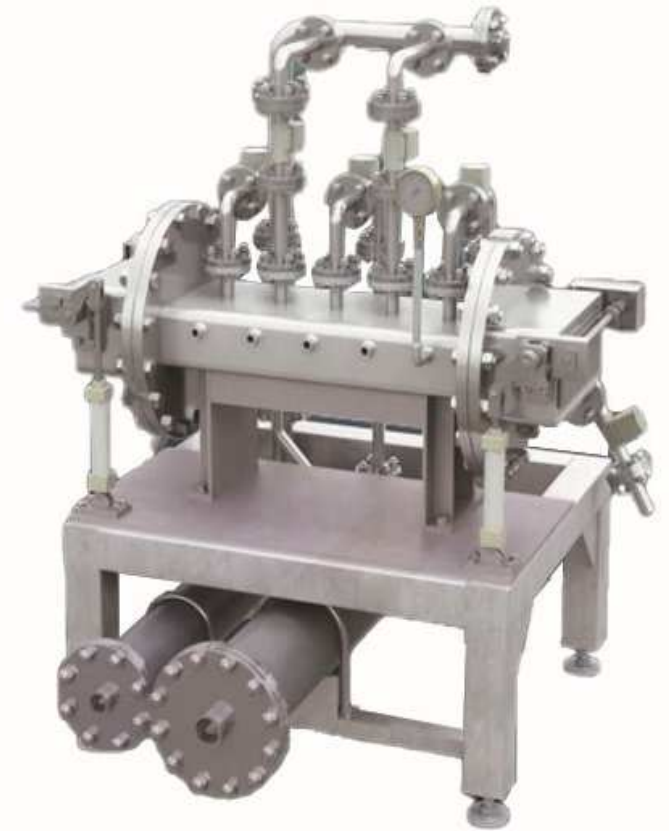




Pressure Sterilization Device

Sodick Co., Ltd.,
Food Machinery Division
2019/July

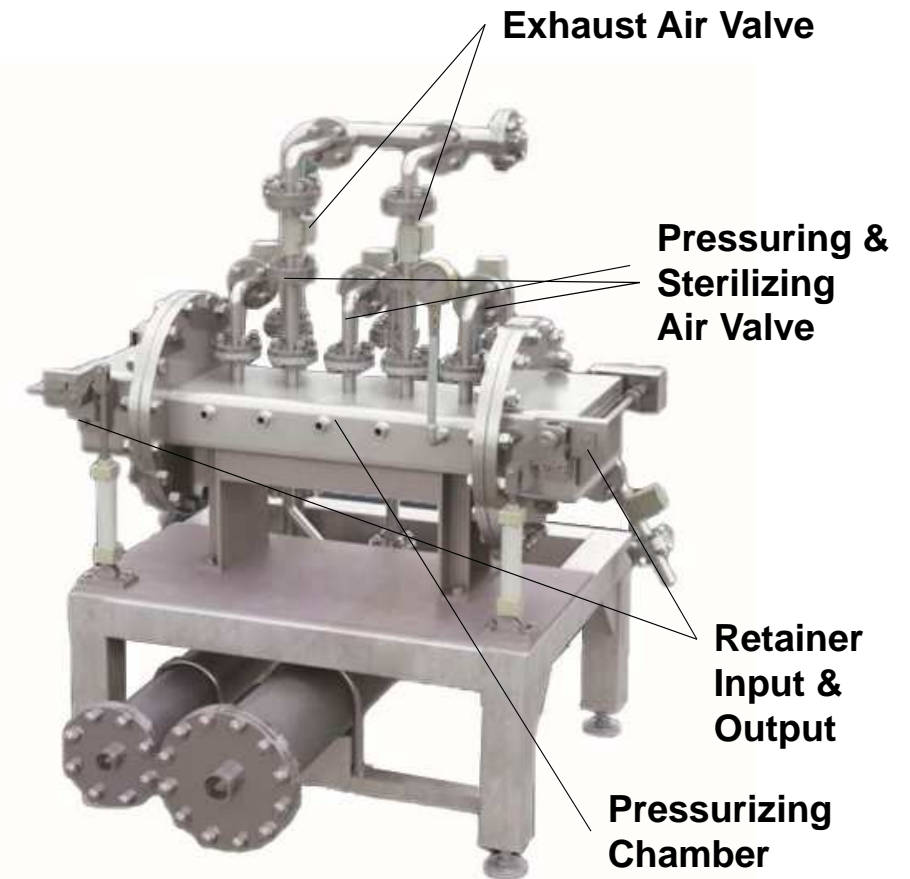


What is Pressure Sterilization?

