



Technical Update 47

Vining Pea - post harvest

January 2023

PROCESSING

Post-harvest treatments

Vined peas are unloaded and transported to the processing factories usually situated within a three-hour delivery radius of the fields. Currently there are 9 freezing factories and 1 canning factory processing peas in the UK. Premium quality peas are vined, delivered and frozen within 120-150 minutes.

Cooling

Some peas are cleaned and chilled in water at 4°C. Chilling slows down the rate of conversion of sugar to starch, allowing more time for delivery to the factory.

Cleaning

On arrival at the factory, the peas are sampled to determine the tenderometer value and the level of extraneous matter which may include pods, stalks, stones, slugs, caterpillars, snails etc. This is used to calculate the value of the peas based on fresh, clean weight. Peas are either tipped into bulk hoppers with moveable belts or into holding pits with elevators that transport the peas over the cleaning processes.

Pneumatic Separators and Shakers

Usually, the first part of cleaning involves blowing a stream of air through the flow of peas to remove lighter material such as leaf and small pieces of EVM (Extraneous Vegetable Matter).

Pod and Stick Screens

The peas are fed over vibrating screens which allow the peas and smaller contaminants to fall through and any large contaminants such as stones, pods, twigs and any animals to go to waste. The peas and small contaminants drop into water. The peas are delivered by bucket elevator, belts or water flumes for further cleaning.

Flotation Washers

Stones and grit are removed by passing the peas against the flow of water over a ridged moveable belt. The peas go into flotation chambers where they sink in water and the finer material floats over a weir for waste collection. The cleaned peas are usually washed with clean water in a revolving drum before starting the cooking stage. In some cases, electronic colour sorting is used to remove stained peas or other EVM missed by the earlier processes.

Blanching

Clean peas are delivered to the rotary blancher where they are dropped into water at 96°C for approximately 90 seconds. Blanching can also be carried out in steam, which is more energy and water efficient, but the same principle applies. The heating process stops the enzymes converting sugars into starch so keeping young peas sweet. Peas are then cooled in clean, chlorinated water.

Freezing

Two types of freezers are used in the processing industry, a vibratory bed system and a belt system. Both types use refrigerated air blown through a transporting system set within an insulated box. Vibratory bed freezers push refrigerated air through small holes in the aluminium floor of the bed. The angle of the holes allows the peas to be moved along the bed in a wave motion to the freezer outlet. Some beds also vibrate to keep the peas individually quick frozen (IQF). In the belt freezer, peas sit on a wire mesh belt through which cold air is forced as the belt is driven through the refrigerated freezer box.

Collection

Frozen peas can be optically sorted at this stage, and many are also put across vibratory slotted screens to remove any further debris. The peas are usually collected into totes, boxes, octobins or palletainers. At this stage further quality control tests are undertaken and the final grade, TR, grower details, variety, batch number and field records for each load are recorded to provide full traceability. Peas are then transferred to the cold store to await sale in bulk or to be repacked into retail and wholesale packs.

Canning

The canning operation takes place immediately after cleaning and blanching. Cans are filled automatically with peas and a brine solution which may contain water, salt and sugar. After sealing, the cans are cooked at 121°C in a pressurised retort for several minutes. The cans are then cooled before labelling and packing.

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