

CHAPTER III

RESEARCH METHOD

This chapter discusses methodology that is used by the researcher in the research. It deals with the research design, Place and Time of Research, Material and instrument, Sampling Technique, Procedure, and data analysis.

A. Research Design

In this research, the researcher will conduct an experimental study, because it considers analysis result of laboratory experiment and organoleptic test. In this point, the approach used by researcher is Descriptive quantitative. It is because the data will be gained are numeric and will be analyzed by description. The research framework for this research can be shown in figure 3.

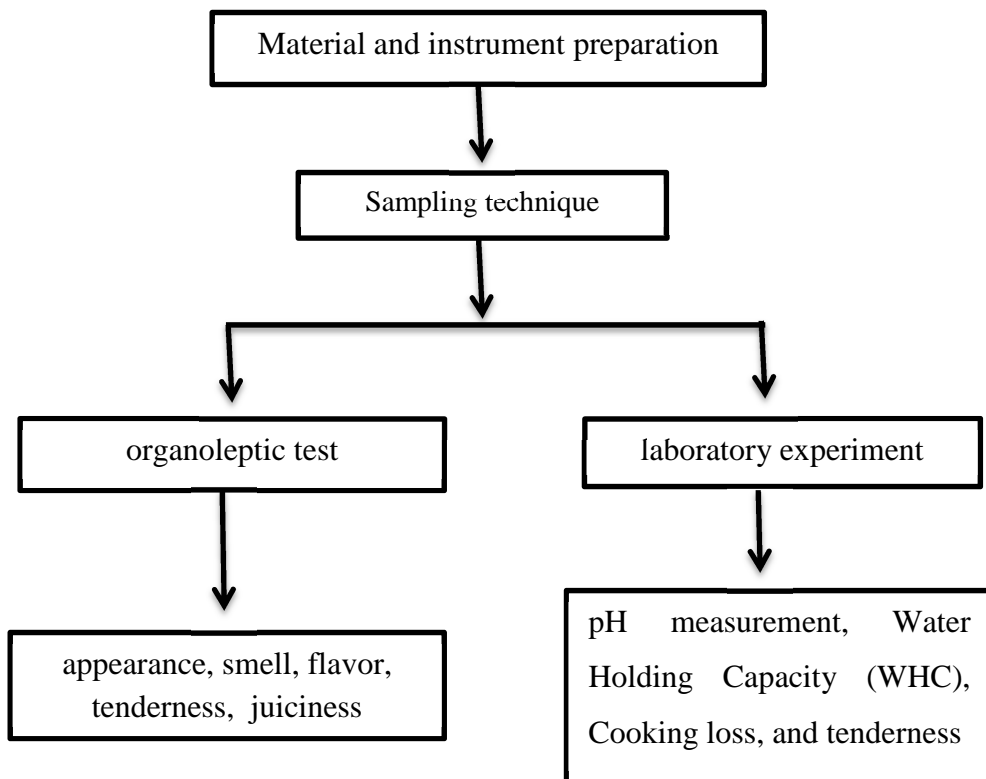


Fig.3.1 Research chart Process

B. Place and Time of Research

This research will be conducted on March- April 2013 in the three different places, they are:

1. The sample for this research will be gotten from Jrasah traditional market, Purwoyoso village, subdistrict Ngaliyan- Semarang.
2. Chemistry parameter measurement will be taken in the chemistry laboratory, Tarbiyah Science and Teacher Training faculty IAIN Walisongo Semarang, including pH, Water Holding Capacity (WHC), Cooking loss, and tenderness.
3. Tenderness measurement uses Universal Testing Machine where will be taken in the laboratory of technology of Agriculture faculty, Gadjah Mada University Yogyakarta.

C. Material and instrument

In this research, materials used 500 grams beef, aquades and 40 grams pineapple's peel. The equipment used are knife, blender, plastic bag, beaker glass (200 ml), measurement glass, measurement flask, Sentrifuge SCILOGEX OMO412, pH meter, porcelain cup, neraca analytic, thermometer, water bath, Universal Testing Machine Zwick/ Z0.5, and timer.

D. Sampling Technique

The sample had been taken in the Jrasah traditional market. The pineapple's peel has been acquired from pineapple seller. Her name is Utami. As Utami's statement that the name of pineapple's peel for this research is Batu's pineapple, because this pineapple from Batu village. The maturity of pineapple's peel that used in this research are peel of ready fruit of pineapple. It is provided in figure 4.

Beef for this research has gotten from local beef seller in the Jrasah traditional market. Her name is Rum. Part of beef that used in this research is round area. It can be shown in figure 5.



