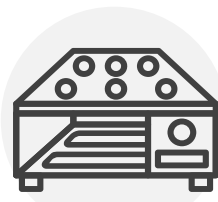


# FOOD PROCESSING TECHNOLOGY TO IMPROVE *Food Quality*

The food industry is constantly evolving. Manufacturers are using new technologies to meet the rising demand for high-quality food products while maintaining rigorous safety standards.

## FOOD PROCESSING TECHNOLOGIES



### High-pressure Processing (HPP)

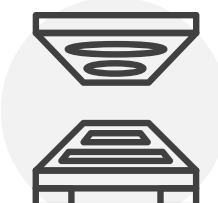
Transmits pressure to kill pathogens and eradicate any spoiled food

#### Advantages

Quality, freshness, extends shelf life

#### Disadvantage

Can't be used for all foods, including cereal, fresh meat, bread and leafy vegetables



### Ultrasonic Sealing

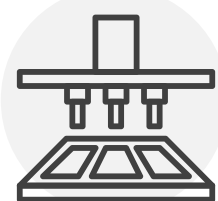
Ultrasonic waves are used to seal food packaging

#### Advantages

Ability to seal through contamination, minimizes leaker rates, provides process feedback for QC, compatible with sustainable materials, reduction of energy consumption

#### Disadvantage

Higher initial investment compared to heat  
[ncbi.nlm.nih.gov/pmc/articles/PMC6210518](https://ncbi.nlm.nih.gov/pmc/articles/PMC6210518)



### Pulsed Electric Fields (PEF)

Uses short pulses of electricity to kill detrimental microbes

#### Advantages

Has minimal negative effect on food quality, extends shelf life

#### Disadvantage

High initial cost  
[intechopen.com/books/structure-and-function-of-food-engineering/pulsed-electric-fields-for-food-processing-technology](https://intechopen.com/books/structure-and-function-of-food-engineering/pulsed-electric-fields-for-food-processing-technology)



### Irradiation with Ionizing Radiation

Applies gamma rays, X-rays or electron beams to foods

#### Advantages

Eliminates/reduces microorganisms and insects, extends shelf life and freshness

#### Disadvantage

Some consumers aren't comfortable with radiation used on food  
[fda.gov/food/buy-store-serve-safe-food/food-irradiation-what-you-need-know](https://fda.gov/food/buy-store-serve-safe-food/food-irradiation-what-you-need-know)



### Ultraviolet Light (aka irradiation)

Uses ultraviolet lights to remove microorganisms and insects

#### Advantages

Kills many viruses and bacteria, can be used for a variety of foods

#### Disadvantages

May change texture or taste of some foods, such as milk  
[light-sources.com/blog/lamps-for-uv-light-food-sterilization-equipment](https://light-sources.com/blog/lamps-for-uv-light-food-sterilization-equipment)



[herrmannultrasonics.com](https://herrmannultrasonics.com)