INTEGRATION OF SENSORY AND CONSUMER DRIVERS IN QUALITY CONTROL TO OPTIMISE PRODUCT PRODUCTION AND DEVELOPMENT IN THE MEAT INDUSTRY ACRONYM: THE CON-SENSE APPROACH

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Introduction

To realise the importance of sensory and consumer evaluation in quality control, one must ask: what are consumers really buying when purchasing food products? They may note nutrition, convenience, and image, but ultimately consumers are buying sensory properties (Muñoz, 2002). Many new products fail in the consumer realm because food production and development does not focus systematically on consumer preferences and perceptions of sensory properties. Thus, there is a need for strategies and methodologies that allow producers and developers in the meat industry to introduce key aspects of consumer expectations and demands into the quality control cycle of the product (Pecore and Kellen, 2002; Weller and Stanton, 2002). The ultimate aim of this project is to develop and implement a quality control strategy in the meat industry for production and development, based on consumer and expert sensory perception of product properties.

Materials and Methods

Thus, we present a holistic sensory/consumer based quality control strategy for food production and development (Figure 1). The strategy involves three distinct phases, where initially, specific products with sensory quality variation issues from an in-house sensory, expert sensory and consumer perspective are identified and analysed, secondly sensory based changes are implemented in product production and their effectiveness in improving quality from a sensory and marketplace consumer perspective is explored, and thirdly, an implementation of the strategy in a product development context is presented, the aim being 'preemptive problem prevention'.

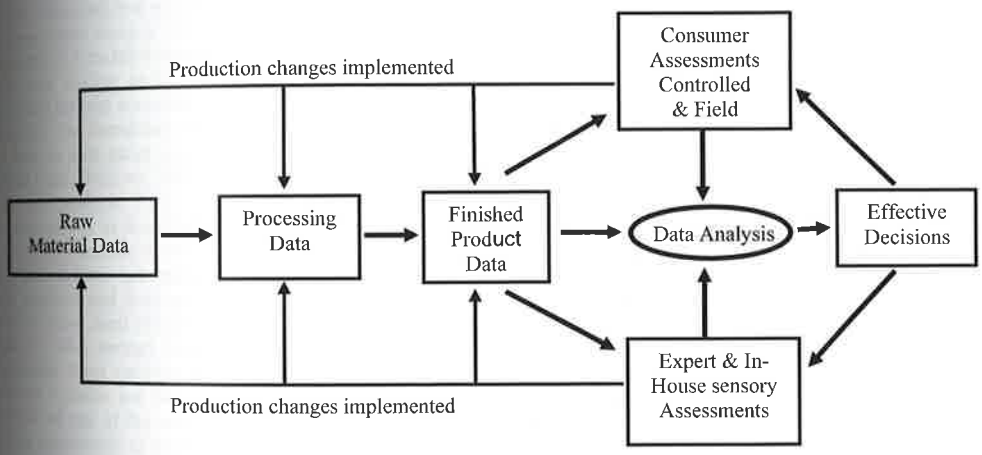

Figure 1: A schematic of the constituent elements and their interaction in the novel integration of sensory and consumer science in quality control to optimise food production and development in the meat industry.

Overall, the approach involves multivariate data analytical modeling of measurements from critical stages in the production chain, and their causal and predictive relationships to the sensory properties of processed, competitive, high quality meat products. Specifically, interactions within and between; raw material storage, processing steps and finished product treatment in relation to sensory measurements are investigated (see Figure 1). The strategy allows for acquisition of information on how qualities that inherently exist in the raw material can be transferred, utilised and preserved in products such that they are consistently of superior quality from a sensory perspective. Critically the approach involves the end-user, such that, when products are produced, manipulated and developed the effects on consumer perception and acceptability are used as key criteria in the implementation of changes in the production process.

Results and Discussion

The constituent elements will add much needed fundamental knowledge in relation to the interaction of the most important consumer quality assessment criteria in food, and allow incorporation of this knowledge into food production and development such that the consumer gains direct benefit through consistent quality improvement.

- The development and implementation of the presented quality strategy is on-going and is being conducted in close collaboration with the Danish meat industry
- The final strategy will lead to much needed fundamental knowledge in relation to the interaction of the most important consumer quality assessment criteria in foods, and will allow incorporation of this information into food production and development such that the consumer gains direct benefit through quality improvement.
- The approach and its determined consumer/sensory critical control points and methodological procedures will be published as guidelines that can be applied to increasing quality in the food production industry per se.

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