Fig. 3.2 The maturity of pineapple's peel

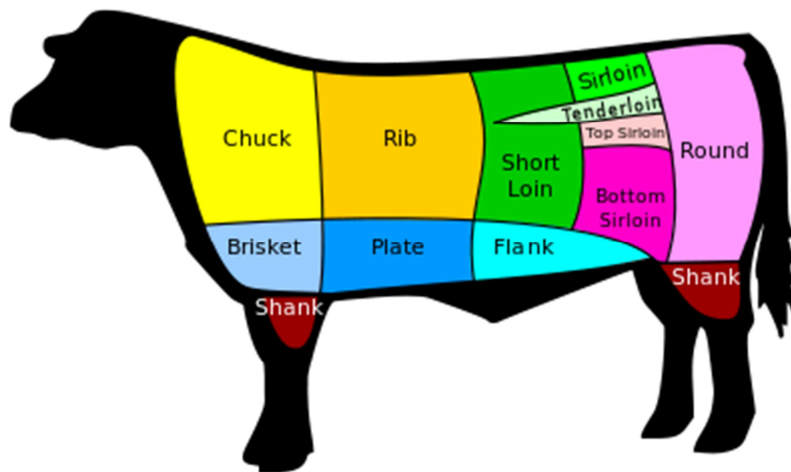


Fig. 3.3 part of beef cutting

Chemistry parameter measurement will be taken in the chemistry laboratory, including pH, Water Holding Capacity (WHC), Cooking loss, and tenderness. Tenderness measurement uses Universal Testing Machine where will be taken in the laboratory of technology of Agriculture Faculty, Gadjah Mada University Yogyakarta. For organoleptic test, parameter measuring are

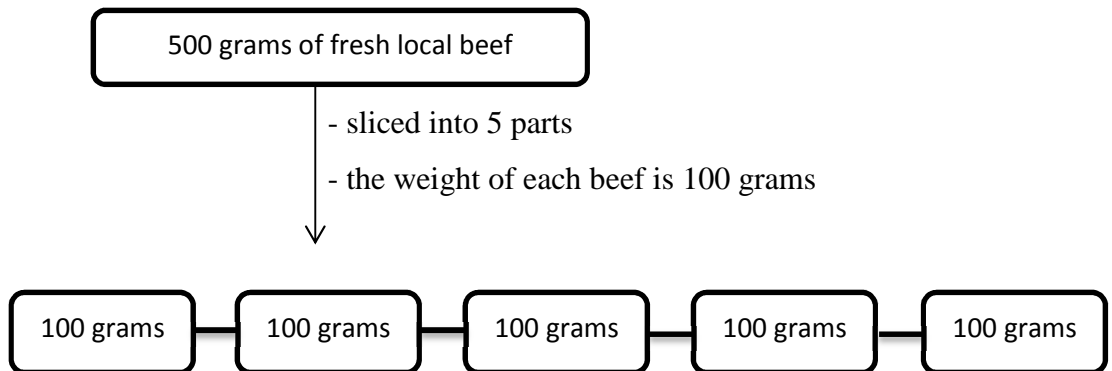
appearance, smell, flavor, tenderness, juiciness, and pleasure with at least 25 panelis.

E. Procedure

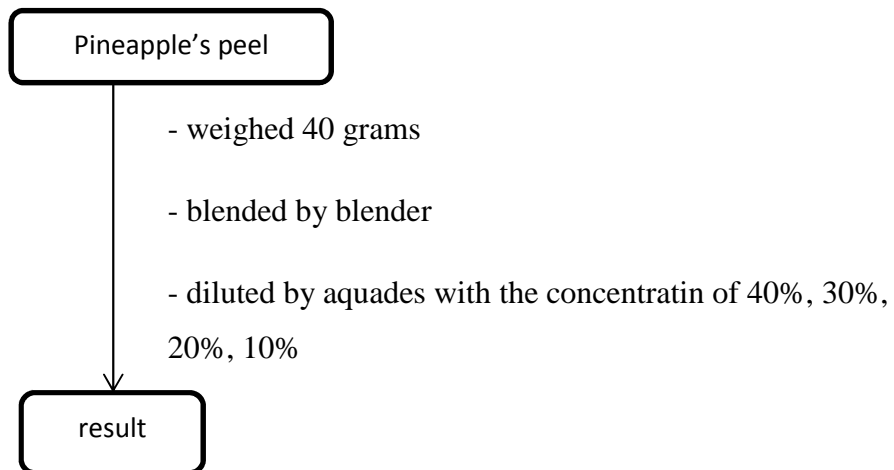
1. Sample preparation

500 grams of fresh beef is sliced into five parts. The weight of each beef is 100 grams. Beef is submerged in bromelain enzyme solution with various concentration (10%, 20%, 30%, 40%) with time control during 90 minutes in the temperature room.

