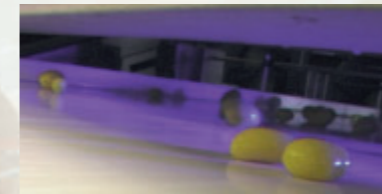
2 Peeling – Washing – 1e optical laser sorting

The potatoes are steam peeled (the peeler raises the skin from the potato, which

is then removed with a brush), before being washed in water. The discarded potato skins are used for livestock feed.



Optical sorting consists of inspecting the peeled potatoes to remove any with subcutaneous defects or any foreign objects such as pieces of wood, potato tops, etc. This is done automatically by an optical sorter equipped with cameras, backed by a laser system.

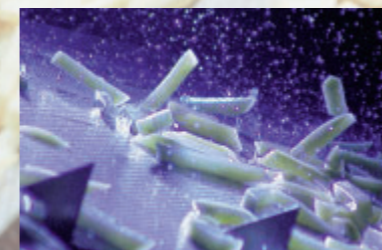


3 Cutting – Calibrating

The potatoes are either cut into chips with the aid of canon cutters (powerful pumps that force the potatoes at high speed through a knife block in which the mesh size can be varied in line with the required thickness) or into slices or dices, using rotating cutters (Sliced Potatoes, Potato Cubes, etc). After this they are calibrated by thickness and length: chips of the incorrect thickness or length are removed.

4 2e optical sorting

The chips, slices or dices are inspected by cameras resulting in any product with suspicious blemishes (black spots) to be removed. The faulty product is immediately ejected from the manufacturing process by compressed air.



5 Blanching

Blanching is carried out under a stream of hot water injected with steam in order to:

- Deactivate the enzymes.

- Modify the structure by partially gelling the starch.
- Standardise the colour by extracting the reducing sugars.

6 Cooling

After being blanched, the products are cooled in water in order to reduce the starch and improve the structure.

7 Drying

They are then dried in a flow of hot dry air in order to limit fat absorption and make them crispier.



8 Homogenisation of the products

This stage consists in a rest period in order to homogenize the remaining humidity in the product.

9 Coating – Flavouring

This phase is optional: the products are immersed in a solution of spiced or unspiced starch for producing items like Spicy Wedges or coated French fries.

10 Cooking – Fat removal

The chips are cooked in vegetable oil (palm or sunflower oil) – containing no GMOs – for between 60 and 90 seconds at a temperature of 160°C to 170°C; the fat is then removed using hot air or hot water.

11 Cooling – Freezing

The chips go through successive cooling tunnels to bring them to a temperature of 0°C. They then go through a freezer tunnel at -40°C to cool them to a temperature of -18°C.

12 3e optical inspection – Final calibration – Weighing

Before being packaged, the product is checked and calibrated one last time to ensure that it conforms to specifications. They are then weighed before being packed.

13 Packaging



Packaging is entirely automated. Each of the packing lines is equipped with:

- A built-in scale.
- An automatic bagging machine.
- A metal detector.
- A device for detecting poorly sealed bags.
- An automatic boxing system.
- A weight checker (bags and boxes).
- An HD inkjet marker.

Each line is capable of packing the whole range of weights (from 400gr to 5kg). The chips are packaged into bags made from polythene and placed in recyclable cardboard boxes.

14 Palletisation – Hooping – Labelling

The pallets are then formed, shrink wrapped and labelled which enables to trace them automatically by scanning the individual bar code on each pallet.



The pallets of finished products are kept in cold stores at a temperature of -20°C.

15 Control of finished products

During the whole manufacturing process, the products are physically controlled. You will discover this control (cooking test, color test, black spots test...). The products are also tested as regards their chemical and bacteriological properties.

We also have two other manufacturing units on the Leuze site:

- For manufacturing of potato flakes
This workshop includes 5 turning drying cylinders which dehydrate 12 tonnes of mashed potatoes in 2 tonnes of flakes per hour. These flakes are used as instant mashed potatoes or for the industry (snacks production, gnocchis...).
- The factory for frozen potato specialities
This workshop includes 5 lines which shape fresh mashed potatoes into specialities as the Pom'Pin, Duchesse Potatoes, Potato Croquettes... or which mix shredded potatoes with other delicious ingredients to make Röstis. Certain lines are also able to produce more elaborated specialities as the Gratin Dauphinois, Tartiflette... These lines have a hourly capacity of 5 to 6 tonnes of finished products.