To sterilize food materials by saturated steam of high-temperature of over 100°C in a very short time.

Not only for sterilization, but also it is good for different process purposes.

- To minimize unnecessary odor components.
- To maximize sweetness (when used for rice).
- To peel off thin vegetable skin and improve yield ratio of edible portion.



Sodick Pressure Sterilization Device Features



- High airtightness in chamber with special door sealing structure.
- Applicable to continuous production system.
- Perfect sterilization of general bacteria, and total inactivation of spores.
- Attaining High F-values easily.



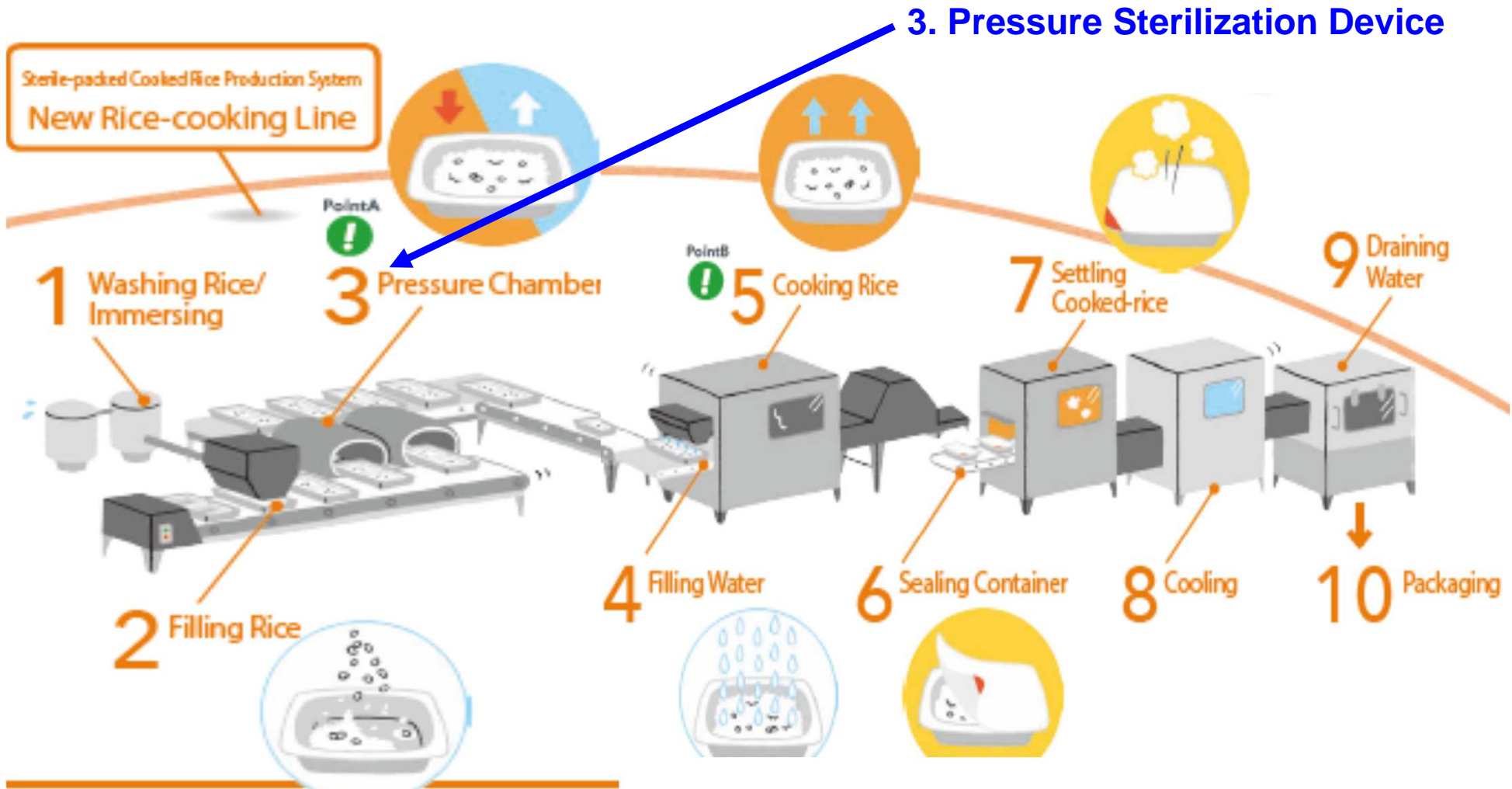
Patent No.JP6524322



Application Examples of Sodick Pressure Sterilization Device Sterile-packed Cooked Rice Production System by Sodick

System Composition

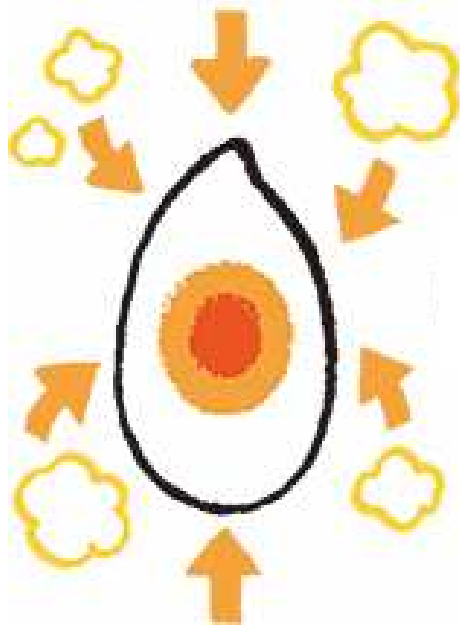
Sodick Microwavable Sterile-packed Cooked-rice Production system



Benefit of Pressure Sterilization

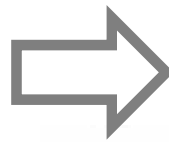


Steam In



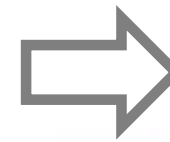
**Quick Gelatinization of Starch
by High-temperature Steam**

