# Equipment, Formulation and Processing Procedures
# Tofu with Hot Mustard Sauce

## 1.0 EQUIPMENT

This equipment list is provided for informational purposes only. Equivalent equipment may be substituted for the listed equipment.

| ITEM | MANUFACTURER | MODEL |
|---|---|---|
| Steam Jacketed Kettle | Groen | TDA 40 Qt. |
| Convection Oven | Blodgett | EF111 |
| Retort | Stock | 900mm |
| Vacuum Sealer | Swiss Vac | 410 |
| Bostwick Consistometer | | |

## 2.0 FORMULATION

| INGREDIENT | PCT | DESCRIPTION/PRODUCT NUMBER /SOURCE |
|---|---|---|
| Napa Cabbage | 16.81 | Fresh |
| Tofu | 57.20 | Extra firm, silken style, Mori-Nu |
| Balsamic Vinegar | 8.74 | |
| Hot Mustard | 7.40 | Ka-Me |
| Peanut Oil | 0.17 | Lou Ana |
| Cayenne Pepper | 0.05 | Ground, SpiceTrader |
| Onion | 0.40 | Dried, chopped, SpiceTrader |
| Garlic | 2.22 | Refrigerated, minced, in water |
| Molasses | 6.20 | Unsulfured |
| Modified Food Starch | 0.81 | NATIONAL 465, National Starch and Chemical |
| | 100.00 | |

**NOTE:**

1. Percentage is based on cut Napa Cabbage with ends removed.
2. Percentage is based on an initial drained weight of tofu once it has been removed from the package. Liquid will continue to expel from tofu before baking. The weight of this liquid should be included in the calculation for baked tofu yield.

## 3.0 PROCEDURE

**Note:** Throughout the processing procedure there are Mandatory Inspection Points (MIPs). Steps identified with a "MIP" must be verified by a Quality Control (QC) representative before proceeding to the next processing step.

NAPA CABBAGE PROCESSING PROCEDURE

**3.1** Wash napa cabbage thoroughly.

**3.2** Trim ends of napa cabbage. Cut cabbage into 1" x 2" pieces.

**3.3** Allow cabbage to dry.

TOFU PROCESSING PROCEDURE

**3.4** Preheat convection oven to 350° F.

**3.5** Cut into ½" cubes.

**3.6** Transfer 3 lb. of tofu to each half sheet baking pan that has been lightly sprayed with nonstick vegetable cooking spray. Pan in a single layer, with no overlapping.

**3.7** Bake pans of tofu for 12 - 15 minutes at 350° F in a preheated convection oven. NOTE: Tofu cooking time may be adjusted to accommodate different equipment needs.

**MIP 3.8 Verify that the cooked yield for tofu is 67.5% ± 2.5%.**

**3.9** Set the tofu aside.

SAUCE PROCESSING PROCEDURE

**3.10** Add napa cabbage to the kettle.

**3.11** Cover kettle. Open steam valve with pressure gauge set at 10 psi.

**3.12** Steam cabbage until wilted, stirring occasionally to prevent cabbage from burning.

**3.13** Remove lid from kettle and add 80% of balsamic vinegar followed by hot mustard, peanut oil, cayenne pepper, onion, and garlic. Mix well.

**3.14** Heat mixture to 170° F in uncovered kettle, stirring occasionally.

**3.15** Combine NATIONAL 465 and the remaining 20% of balsamic vinegar; stir well to combine.

**3.16** Add starch slurry to kettle. Continuously mix product in kettle and monitor temperature until mixture reaches 170° F.

**3.17** Close steam valve. Hold product at 170° F for 3-5 minutes.

**MIP 3.18 Verify that the Bostwick consistency reading is 0.5 cm ± 0.5 cm at 165° F for 15 seconds.**

**3.19** Add molasses to kettle; mix to combine.

**3.20** Kettle cooling: Open vent valve and turn on cold water.

**3.21** Add sauce to tofu in the following ratio: 1 part sauce to 1 part baked tofu. Mix gently to combine.

PACKAGING AND RETORTING PROCEDURE

**3.22** Package product in 8 1/8" x 4 ¾" retort pouches to a minimum fill weight of 4.5 oz. (128 g) and maximum 5.0 oz. (142 g). Induction heat seal at 400 mm-Hg, while pulling vacuum to reduce headspace.

**MIP 3.23 Verify and record data for the following Critical Factors that must be met prior to preceeding to retorting.**

**a. Cooked Tofu Yield: approximately 70%**

**b. Maximum Bostwick Reading is 1.0 cm at 165° F for 15 seconds: _____**

**c. Maximum Fill Weight: 5.0 oz. (142 g)**

**3.24** Thermally process filled pouches in a Stock Full Water Immersion Retort under 2.0 bar overriding pressure. Pouches shall be restrained during processing by a rack system. Process at 250° F for sufficient time to receive commercial sterility using the Ball Formula Method to a minimum $F_o$ of 6.0. Note: Processor must determine the z, m+g, and $T_{ref}$ values prior to processing. Cool product in water, under pressure, to an internal temperature of 110° ± 5 ° F.

**3.25** Incubate representative pouches from each retort at 95° ± 5 ° for 10 days and inspect for sterility.

**3.26** Verify package by performing a 100% visual inspection of the lot prior to casing.

**3.27** Ink-jet print the product name and manufacturing date on each pouch.