By Obsa Bayisa

As the operation of my poultry farm is supplying and processing process of egg and other poultry products which involves several key steps to ensure the production of safe and high-quality products for consumption. Here is one of the essential processing steps which is:

Egg Processing:

- Eggs are processed in facilities called "breaker plants" where they are removed from their shells.
- Basic egg products include whole eggs, whites, yolks, and various blends processed to reduce or eliminate foodborne risks.
- Common treatments like **pasteurization** are used to reduce or destroy bacteria in egg products

Here in this investigation I will try to discuss the **pasteurization** processing steps because this, pasteurization of eggs involves heating them to a specific temperature to kill harmful bacteria like salmonella, ensuring their safety for consumption. Pasteurization methods vary, but the standard process involves heating eggs to 57°C (135°F) for a specific duration. Home pasteurization methods include heating eggs in a double boiler to 140°F and maintaining this temperature for 30 minutes, whisking constantly to distribute heat evenly. Pasteurized eggs are crucial for recipes requiring raw eggs, reducing the risk of foodborne illnesses like salmonella. Commercially, egg pasteurization is highly regulated, using precision equipment and constant monitoring to ensure safety. All egg products outside their shells are pasteurized to meet food safety standards.

The purpose of pasteurizing eggs is to reduce the risk of foodborne illnesses caused by harmful bacteria like Salmonella. Pasteurization involves gently heating eggs to a specific temperature that is sufficient to kill bacteria but not high enough to cook the eggs. This process makes eggs safe for use in recipes that call for raw or partially cooked eggs, ensuring food safety, especially for vulnerable groups like children, pregnant individuals, and the elderly. Pasteurized eggs are recommended by health authorities like the Centers for Disease Control and Prevention (CDC) to minimize the risk of foodborne illnesses associated with consuming raw or undercooked eggs

There’re different types of equipment used for pasteurizing eggs includes specialized machines designed for efficient and precise pasteurization processes. Some of the key equipment for pasteurizing eggs are:

1. Egg Pasteurization Machine
2. Liquid Egg Pasteurizer
3. Hybrid Egg Pasteurizer and etc.

But I prefer Liquid Egg Pasteurizer Equipment like the M-350 pasteurizer which is designed for the production and packaging of pasteurized egg mass obtained in the breaking process. It ensures quality pasteurization for heavily contaminated eggs, with extreme pasteurization times to guarantee safety

Figure 1. M-350 liquid egg pasteurizer

The specifications of the M-350 liquid egg pasteurizer: are listed as follows

1. Capacity: 350 liters (92 gallons) per cycle, with a minimum capacity of 175 liters (47 gallons) per cycle.
2. Power Supply: 33 kW, 400 V, 3/N/PE 50/60 Hz; 33 kW, 230 V, 3/N/PE 50/60 Hz.
3. Compressed Air: 6-8 bar, minimum flow 260 l/min, 87-116 psi, minimum flow 9.2 CFM.
4. Water: Water from the client's installation.
5. Dimensions:
   - ✓ Tank: 960x960x2000 mm (38x38x79 in).
   - ✓ Chiller: 1200x1200x1200 mm (48x48x48 in).
   - ✓ Filling Machine: 950x650x1650 mm (38x26x65 in).
6. Workspace: 5500x2200 mm (217x84 in).
7. Weight:
   - ✓ Tank: 180 kg (397 lbs).
   - ✓ Chiller: 150 kg (330 lbs).
   - ✓ Filling Machine: 70 kg (155 lbs).
8. Operation: Requires supervision and regulation from operating personnel.
9. Material: All parts in contact with eggs are made of stainless steel AISI 316, while the remaining parts are made of stainless steel AISI 304.

Provide a source and a price for the piece of equipment

- ✓ You can purchase the M-350 liquid egg pasteurizer from Inovaint or Eggbreaker.com.
- ✓ Price: The M-350 liquid egg pasteurizer is priced at €25,000 or 1,539,000 ETB at current value of €

The M-350 Liquid Egg Pasteurizer is the ideal piece of equipment for my use case due to several key reasons as listed below:

1. Quality Pasteurization: The M-350 is designed for heavily contaminated eggs, ensuring extreme pasteurization time, which is crucial for maintaining high standards of safety and quality in egg processing.

2. Efficiency and Adaptability: This pasteurizer offers efficient pasteurization and cooling cycles, adapting to different amounts of raw material, making it versatile for various production needs.

3. Remote Process Control: The ability to control the pasteurization process remotely through a website interface enhances operational efficiency and allows for monitoring from a distance.

4. Storage Capability: After pasteurization, the egg mass can be stored in refrigeration conditions for up to 30 days, providing flexibility in production and distribution processes.

5. Guaranteed Return on Investment: The equipment ensures a return on investment within a short period, making it a cost-effective solution for egg manufacturing companies.

Considering these factors, the M-350 Liquid Egg Pasteurizer stands out as the right choice for our use case, offering quality pasteurization, efficiency, adaptability, remote control capabilities, storage options, and a guaranteed return on investment.