**Mouth-feel of each Rice Grain is
maintained even after rice is
cooked by Thin Gelatinized Layer**

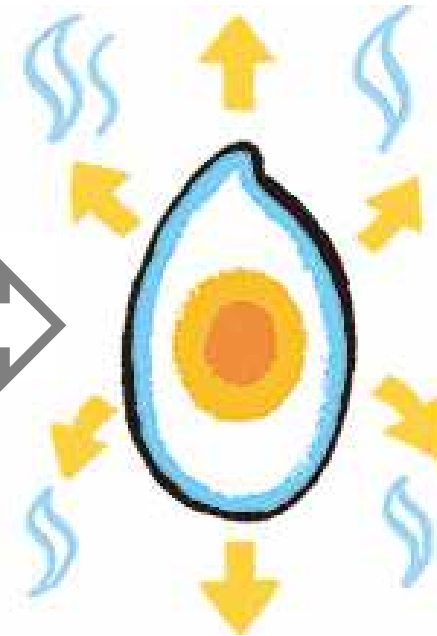


**Part of Starch changes
to Glucose**

**Rice Sweetness
Increase !**



Steam Out



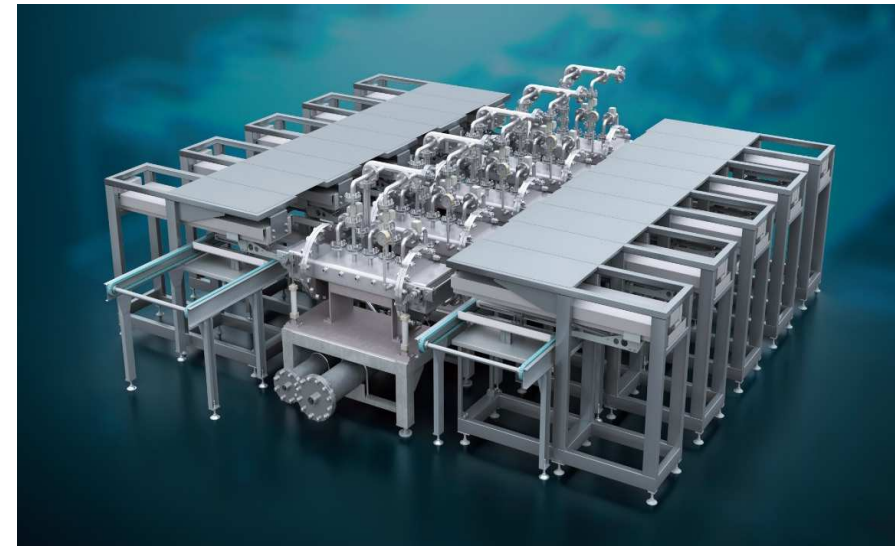
Minimizing Unnecessary Odor

**Rice of Old Crop
tastes like New Crop**

Application Example-1 (Rice Pack)



- Pressurizing Time(typical): 40sec
- Pressure Level(typical): 0.35MPa
- Sterilization Temperature (typical): 140°C
- Production Capacity (max.): 9,000 pack/h



**Pressure Sterilization Device
for Sterile-packed Cooked-rice
Production system by Sodick**

Application Example-2 Skin-Peeling Device

(Patent No.JP6513873)

Method of Peeling Skin

1. Expose vegetable·fruit material to high-temperature saturated steam of over 100°C in a very short time.
2. Steam sterilizes the material's exterior by a high level of latent heat and sensible heat.
High-temperature water produced in this process enters the interior.
3. The moisture of high-temperature in the interior is made to vaporize quickly to transpire. Then, the skin will separate from the interior.



External Skin

Internal Skin



Cross Section View of Persimmon

Benefits of Skin-peeling Device



- Edible part is not wasted as only the skin is separating.
- Process can be performed in a few seconds, and edible part can be retrieved almost 100%.



