

THE CONTENT OF LIPIDS IN INTRAMUSCULAR ADIPOSE AS A QUALITY DETERMINANT OF CATTLE MEAT PRODUCT

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Abstract

Generally consumer taste for meat livestock products related to various aspects of the meat itself that is commonly known such as, color, tenderness, flavor, hygiene and product information about the animal ration that is free of antibiotics, hormones and other substances which interfere the health of consumers. This article aims to describe another aspect which supports the consumer's taste that is lipids molecules content in intramuscular adipose tissue. The higher content of intramuscular lipids will further enhance the consumer taste of this meat product. The methods to detect intramuscular fat content in meat cattle are enzymatic method. This evaluation of the development of intramuscular adipose tissue and the quantification of the lipid content can be used as a parameter for determining the quality of meat products of cattle in improving the organoleptic value of livestock meat products in the market.

Keywords: lipids, adipose, intramuscular, cattle meat.

1. Introduction

The access to information about the progress of science and technology, in the field of food derived from animals, have an impact on the selective pattern of the consumer. This is reflected in many developing countries shows that consumers meat livestock products, increasingly understand the quality and selective in consuming the meat from cattle

The need of consumer to animal protein derived from animal meat continues to grow in line with the increase of population in almost of all countries in the world.

Therefore it is important to be required the provision of cattle meat quality and safe for consumer health. This is a concern for livestock meat producers who continually work to improve the quality of meat products to be competed for getting maximum of sale value in market. The competition in the international market encourage suppliers to pay attention the quality of the meat of cattle are marketed, in the face of the free market in the ASEAN region which effectively began in late 2015.

2. Meat Quality Assesment

In many regions, pork became an important source of meat cattle. Meat products in the market of freely contained in various forms, namely in the form of fresh meat, preserved meat, or meat that has been processed and marketed in various packaging.

Meat quality can be assessed from several benchmarks such as color, flavor, and tenderness. High quality meat products will have an impact on the sale price in the market. In addition, the emergence of rules that control the use of hormones and feed additives non-nutritive such as antibiotic because these residues may have a negative impact for consumers. Therefore it is needed farmer's efforts in producing meat quality for consumers, for example by increasing the fat intramuscular content, because the fat content in meat responding flavor for consumers.

According to the Codex Alimentarius Commission (FAO, 1992) has elaborated (besides meat inspection Codes) the Recommended International Code of Hygiene Practice for Fresh Meat (CAC/RCP 111976) and the Recommended International Code of Hygienic Practice for Poultry Processing (CAC/RCP 14-1976) which describe the minimum

requirements of hygiene for meat and poultry production. There are seven targets point from these codes:

a) that the food will not cause infection or intoxication when properly prepared; b) does not contain residues (of pesticides, veterinary drugs and heavy metals) in excess of established limits; c) is free from disease; d) free from obvious contamination; e) free from defects generally recognized as objectionable; f) has been produced under adequate hygienic control; g) fulfils the expectation of the consumer in regard to composition. In point of view of fat quantity contained in meat animals of a species, it depends on various factors such as age, health condition of livestock, the type and amount of feed consumed regularly by animals. Adipose tissue is a tissue composed of adipocytes cells that responsible for the accumulation of body fat mass in animals, including those in the meat tissue. This network Perekembangan impact on the quality of the meat itself.

Several Factors Affecting the Quality of Livestock Meat Products

There are several factors which affecting the animal meat quality as following factors: genetic, nutritive content in feed, quantity of feed consumption, health and hygiene. Brockwell *et al.*, (2014), reported helminthes in meat has high risk to be infected to consumers. This condition is confirmed by Wilson (2008) there are various zoonotic pathogens agents in meat that cause serious illness in consumers, and therefore it is necessary to control the contamination from pathogenic microbes. On the other hand the content of non-biological substances in meat can be a barrier in the quality of the meat. Other substance reported by Mamani *et al* (2009) are antibiotics or others non-nutritive additive. Fat content in meat has a key role in determining the quality of meat because besides associated with flavor and also related to the health of the consumer. It should differentiate between the masse of meat and adipose tissue. When the adipose tissue reaches the level of 'adult' then this adipose began to function in the metabolism of fat concerning the synthesis, hydrolysis and accumulation of fat.

The Fat Content as Determinant Factor in Meat Quality

According to Mourot and Hermier (2001) the intermuscular fat, associated with connective tissues separating median and deep muscular plans, represents 30% of the separable adipose tissues. The content of fat in adipose tissue is a conse-

quence of adipose function to accumulate excess energy in the form of fat in the body that causes the body to become fat (Rumokoy, 2012). Activity of adipose tissue associated with the elements of species, breed livestock, body condition, the type and amount of food eaten (Webb and O'Neill, 2008). Today the amount of intramuscular fat content has been a determinant of quality meat. When viewed from the human health, the saturation of fatty acids. Intermuscular fat, associated with connective tissues separating carcass is merchandised after direct transformation (ham) or after mincing and mixing in the preparation of different lean and fat tissues (Mourot and Hermier, 2001).

Hocquette *et al.*, (2010) has reported that the amount of intramuscular fat (IMF) and its fatty acid composition play major roles in the quality attributes of meats, including sensory properties and healthy considerations. It is generally assumed that IMF content positively influences sensory quality traits, including flavor, juiciness and tenderness of meat or firmness of fish, whereas a low amount of fat induces a less tasty meat. To count the intramuscular fat percentage is a complex trait, and therefore is required to demonstrate significant interactions among treatments, genetics, and IMF% (Bolormaa *et al.*, 2011).

Conclusion

Intramuscular adipose tissue metabolism function determines the amount of meat fat animal products, and became an important factor in terms of quality meat flavor of the product. Most of the fat that accumulates in the amount of intramuscular fat is the result of excess energy contained in food consumed by livestock.

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