

IMPROVING PORK QUALITY

– THE NEED FOR NEW MEASUREMENT METHODS

Susanne Støier, DMRI - Danish Meat Research Institute/Danish Technological Institute,
Maglegaardsvej 2, DK-4000 Roskilde
sst@teknologisk.dk

Objective

The aim of this presentation is to discuss the need for new measurement methods in the meat industry.

Methodology, Results & Discussion

Quality demands

Market and consumer demands towards food quality are increasing. The specific quality demands depend on the market, the customer, the consumer and the use of pork. Identification of quality demands is partly based on consumer and market analysis.

For the consumer eating quality, appearance, nutritional value, ethical issues etc. are of importance. Eating quality is one of the most important characteristics for consumer perception of fresh meat. Eating quality includes taste, tenderness and juiciness. Safety concerns are significant, but according to new studies consumers' decisions to eat meat are becoming more influenced by nutritional and health considerations (Verbeke et al., 2009). People become more and more aware of their health, and therefore the nutritional quality of meat becomes more significant. Characteristics like fat content, fat quality (relative amount of unsaturated fatty acids), iron, vitamin D, protein content and quality are all important. Furthermore, consumers regard high animal welfare standards as an indicator of safe and healthy food of high quality.

For the meat processing industry, which utilizes the raw material from the slaughterhouses for further processing, quality parameters influencing quality and yield of the meat products are important. These parameters are water holding capacity, pH, meat colour, fat/lean ratio, fat thicknesses, fat quality, conformity of the cuts etc.

Differentiation is becoming a key issue - products that in a positive way deviate from standard products are regarded as more attractive, thus more exact specifications are preferred.

The meat industry needs to optimize the production according to the quality parameters mentioned such as yield. The production has to be very effective and determined.

The need for measurement methods

To some extent, the meat producers need to document the quality of their products. Sorting of the raw material takes place with the aim to optimize the production and to ensure that the right raw material/the right cuts are utilized for the right products. Therefore, there is a demand for new measurement methods in the pork industry.

The specifications of the measurement methods depend on the use of the measuring results. Quality measurements can for instance be used for breeding, evaluation of initiatives in the primary production and at the slaughterhouse (changes in feeding, handling of the slaughter pigs, new slaughter and chilling process etc.), payment to the pig producer, classification and sorting, product development, quality assurance, labelling etc.

Specifications for new measurement methods

The consumer and market demands towards meat and meat products have to be defined and specified. It is necessary to find out if the quality demand stated really is a preference parameter or more a matter of attitudes. Then the quality demands have to be converted into measurable quality parameters. After this, the need for new measurement methods can be evaluated and possible methods investigated. The specifications for new measurement methods regarding capacity, robustness, accuracy, cost etc. have to be determined. Furthermore, the variation in the raw material has to be assessed – if quality measurements and sorting should be of relevance, a certain variation in the raw material is needed.

The development and implementation of the measurement method can then take place. If the measuring results are to be used for payment, quality assurance and sorting, access to a measurement method is not sufficient. Solutions regarding logistics and traceability also have to be taken into consideration.

In the presentation, examples covering the use of CT scanning and production of entire males will be discussed. It is now possible to use CT scanning and virtual dissection as an instrumental reference method for the lean meat content in pig carcasses and there are further potential applications of CT scanning. Given the meat industry has to produce entire males in large scale, a method for sorting out the tainted carcasses is needed.

Conclusion

Market and consumer demands towards food quality are increasing. Eating quality is one of the most important characteristics for consumer perception. People become more and more aware of their health, and therefore the nutritional quality of meat becomes more significant. For the meat processing industry, quality parameters influencing quality and yield of the meat products are important. These parameters are water holding capacity, pH, meat colour, fat/lean ratio, fat thicknesses, fat quality, conformity of the cuts etc. The specifications of the measurement methods depend on the use of the measuring results.

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