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SUMMARY

For limb, loin and hind limb cuts of Californian and New Zealand White rabbits (both sexes) of a marketable age (2 and 3 months) were used to assess the effect of certain processing methods namely: pressure cooking, roasting and smoking on essential amino acids content in rabbit meat. Essential amino acids assessment was carried out applying thin layer chromatographic technique. Both qualitative and quantitative determinations showed that there were ten essential amino acids namely: lysine, histidine, arginine, methionine, threonine, valine, leucine-isoleucine mixture, phenylalanine and tryptophan present in the two above mentioned studied rabbit strains. The total essential amino acids content was 49.48 and 49.14 g/100 g protein in Californian and New Zealand White rabbit meat; respectively. Slight differences were observed between sexes, however older rabbits contained rather high essential amino acids content. Likewise the hind limb contained the highest levels of essential amino acids, while fore limb recorded the least levels. Essential amino acids content decreased as a result of the studied processing methods. However, the highest losses were recorded in smoking process, while roasting method recorded the lowest losses in the essential amino acids.

INTRODUCTION

The two main African producer of rabbits are Ghana and Egypt (Lebas *et al.*, 1986). The essential amino acid profile of chicken meat is equally confusing and most reports of the amino acids analysis of poultry meat do not adequately identify the tissue, anatomical part, or age of bird (Hamm, 1981). Grau (1971) studying amino acid composition of rabbit, chicken, turkey, mutton and duck concluded that meat generally contained all essential amino acids. Gilka (1975) reported that hydroxyproline content was 89.9 and 140.3 mg/100 g in back and front rabbit meat, respectively. Lee and Cho (1977b) stated that in rabbit meat protein the most limiting amino acid was phenylalanine. Löhle (1985) reported that the essential amino acids content of rabbit meat was the highest among other poultry meats. Gallouin and Ouhayoun (1988) mentioned that the essential amino acids content of rabbit meat protein (g/100 g protein) was: 8.59 leucine, 8.74 lysine, 5.07 threonine, 4.62 valine, 2.61 methionine, 3.97 isoleucine and 3.18 phenylalanine. Improved information about cooking method is needed for increased consumption of rabbit meat (Joh, 1975). Besides, available information on the amino acid composition of rabbit meat is very limited in contrast to that for other poultry meats. Therefore, the present investigation was carried out in an attempt to assess the essential amino acid content of rabbit meat as affected by strain, age, cuts and certain processing methods to fill this gap.

MATERIALS and METHODS:

Sampling: Sixty four California and New Zealand white rabbits (equal number of both sexes) of a marketable age (2 and 3 months) were procured from Al Barari Investment Company farm at Ismailia Governorate; Egypt were used in the present study. The rabbits were slaughtered and the carcasses were skinned, eviscerated, washed and split along the backbone into two halves. One half of each carcass was packaged in polyethylene bag and kept frozen at -20°C until withdrawn for treatment.

Treatments: The investigated rabbit carcasses were divided into four specified groups treated as follows:
a) The first group was analyzed fresh and served as control. b) The second frozen at -20°C group was thawed at

Effect of smoking on essential amino acids content:

The influence of smoking process on essential amino acids are present in table (3). The loss percentage total essential amino acids was 7.76 and 7.18% for the two studied rabbit strains; respectively. The higher loss in smoked meat was mainly recorded in tryptophan 16.19 and 17.51%, while the lowest was noted in lysine 3.10 and 3.43% for Californian and New Zealand White rabbit meat; respectively. The relatively higher decrease in essential amino acids content in smoked meat might be due to the loss during curing and by dripping during smoking process. Such results are in agreement with those previously reported by Hegazy (1989) who reported that the smoking of chicken meat reduced the total essential amino acid content.

CONCLUSION:

In general the lowest loss of the total essential amino acids was found in roasted rabbit meat followed by pressure cooked meat, while the highest loss was recorded in smoked meat.

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