



PASTEURIZATION AND STERILIZATION OF SPICES

The importance of safe food in a globalized world

Food safety has become an issue of crucial importance in the agri-food sectors. Requirements, both regulatory and through specifications within markets, are quickly becoming stricter and consumer expectations are high. Spices are among the most vulnerable categories of agricultural products when it comes to microbiological contamination because of the scale of farming, and the length and complexity of the supply chain. The undetected presence of pathogens, spoilage micro-organisms and spores can impact the entire supply chain of a product, which could result in non-compliance, costly product recalls and brand damage.



The urgency of a homogeneous and highly effective treatment

Pasteurization and sterilization of spices have become standard treatments in the spice industry. However, as 'spices' is a generic term for a group of very different products and consequently not a uniform product itself, the effective treatment of all of these various products remains challenging.

At the heart of our pasteurization unit is the ROTOSOL®, which offers steam-vacuum pasteurization in a rotating autoclave. This dynamic process is ideally suited for the treatment of spice products of all shapes and sizes: kernels (whole or pieces), leaves, roots, and cut, diced or sliced products. Full and equal penetration with dry saturated steam in a partial vacuum ensures a highly effective treatment for a large range of products, including root and tree spices such as ginger, nutmeg and cinnamon. Steam pasteurization significantly and effectively reduces microbial load and infestations, such as:

- Pathogens (salmonella, E. coli, enterobacteria)
- Spoilage microorganisms (moulds, yeasts)
- Thermal-resistant spores
- Insects at all stages of their lifecycle

Minimal impact on product quality

Treatment is effective even at the low end of the temperature range, which makes the pasteurization safe for delicate and heat-sensitive spice products. It excludes moisture pick-up, does not require drying after treatment and has a minimal impact on the organoleptic qualities of

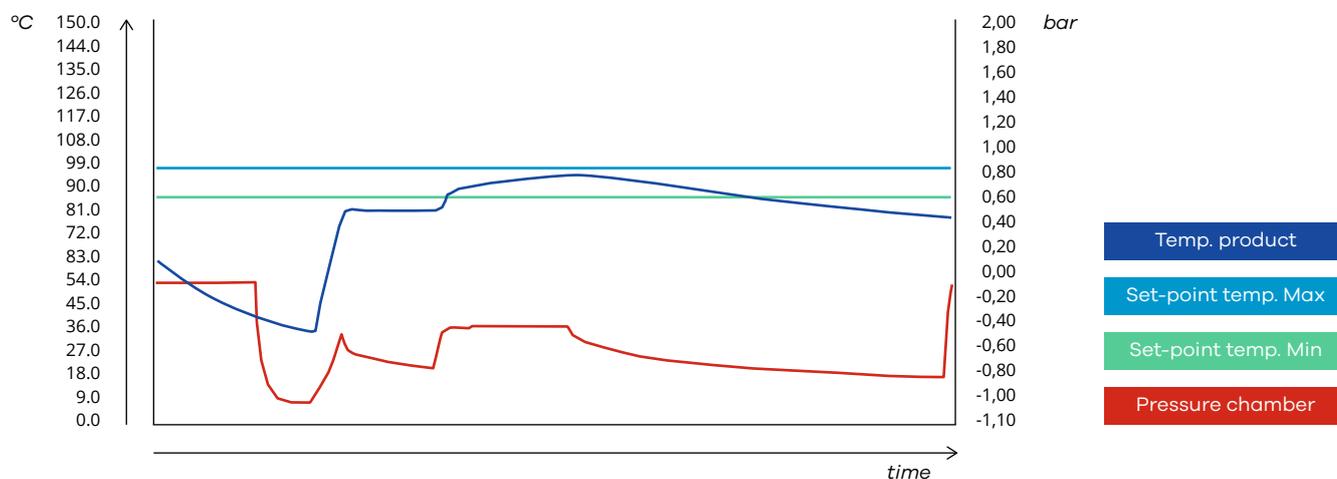
Fully certified for FSSC 22000 and Skal

Food Ingredients Service Center Europe (FISCe) is your trusted partner for the pasteurization and sterilization of spice products. We are certified for food safety (FSSC 22000) and organic processing (Skal).

your product. The process can be adapted to your desired log reduction. Cardamom, for example, can therefore be treated effectively with minimal impact on the overall product quality (see graph below).

Fully controlled processing environment prevents cross-contamination of products

Steam pasteurization is 100% natural and completely free of chemicals and radiation. The design of the pasteurization unit and its processes guarantee the highest level of food safety and reliability, with no compromises on product quality. Small batch processing provides full traceability for each load, with automatic recordings of all critical process parameters such as temperature, pressure and timing. Throughout the entire process, cleaning through an automated, integrated CIP system ('cleaning in place') and strict sanitation programmes are in place to avoid cross-contamination.



Graph process parameters cardamom