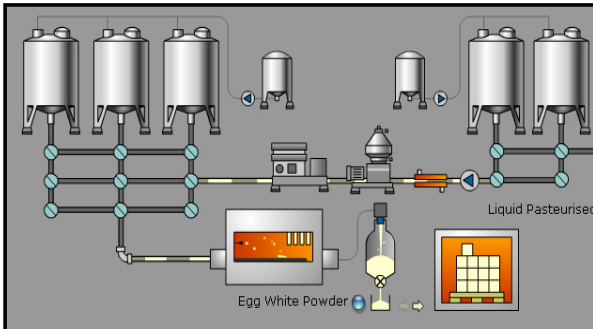


SANOVO

EGG WHITE POWDER PROCESSING



General



Process:

1. Intermediate storage and pH-adjustment (pH 7)
2. Heating (35-38°C)
3. Clarification
4. Concentrations from 11 to 22% (optional)
5. Fermentation and storage
6. Spray drying and packaging
7. Heat treatment (65-70°C for 2-4 weeks)

The egg white that is loaded into the egg breaker is first accumulated in a tank and thus adjusted to approx. pH 7.

Afterwards, the egg white is concentrated by ultra-filtration in order to remove as much excess water as possible prior to spray drying (optional). This reduces the energy consumption of the spray dryer by 50% and doubles its capacity.

The liquid egg white is fermented in order to remove glucose, which may react with the amino acids during the spray drying process causing a so-called "Maillard" reaction, resulting in an undesirable brownish colour of the egg white powder.

Bacteria are most commonly used for the fermentation process but yeast or enzymes may be used as an alternative.



After fermentation the egg white is cooled and stored and ready for spray drying.

To avoid protein denaturation, the spray drying is performed at a low temperature and under as gentle conditions as physically possible and then packed into cardboard boxes.

The last step is dry pasteurisation, which is traditionally performed in a hot room where the powder is kept for 2-4 weeks at 65-70°C in order to decimate the number of bacteria for use in food as well as non-food products.

Concentration of the egg white

The concentration of the egg white is performed continuously in an Ultra-filtration plant (UF). Prior to concentration the egg white is heated up to fermentation temperature to increase the efficiency of the membranes and is cleaned efficiently by a clarifier to remove eggshell fragments from the liquid.



The concentration of egg white results in:

- Half size of Spray Dryer = reduced investment
- 50% less energy consumption (steam/natural gas) for spray drying process
- Improved foaming capacity
- Less dusty egg white powder

Egg White Powder

Egg white powder can be classified into two different qualities:

- High whip (> 150 mm)
- High gel (300-700 g/cm²)