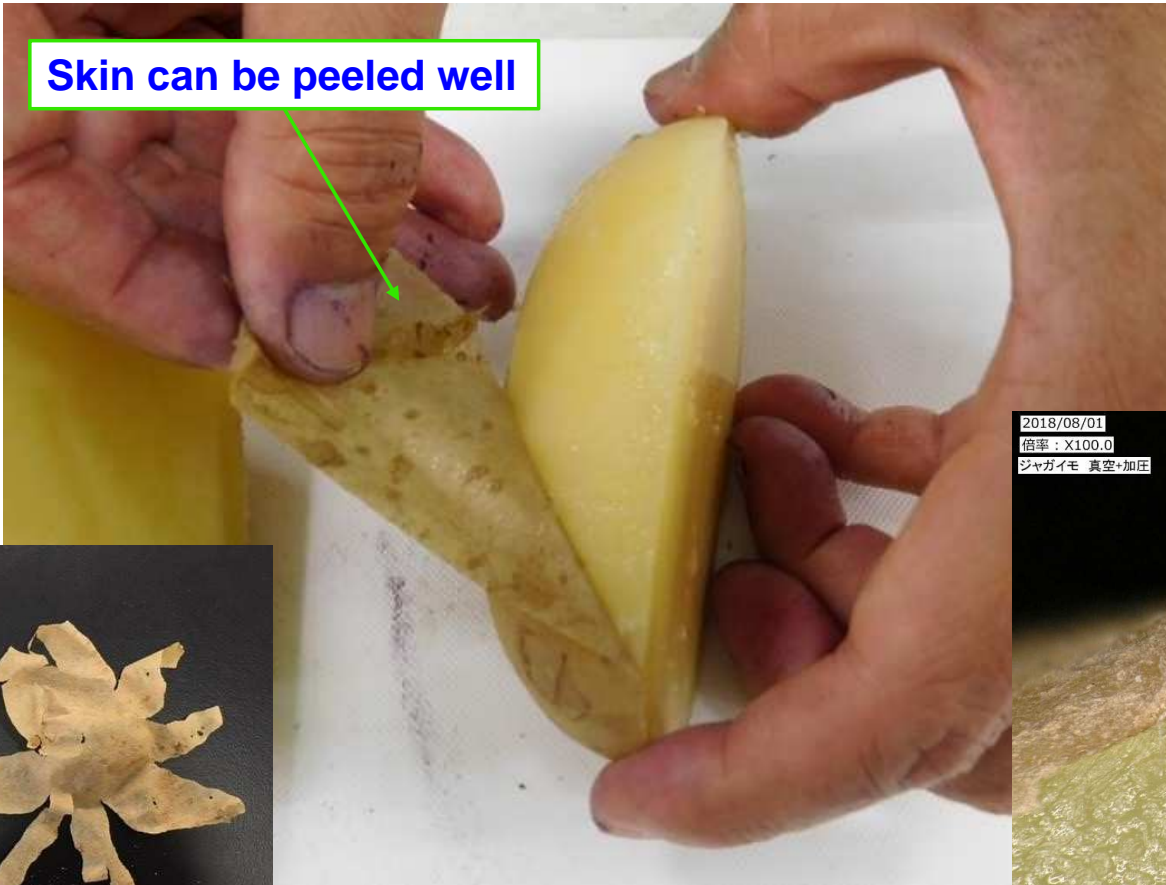
Example of Application to Potato

- Option to select to yield the edible part as Raw or Heat-processed.
- Possible to sterilize general bacteria perfectly and totally inactivate spores.
- Attaining High F-value easily.

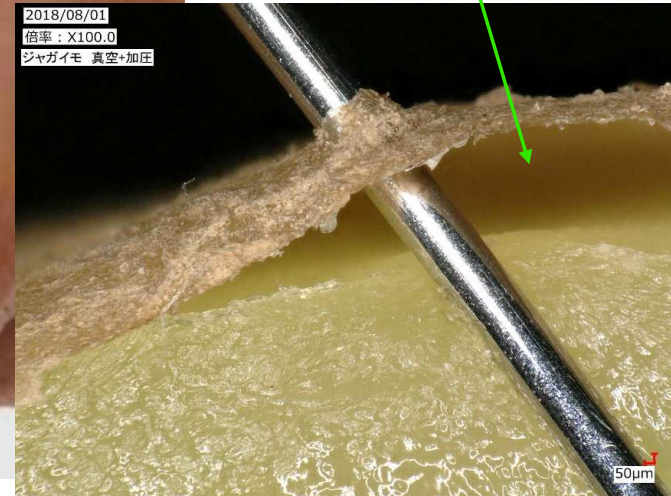
Example of Skin-peeling (Potato)



Skin can be peeled well



Skin is separated from the interior, and no edible interior comes with the skin



Example of Skin-peeling (Fruit - Vegetable)



Burdock



Carrot



Peach



