Methods

Overview

Fresh Brahma chicken breasts known for its boneless and high protein properties were sourced from a single farm to ensure uniformity. Two groups were established: a control group with raw, unprocessed chicken and the experiment group subjected methods of cooking involving heat and condiments flavouring. After the cooking and flavouring process, the controlled group and experiment group subsequently underwent two tests: bacteria testing using Lionel's spectrophotometric method (1999) and taste testing involving licensed research taste testers. This allows for an accurate and comprehensive comparison.

Preparation and heating

Both the control group and experiment group were first sliced up into chops of 3.0 cm even thickness, and 5.0 cm by 5.0 cm length and width. This is similar to the standard sizes of chicken chops available for consumption on the market and is of appropriate size for eating. The experiment group chicken then underwent seasoning process, where a homogeneous mix of salt and pepper of consistent grind of 0.03 cm were rubbed into the chicken by a mixing drum for 5 minutes. Next, the experiment group chicken chops were exposed to 80 °C heat from both sides for 20 minutes in a 2000 Watt electric oven. This ensures the experiment group chicken chops are completely cooked. During this process, significant change in colour and texture will be observed. A thoroughly cooked chicken would appear white to tan.

Analysis and testing

1 Bacteria testing

A spectrophotometric method to determine bacteria count outlined by Nunez et al. (2022) was carried out. This method has been used for decades to measure the density of bacterial populations. Samples were taken from 5 different chicken chops from each group for repeated testing. This ensures the accuracy of results from the testing. The chicken samples were individually crushed using a mortar and pestle before putting into the spectrophotometer for analysis.

2 Sensory taste testing

Two independent group taste testers were recruited. They were blind folded and followed a 5-step standard procedure for food taste testing (Maradona 1977). This ensures safety and reliability. Using two spoons, a sampling and a tasting spoon, small amounts of food were taken. To prevent contamination, no direct tasting from the sampling spoon or any utensils used in preparation or service is allowed.