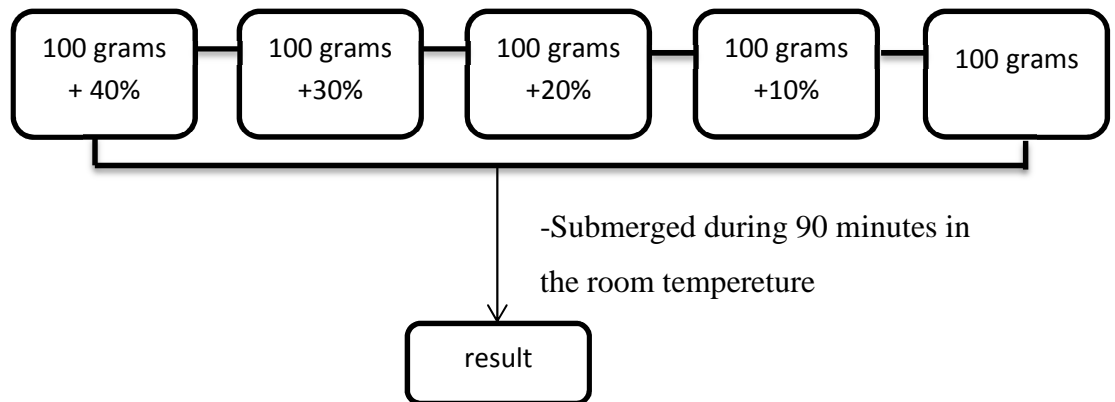
a. Meat



b. Bromelain enzyme solution

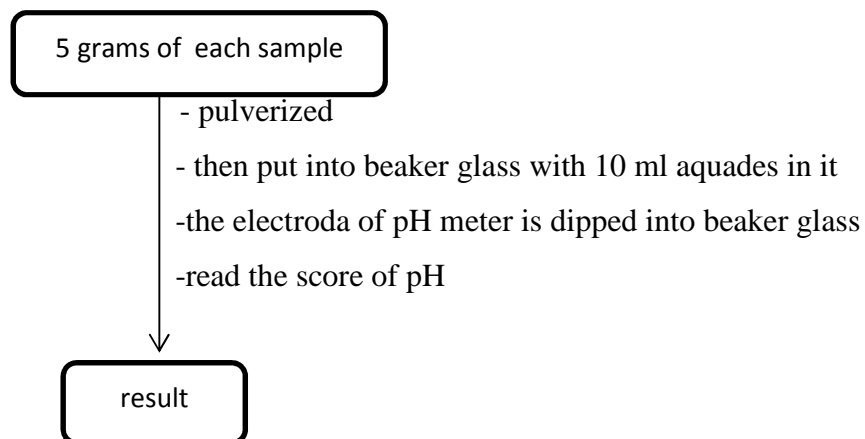


c. Sample



2. pH measurement

5 grams of sample is pulverized, then put into beaker glass with 10 ml aquades in it. The electroda of pH meter is dipped in to beaker glass. Score of pH can be red from monitor of pH meter.



3. Water Holding Capacity (WHC) determination

5 grams of sample is pulverized and put into 10 ml centrifuge tube. Then it is added by 5 ml aquades, mixed, and kept with the temperature of 2-4⁰C. The next process is centrifugation up to 20 minutes with the

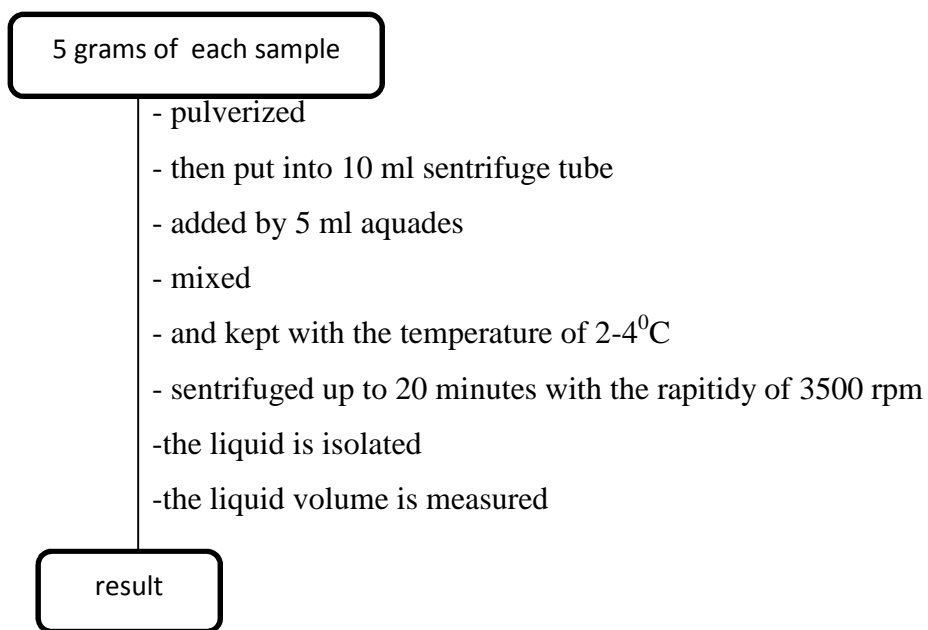
rapidity of 3500 rpm. The liquid is isolated and liquid volume is measured with measuring glass.

