The Guide to Chicken Breast

Chicken Breast is a MUST item for modern meat processing companies. No other meat item is as well accepted by all consumers, including children.

Fresh/frozen or pre-cooked Chicken Breast is often used to manufacture QSR [Quick Service Restaurant] food items which are distributed to restaurants, catering and food service customers.

With the right ingredients and processing methods, manufacturing of juicy chicken breast is easy and profitable.

Raw Materials

We suggest using fresh, well-trimmed chicken breast fillets, free from connective tissue and sinews which both will negatively influence the binding and water absorption process.

If only frozen raw material is available, make sure the chicken breast are defrosted slowly, best inside sealed pouches in a cold water tank.

Whole muscle Chicken Breast recipes can use as much as 50% added water, re-structured product even more. The most common recipes contain 20-40% added water for extra juiciness and texture.

Depending on the local water temperature, between 50 and 100% of the added water should be flaked ice. Flaked ice dissolves faster in brine making tanks and is more economical.

Modern ice machines offer UV-Disinfections which has direct influence to the final product’s shelf life.

More information on ice machines can be obtained from www.maja.de.
Ingredients and seasonings

Please refer to xlsx-recipes for details regarding ingredients. These recipes are conveniently presented in MS EXCEL® format which allows to change the batch size according to individual requirements. The quantity of all ingredients in the recipe will change when the kg-value of Total Meat is changed:

1. Click on the Excel-icon to download the recipe
2. Enter the desired meat quantity into the blue cell (standard = 100 kg)
3. Print or save your individual recipe

Processing

**Chicken Breast Preparation**

Especially for whole muscle Chicken Breast, it is highly recommended that the meat chunks are separated from the membrane by using a skinner. This will improve binding considerably due to higher protein release of the meat chunks.

Skinning machines are available in butcher shop sizes up to fully automatic membrane skinning machines, for pork, beef, lamb, and poultry applications. Photo courtesy of Maja Machines: [www.maja.de](http://www.maja.de)

**Brine Preparation**

Start by pre-blending AGAGEL with some salt/curing salt. This will improve the dissolving result of the ingredients. The ice should be completely dissolved in the water, and the temperature should not exceed +2 °C. Lower temperatures translate into longer shelf-life!

Dissolve the pre-mix of AGAGEL and salt/curing salt in the brine first. Then, add the phosphate, the remaining salt/curing salt and any optional ingredients [no decor seasonings] and dissolve completely.

**Injecting [optional]**

Injecting reduces the tumbling time and increases moisture absorption and tenderness. Depending on the equipment used, the needed amount of brine can be injected in one or more strokes. The remaining brine should be added into the tumbler, together with the injected breasts. Choose 1.8 bar pressure.

*Pro Tip*: Multiple injecting using low pressures is preferred over single, high pressure injecting. High pressure injecting may cause damage of the breasts structure, causing gel pockets and uneven brine distribution.

Photo courtesy of Rühle Machines: [www.original-ruehle.de](http://www.original-ruehle.de)
Tumbling
Most modern tumblers offer vacuum tumbling in intervals. We recommend using 20 minutes tumbling, followed by 20 minutes rest. Set your tumbling machine to 6, better 7 intervals of each 20/20 minutes [tumbling/rest].
Reduce rpm, if possible, and set your vacuum pump to 80% minimum. Any excess brine, if existing, may be absorbed with Potato Starch or similar.

Pro Tip: If high yield Chicken Breast [above 50%] are in need, we suggest to start with an extra ‘dry’ cycle, meaning 20 minutes tumbling, followed by 20 minutes rest without any brine or dry ingredients. This will release the surface protein by 100%, making the Chicken Breasts more juicy and tender.

Cooking, Chilling
Carrageenan is the active ingredient in AGAGEL 360 and AGAGEL 390. Carrageenan requires a temperature of 70 °C to form a non-reversible network with the meat’s own protein, yet resulting into increased water binding and holding performance.
Phosphates and starches, for example, will hold some water only for some time, but cannot hold the water over a certain period of time. This unlikely process is called syneresis.
To comply with the food legislation in most countries, and for maximum shelf life, cooking to an internal temperature of 72 °C is highly recommended.

Pro Tip: Stop the cooking process as early as 70 °C. The temperature will still go up to 72 or even 73 °C, even if the oven is shut off. This will avoid excess loss of juices and yield.
Store at 2 – 4 °C for at least 24 h before slicing or shipping