Taro



Tomato

Skin-peeling Example (Oilseed・Rapeseed)



Skin is not floating before the process.



分割ナタネ (剥皮処理済み)

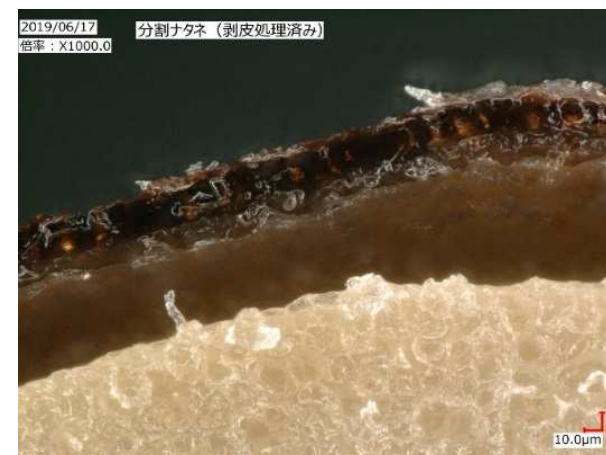


Rapeseed after the process

Exterior Skin is floating

Benefits in the case of Oilseed·Rapeseed

1. Discoloring work load is reduced.
2. Heat-denaturation of Protein:
Protein in the seed is heat-denatured,
reducing emulsification,
→ Oil Yield Increase.
3. Heat-inactivation of Enzyme:
Enzyme like Lipase is inactivated
→ Stabilizing Oil Quality



Rapeseed