$$\text{WHC} = \frac{A - B}{C} \times 100\%$$

A= volume of water that added (ml)

B= Volume of free water (ml)

C= weight of meat (g)



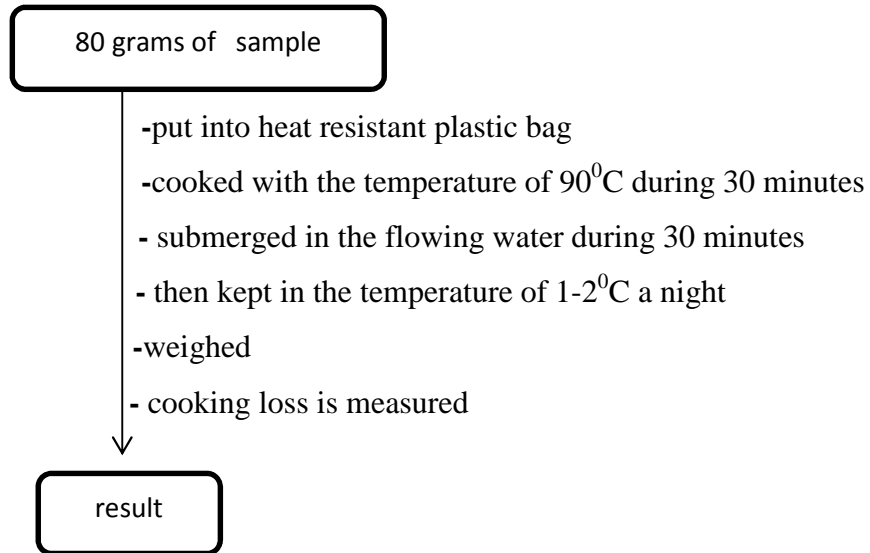
4. Cooking loss determination

Samples are weighed before being cooked. Then samples put into heat resistant plastic bag. After that, meats are cooked with the temperature 90°C during 30 minutes. Samples are submerged in the flowing water during 30 minutes. Then samples are kept in the temperature of 1-2°C a night. Samples are weighed again. The weight has been lost after being cooked are called ‘Cooking loss’. Cooking loss can be determined by:

$$\% \text{ Cooking loss} = \frac{A - B}{A} \times 100 \%$$

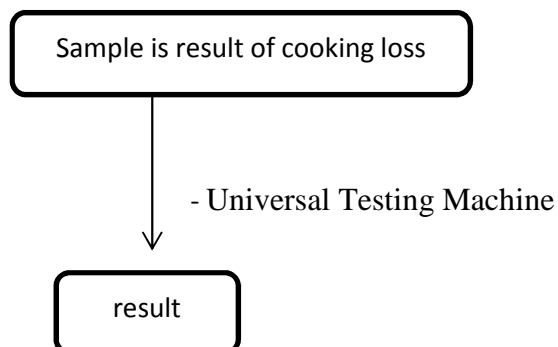
A= weight of meat before cooking

B= weight of meat after cooking



5. Tenderness measurement

Tenderness measurement will measure by Universal Testing Machine will be done in the laboratory of technology of Agriculture faculty, Gadjah Mada University Yogyakarta. To support some tests above, researcher will be done organoleptic test including appearance, smell, flavor, tenderness, juiciness, and pleasure.



F. Techniques of Data Analysis

The data technique analysis of this research is descriptive statistics. Descriptive statistics is the discipline of quantitatively describing the main features of a collection of data.¹ Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.²

¹ Wkipedia, https://en.wikipedia.org/wiki/Descriptive_statistics, accessed on June, 26th 2013

² Anonim, <http://www.socialresearchmethods.net/kb/statdesc.php>, accessed on June, 26th 2013