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Arabic Summary

6. CONCLUSION AND RECOMMENDATIONS

From information given by obtained results and discussion it could be concluded that, the sanitary measures adapted during processing "slaughtering, dressing, evisceration, washing, chilling and freezing" handling, packaging, distribution and selling are neglected in some cases. The higher contamination in those cases were indicated by higher total mesophilic bacterial count, total psychrotrophic bacterial count, *Staphylococcus aureus* count, Enterococci count and mould and yeast counts.

In most cases the microbial counts were lower than that recommended by *E.S. (1996)*.

The presence of Enterococci in relatively high incidence indicated unhygienic conditions and faecal pollutions. Also, the presence of *Staph. aureus* have been an indication for personal unhygienic conditions.

Therefore, to improve the quality of the product and to protect consumers from being infected, the following recommendations are to be considered:

- 1- Proper handling of raw rabbit carcasses, which must be taken from healthy flocks with special care of antemortum and postmortum inspections.

- 2- Hands of workers should be clean and free from boils and infected wounds and they should pass a periodical medical examination.
- 3- Proper handling of carcasses during processing and avoid faulty evisceration.
- 4- Water used for cleaning and chilling the rabbit carcasses should be clean and examined bacteriologically once/week.
- 5- Equipments and knives used should be cleaned and sanitized after every use.
- 6- Competing of pets (cats and dogs) and pests (rodents and birds) from processing plants.
- 7- Avoid air drafts in processing plants because air contamination occur if contains much more dust.
- 8- Using of aseptic packaging of finished product should be encouraged to avoid post-processing environmental contamination.
- 9- The rabbit meat should be kept frozen during transportation and sale.
- 10- So, the use of manufacturing practices are recommended in order to decrease the initial bacterial load and other pathogens in rabbit carcasses.
- 11- Educational programs should be imposed for producers and handlers to improve the quality of the product and to ensure maximum safety to the consumers.

7. SUMMARY

Fifty random samples of frozen rabbit carcasses were collected from different shops and supermarkets at different localities of Alexandria governorate.

The samples were transferred directly in an ice box to laboratory where they were examined organoleptically, chemically and microbiologically.

7.1. Organoleptic evaluation

The organoleptic evaluation of frozen rabbit carcasses aimed to detect their odour, taste, consistency and colour.

Regarding the odour, the normal one was the predominating in 88%, while the abnormal odour represented 12%.

On the other hand, the acceptable taste was noticed in 88% of examined frozen rabbit samples, while, the unacceptable was 12%. But, the hard consistency was noticed in 88% of examined frozen rabbit samples, while the slight soft consistency was 8% and soft was 4%. While, the pale rose (normal) colour was noticed in 88% of examined frozen rabbit samples, while the grey colour was 8% of sample and bluish grey colour was 4% of examined samples.

7.2. Chemical evaluation

7.2.1. Determination of pH values

pH values of examined frozen rabbit carcasses were ranged from 5.70 to 6.80 with a mean value 5.969 ± 3.85 .

7.2.2 Determination of total volatile nitrogen T.V.N.

T.V.N. of examined frozen rabbit carcasses was ranged from 13.00 to 20.40 mg/100 gm meat sample with a mean value 15.11 ± 0.285 .

7.3. Microbiological evaluation

7.3.1. Total mesophilic bacterial count

The mean value of total *mesophilic* bacterial count per gram of frozen rabbit meat was $1.4 \times 10^5 \pm 3.5 \times 10^4$ cfu/g and 100% of samples were positive.

7.3.2. Total psychrotrophic bacterial count

The mean value of total *Psychrotrophic* bacterial count per gram of frozen rabbit meat was $2.4 \times 10^4 \pm 6.5 \times 10^3$ cfu/g and 100% of samples were positive.

7.3.3. Total Staphylococci count

The mean value of total *Staphylococci* count was $7.9 \times 10^2 \pm 1.6 \times 10^2$ cfu/g of frozen rabbit meat and 76% of samples were positive and could be identified coagulase positive *Staph.aureus* from 32% of *Staphylococci* isolates.

7.3.4. Enterococci count

⇒ The mean value of *Ent.faecalis* count per gram of frozen rabbit samples was $5.1 \times 10^2 \pm 1.1 \times 10^2$ cfu/g and 68% of samples were positive.

⇒ The mean value of *Ent.faecium* count per gram of frozen rabbit samples was $5.9 \times 10^2 \pm 1.4 \times 10^2$ cfu/g and 52% of samples were positive.

⇒ The mean value of *Ent.intermediate* count per gram of frozen rabbit samples was $4.1 \times 10^2 \pm 8.2 \times 10$ cfu/g and 60% of samples were positive.

7.3.5. Total mould and yeast counts

7.3.5.1 Total mould count

The mean value of total mould count per gram of frozen rabbit samples was $1.7 \times 10^2 \pm 7.3 \times 10$ cfu/g and could identify *Penicillium* spp., *Aspergillus fumigatus*, *Aspergillus nigar*, *Rhizopus* spp., *Cladosporium* spp. and *Mucor* spp. at percentages as 48%, 22%, 16%, 16%, 16% and 14%, respectively.

7.3.5.2 Total yeast count

The mean value of total yeast count per gram of frozen rabbit samples was $3.2 \times 10^3 \pm 9.1 \times 10^2$ cfu/g and 100% of samples were positive.

The hygienic significance of microbial count and public health hazards of the isolated microbes as well as the suggestive hygienic measures to improve the quality of frozen rabbit meat were discussed.