بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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Quality of Some Locally Produced Meat Products

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Abstract

Keywords: Preservation, casein, edible coat, meat products

In the first phase of the study, a market survey was carried out on two economic classes of beef luncheon and beef burger to detect the actual problems associated with them. Results revealed that certain bacteriological and chemical criteria set internationally and by the Egyptian organization of standardization were trespassed several times not only in low-cost products as it may be presumed but also in high-cost products. This was declared by the fact that premium luncheon sausages and both premium and economic burger patties had unacceptable mean values of APC, anaerobic bacterial count, and MSG content. Also, the moisture content of all grades of luncheon and premium burger marginally exceeded moisture limits while protein content did not reach the acceptable level in any of the grades of both products. Additionally, the fatty acids profile of both product's grades diverged from normal beef profile suggesting incorporation of low-grade protein sources instead of beef meat which was affirmed by the findings of the histological examination that showed the presence of organs, bone, and cartilage among other tissues. Phase two of the study was experimenting the effect of addition of 600 ppm ascorbic acid + 1000 ppm sorbic acid to casein coat to be applied on experimentally manufactured beef kofta and compared to control samples and plain casein coat. Results revealed that casein coat carrying sorbic and ascorbic acids enhanced preservation capacity of casein coat and improved keeping quality of kofta as emphasized by the results of APC, *Bacillus cereus*, and fecal coliforms counts, in addition to TBARs value which was better in the casein-acids coat. Values of cooking characteristics except for diameter reduction values were significantly higher in casein coat carrying acids followed by plain casein coat and finally control kofta. Moreover, color scores were significantly better in casein and acids coat, and there were either improved sensory or non-significant differences among sensory evaluation scores of either coat samples compared to control adding an extra advantage to casein-based coats since they did not affect the character of flavor, aroma, or appearance of kofta.

Dedication

To my beloved father's soul.

To my mother's soul.

To my dearest sister, and brother.

To my top supporter and partner, Ahmed.

To my adorable son, Omar.

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LIST OF ABBREVIATIONS

a*	Redness
AOAC	Association of Official Analytical Chemists
b*	yellowness
BHI	Brain Heart Infusion
L*	Lightness
MRPM	Mechanically Recovered Poultry Meat
MSG	Monosodium glutamate
TBARs	Thiobarbituric Acid Reactive Substances
TVBN	Total Volatile Base Nitrogen

Contents

INTRODUCTION

INTRODUCTION

Meat is an important food item that is crucial to a healthy diet. High-quality meat is a major requisition for the meat industry **(Joo *et al.*, 2013)**. Besides being a source of major nutritional fractions such as protein and fat, meat and meat products are irreplaceable sources of some micronutrients such as iron, selenium, vitamins A, B12, and folic acid that are not provided by plant-based diets, and if present they will not be of the same bioavailability **(Biesalski, 2005)**. Obtaining wholesome meat products is indeed the intent of all consumers, therefore they are focusing more and more on quality and safety setting higher challenges for the food manufacturers. Despite being an appealing upgrade to this essential food, meat products come with a whole other set of safety issues; on top of them additives allowance; that should grantee safety and uttermost avail of these products. However, whether the consumer obtains the quality expected from meat products available in markets or not is a crucial query as it entails many safety and quality elements. Those elements if ensured to be correctly done along with the processing of meat products, the final product would be presented to the consumer in a healthy and satisfactory condition from all aspects to reach consumer satisfaction which directly affects the marketability of meat products **(Font-i-Furnols and Guerrero, 2014)**.

The production of hygienic meat products is a challenge that industrial sectors have to fulfill. Another matter that the meat products industry has to face is the wide range of available raw materials that affect the quality and acceptance of the final product **(Damez and Clerjo, 2013)**. This is indeed a major issue that challenges the meat processors since the usage of inferior quality raw materials make it inevitable to resort to higher, wrongful amounts of additives like nitrites and monosodium glutamate "MSG" to overcome high microbial loads, off taste and flavor putting consumers at higher risk of many diseases. Methaemoglobinaemia and cancer of different organs were reported due to overconsumption of products containing nitrites (**Aschebrook-Kilfoy *et al.*, 2011)**. Numerous studies reported that MSG had toxic **(Shi *et al.*, 2013)** and genotoxic effects on humans if consumed at high doses **(Khatab and Elhaddad, 2015)**. Thus, the concentrations of all additives used in meat products are