Effect of the coriander powder and its essential oil on the properties of refrigerated and frozen stored beef sausages

By

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B.Sc. Agric. Sci. (Department of Dairy), Fac. Agric., Cairo univ., 2000.

THESIS
Submitted in Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE

In

Agricultural Science
(Food Science)

Department of Food Science
Faculty of Agriculture
Cairo University
Egypt

2014

SUPERVISION SHEET

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DEDICATION

I dedicate this work to whom my heartfelt thanks to my mother and my father ***yousry*** *and my* ***sisters*** *for all of their lovely support they offered along the period of* ***my post-graduation.***

ACKNOWLEDGEMENT

Deep thanks to ***Allah*** for helping me to achieve this work.

I would like to express my deep gratitude and sincere appreciation **to *Dr. Saad Ahmed Hallabo*** Professor of Food Science. Faculty of Agriculture, Cairo University for his supervision guidance through the course of study practical part.

I am greatly indebted to **Dr. *Ahmed Tawfic El–Akel,*** Professor of Food Science. Faculty of Agriculture, Cairo University for his continuous help, his assistance given during the experimental and laboratory work of this study and encouragement throughout this work

My deep thanks to ***Dr. Mahmoud Abdullah Saleh***, Professor of Special Food & Nutrition Dept., Food Technol. Res. Inst., Agric. Res. Center, Giza, Egypt. for his co-operation, and valuable help during this work.

My thanks extended to **Mr. Mohamed Osman** consultant for Nat Essence for Flavours &Fragrances for his cooperation to accomplish the beginning this work

Name of candidate: Yahya Yousry Abdullah Saad **Degree:** M.Sc.

Title of Thesis: Effect of the Coriander Powder and its Essential oil on the Properties of Refrigerated and Frozen Stored Beef Sausages.

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ABSTRACT

The formulation process of the meat products is one of the critical points which plays a highly important role in enhancing nutritional value, physical properties, lipoperoxidation; antimicrobial and antioxidant activities of the final products. Therefore, coriander fruits powder (0.25, 0.50 and 0.75%) and its volatile oil (200, 300, and 400 ppm) were utilized in the processed samples of the tested sausage formulas. The previous parameters were estimated in the processed samples of the tested formulas which stored in a refrigerator for 7 days and at -18 ºC for 5 months in relative to that found in the control sample (an ordinary formulae).

The MS/MC technique examination found that about nine components were classified and identified in the utilized coriander oil. The main component was linalool (76.79%), while thymol represented the lowest amount (0.30%). The total phenolic compounds content in the coriander oil were 350 mg /100g. Coriander essential oil was, also, subjected to the antioxidant activity by using DPPH radical scavenging activity and compared with that of 200 ppm BHT(as a synthetic antioxidant). Different samples of uncooked sausages were chemically analyzed and subsequently the quality attributes were evaluated. Addition of either coriander oil (at 200, 300 and 400 ppm) or coriander powder (0.25, 0.50 and 0.75%) to the prepared sausage samples as a natural preservative was carried out. The estimation were periodically carried out at one month for the frozen samples and at 0, 3 and 7 days for the refrigerated along the storage periods. The physical properties (pH, cooking loss, water holding capacity and plasticity) of the tested samples improved as a result of adding coriander powder or oil utilization. Lipoperoxidation parameters (thiobarbituric acid value , free fatty acids, peroxide value and total volatile bases nitrogen) and total microbial counts either slightly enhanced or still stable due to increasing the additive amounts coriander powder or oil.

Key words: Coriander powder, coriander oil, sausages, antioxidant, antimicrobial, nutritional and physical properties.

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