

The Effect of Soaking Papaya (*Carica Papaya L.*) Juice on Water Content and Aroma of Goat

Ardian Ozzy Wianto¹, and Lusya Risyani Padmaningdiah Mahagiani¹

¹Program Study of Animal Husbandry, Faculty of Science and Technology,
Universitas Muhammadiyah Karanganyar
Corresponding author : ardianozyy1@gmail.com

Abstract

The study aims to determine the effect of the use of unripe papaya juice on the physical quality of lamb, namely water content and aroma. The material used in this study was two-year-old Jawarandu goat meat from the thigh topside as much as 300 grams. The observed parameters are water content and aroma. The treatment tried was T0 : Meat soaked without unripe papaya juice, T1 : Meat soaked in unripe papaya juice concentration 6%, T2 : Meat soaked in unripe papaya juice concentration 8%, T3 : Meat soaked in unripe papaya juice concentration 10%. The results showed that soaking papaya juice with a concentration of 0%-10% had no noticeable effect on the moisture content and aroma of lamb. The conclusion of the study is that the use of unripe papaya essence can be used up to the level of 10% without affecting the moisture content and aroma of the lamb.

Keywords : aroma, papaya, water content

Introduction

Meat consumption in Indonesia from year to year tends to increase, this increase is accompanied by population growth and increasing public knowledge of meat consumption. Meat is a source of animal protein which contains complete amino acids so it is easy to digest (Purnamasari et al., 2013). One of the meat commodities that make a significant contribution to community nutrition is goat meat. However, goat meat has a weakness, especially in aroma and water content. The water content affects the weight of the meat because excess water content can affect the level of quality of the meat, and the aroma of mutton is less liked by the public because some people do not like the aroma of the goat meat, so that if the aroma can be overcome, the level of people's preference for meat will increase. the goat increased.

Young papaya (*Carica papaya L.*) contains 9 grams of crude fiber for every 100 grams of fruit flesh (Duke, 1984). The nutritional content contained in young papaya fruit is vitamin A, vitamin C, calcium, protein, carbohydrates, riboflavin. Young papaya fruit also contains several enzymes, one of which is papain enzyme and kimopapain enzyme which can help in the process of tenderizing meat (Ismanto and Basuki, 2017). Papain enzyme is a protease enzyme that breaks down meat protein in muscle fibers and hydrolyzes it into smaller peptides, so that the meat becomes more tender (Aditama et al., 2017).

This study aims to determine the effect of unripe papaya juice on the physical quality of goat meat, which is seen from the water content and aroma of goat meat.

Materials and Methods

The material used in this study was 300 grams of Jawarandu goat meat on the thigh/topside, young papaya juice. The tools and materials used in this study were portable digital scales, knives, tissue, filter paper, blender, oven, Erlenmeyer glass for soaking meat, tweezers and panelists/respondents for testing the aroma of mutton.

The method used in this research is experimental research method using Completely Randomized Design (CRD), with 4 treatments and 3 replications. Each replication with a size of 5 grams each. The treatment given was giving young papaya juice through immersion with each level of treatment as follows:

T0 : Marinated meat without papaya juice

T1 : Meat soaked papaya juice with a concentration of 6%

T2 : Meat soaked in papaya juice with a concentration of 8%

T3 : Meat is soaked papaya juice with a concentration of 10%

This research method starts from the preparation of the topside of the goat meat by separating the meat from the skin and bones. The preparation of young papaya juice starts from selecting young papaya fruit with dark green skin characteristics, peeling, washing, cutting, blending and filtering to take the juice. Testing Moisture content is determined by the drying method and is expressed as a percentage of sample weight loss. The aroma test uses 20 panelists who are Universitas Muhammadiyah Karanganyar students with an assessment based on the questionnaire that has been provided. Parameters measured were water content and aroma of goat meat.

Results and Discussion

The results of the analysis of variance showed that the use of unripe papaya juice for soaking goat meat on the water content and aroma of the meat gave no significant difference ($P>0.05$). The average results of the water content and aroma of mutton with immersion of young papaya juice with concentrations of 0%, 6%, 8% and 10% can be seen in Table 1

Table 1. The results of analysis of water content data.

Replication	T0	T1	T2	T3
	0%	6%	8%	10%
1	71.99	72.72	72.25	72.40
2	72.12	72.82	71.74	72.35
3	71.62	71.33	72.40	71.79
Average ^{ns}	71.91	72.29	72.13	72.18

Not Significant ($P>0.05$).

Based on Table 1, the use of unripe papaya juice on the moisture content of mutton gave an insignificant different effect ($P>0.05$), this was due to the treatment given, namely the amount of addition of papaya juice with a small water content so it could not affect the water content of the mutton thigh at the age of 2 years, so the compounds from the papaya juice have not been able to affect the water content of the mutton thigh. The average water content in this study was 72.12%. This result is in accordance with the standard of meat moisture content. According to Soeparno (2009) states that the water content of meat in general is 68-80%.

The higher the concentration of utilization of young papaya fruit can cause the water content of the final product to increase. This is due to the increasing number of young papaya fruit that is used, which means the amount of meat protein is also reduced. This condition affects the water binding ability of young papaya fruit so that during the drying process the water is free to evaporate which results in increased water content (Purnomo, et al. 2021).

Moisture content is also affected by the meat tenderization process. During the meat tenderization process there is a reduction in water due to shortening of muscle fibers and the weave of the meat binder (Purnamasari et al., 2013).

The use of unripe papaya juice on the aroma of goat gave no significant difference ($P>0.05$), this indicates that young papaya juice containing papain and kimopapain enzymes produced the same aroma. This is indicated by the average preference level of 2.3 from a scale of 1-4 with a criterion score of 1 for dislike; 2 somewhat disliked; 3 kinda like; 4 likes. According to Ilyas (1983), the aroma changes are caused by the formation of gases or volatile compounds resulting from the decomposition of proteins by proteolytic enzymes into carboxylic acids, sulfide acids, ammonia and other compounds.

Factors that affect the aroma of meat are age of livestock, type of feed, species, sex, fat, race, length of time and conditions of storage of meat after slaughter (Resnawati, 2008). According to Amertaningtyas (2012) that fat content and age greatly affect the aroma. Older cattle have a stronger aroma than younger cattle. Meat that is too old is relatively tough, while too young will have an unattractive aroma (fishy smell). The best meat is not too old and not too young, as well as meat from male livestock has a stronger aroma than female animals (Wiranataya, 2020). The age of the meat used in this study was 2 years old, so the use of young papaya juice on the aroma of mutton showed insignificant results.

Conclusion

The results showed that soaking goat meat using unripe papaya juice up to a concentration of 10% was not able to increase the quality value of goat meat, namely water content and aroma.

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