Suez Canal University
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Quality Improvement of Traditional Egyptian Dried Sausage

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Abstract	Quality survey of market samples of traditional dried sausage kept at room temperature was as follow: **1.Organoleptic and sensory examination:** 100 samples of dry sausage were collected randomly from different street vendors, The normal marble cure appearance was reported in 22% of the examined samples. The over cured discoloration appeared in 58 % of the product samples. The brown coloration is represented by 8 %.Green core detected in 4 %. The mouldy growth noticed on the casing of 11% of samples. While fading discoloration which recorded in 12 % of the samples. The normal fleshy cure flavour was reported in 56 % of samples. The rancid, sour and putrid flavour appeared in 28%, 10% and 6% of samples respectively. **Proximate nutritional composition analysis** The mean value of moisture was 43.7 ± 0.41%.The mean value of protein was 15.34 ± 0.21 % The mean value of fat was 19.99 ± 0.26 % with a maximum of 24.3 % and a minimum of 15.1 %.The mean value of ash was 4.26 ± 0.075 %.The mean value of carbohydrate was 13.56 ±0.33 % The mean sodium chloride content was 3.25 ± 0.05 % The moisture protein ratio (MPR) in the investigated sample was 2.91 ± 0.055.The mean pH value for the examined marketed dry sausage samples was 5.14 ± 0.05, TVB-N value was 14.9 ± 0.44mg /100gm,.The mean TBA value was 0.96 ± 0.037mg malonaldehyde / kg. The average residual nitrite was122.68 ± 2.45 mg/kg. Aerobic plate count average was $2.6 \times 10^5 \pm 4 \times 10^4$ cfu/g. The coliform count average was $5 \times 10^2 \pm 0.62 \times 10^2$ cfu/g. The total halophilic count was less than 10 cfu/gm in all examined samples. Staphylococcus aureus isolated from 24 %of the examined samples. While, 16 % of the surveyed samples were contaminated with *E coli*. **Part two: Experimental:** It was found that celery powder had a substantial effect on some compositional nutritive components such as protein, fat and residual nitrite contents. Also, celery powder had a strong positive effect regarding the TVN and TBA over the storage period compared to the control group and sodium nitrite group. Moreover, the total bacterial counts were reduced significantly in the celery treated group. Celery powder allowed the normal development of sensory attributes in dry fermented sausage which leaded tothe production of naturally cured dry sausage with sensory characteristics equivalent to that prepared with conventional levels of curing salts. Therefore, the replacement of curing salts by vegetable-based curing ingredients is possible and definitely represent a potential benefit on human health.
Keywords	Dried Sausage, protein , fat ,TVN, TBA, Celery , nitrite

Bibliography contents

List of Abbreviations

A.O.A.C	Association of Official Agricultural Chemists
ADI	The acceptable daily intake
APC	The total aerobic plate count
a_w	Water activity
BGLB	Brilliant green lactose bile broth
BHI broth	Brain Heart Infusion Broth
BPA	Baired-Parker medium
CFU	Colony forming unit
CC	Coliform count
CDC	Centers for Disease Control and Prevention
CNC	Coagulase - negative cocci
CP	Pre-converted celery juice powder
DFS	Dried fermented sausage
EC	*E. coli* broth
ECC	*E. coli* count
ECDC	European Centre for Disease Prevention and Control
EFSA	European Food Safety Authority
EMB	Eosine Methylene Blue agar
ESS	Egyptian Standards
EU	European Union
FDA	United States Food and Drug Administration
FAO	Food and Agriculture Organization
FSIS	Food Safety and Inspection Service
GAP	Good Agricultural Practices
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis and Critical Control Point
HC	Hemorrhagic colitis
HUS	Hemolytic uremic syndrome
IARC	The International Agency for Research on Cancer
JECFA	Joint FAO/WHO Expert Committee on Food Additives
LAB	Lactic acid bacteria
LST	Lauryl Sulfate Tryptose broth
MAP	Modified atmosphere packaging
Max	Maximum
MHA	Muller Hinton agar
Min	Minimum
MPN	The most probable number
MPR	Moisture protein ratio

MRLs	Maximum Residue Levels
MSA	Mannitol salt agar
NA	Nitrosamines
ND	Not detected
NOS	Nitric oxide synthesis
$NaNO_2$	Sodium nitrite
$NaNO_3$	Sodium nitrate
ppm	Part per million = mg/kg=µg/g
PTR–MS	Proton Transfer Reaction–Mass Spectrometer
RASFF	EU Rapid Alert System for Food and Feed portal
RPFA	Rabbit plasma fibrinogen agar
RTE	Ready-to-eat
SC	Starter culture
SE	Standard error
SEs	Staphylococcal enterotoxins
STEC	Shiga Toxin-producing *Escherichia coli*
TBA	Thiobarbituric acid
TBARS	Thiobarbituric acid reactive substances
TSI	The Triple Sugar Iron agar
TVB-N	Total volatile bases nitrogen
TVC	Total viable count
US.FDA	Food and drug administration of United States
WHO	World Health Organization
XLD	Xylose Lysine Deoxycholate agar

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