ABSTRACT

Following industrialization of poultry farming, it was necessary to increase the flow rate of slaughter by the gradual introduction of mechanization and automation of various processes then.

In the last few decades the industrial processing of poultry has made considerable progress.

The processing methods used are highly specialized, growing and processing sectors are some of the most advanced in terms of technology used.

Poultry meat in contrast to mammalian muscle tissue is more compact, finer muscle fibers, thin sarcolema finest meat and grain. Connective tissue is reduced, blood irrigation is limited, do not marmorare phenomenon and perselare ..

Poultry answer two modern nutritional guidelines: low calories and rich in essential fatty acids.

Increasing demand for low-calorie diets, easily digestible and strictly control the intake as saturated fatty acids are the most conspicuous trends in the current epoch.

They meet the nutrition recommendations and consumer comfort that requires a good digestibility of food.

The thesis **„Researchs regarding the dynamic of bacterial microflora from fresh, frozen and freezen poultry meat, depending on pH and temperature”** contains 245 pages and is written in chapters IX and is structured according to the criteria in force in two parts.

The first part (chapter I, II and III) summarizes the main bibliographic database of literature regarding respiratory and reproductive syndrome Suin and is "current state of knowledge" and the 2nd (ch. V, VI, VII, VIII) relates to their research.

Each chapter in part 2 has a range of materials and working methods, the results with their discussion and partial conclusions.

In Chapter IX are summarized in the 22 final conclusions, key issues drawn from the investigations.

The tesis is illustrated with a total of 91 figures, 60 tables and 190 is based on bibliographic evidence.

The purpose of the research was to reduce the microbial load of poultry carcasses immediately after evisceration stage, by changing pH and temperature influence.

Research has been based on the following objectives:

● Isolation, identification and determination of altered microflora present in fresh poultry meat, chilled and frozen.

● Isolation, identification and determination of pathogenic microflora present in fresh poultry meat, chilled and frozen.

The influence of acid pH, alkaline pH and temperature on the microflora of alteration present in poultry meat, fresh, chilled and frozen.

● The influence of acid pH, alkaline pH and temperature on pathogenic microflora present in fresh poultry meat, chilled and frozen.

The first 3 chapters are summarized some bibliographic data on production technology for poultry, the health check of poultry and general acărnii microflora of poultry.

Freshness and hygienic status of meat are the first features that induce its consumption. From the standpoint of the consumer and the meat sanitation specialist is essential for it to be prepared and consumed.

In poultry slaughterhouses to process a huge number of animals (thousands of birds / hour) with the same facility, carcasses results are very close, cross contamination is more common.

In the last two decades have evolved new transmitted through food pathogens such as Salmonella enteritidis, Campylobacter coli and Campylobacter jejuni, Shiga toxin-producing Escherihia coli, Listeria monocytogenes, Yersinia enterocolitica.

From the results obtained is that the carcasses of poultry obsevă predominant aerobic conditioning pathogenic bacterial flora represented by Escherichia coli, Proteus vulgaris and Stapylococcus aureus, but potentially pathogenic germs with epidemiological important.

The slaughter of poultry carcasses during processing may suffer contamination throughout the technological flow, having a role here imporatnt technology used. The most frequently encountered contamination in the slaughterhouse and referred to specialists is cross-contamination, but a step in conatminare is gutting imporatntă where accidents can occur (breaking and pouring the contents of the digestive tract on the housing).

Avoid contamination of poultry carcasses is one of the biggest challenges in poultry slaughter technology. A substantial reduction could be achieved by microbial decontamination with lactic acid solution 1% or 2% acetic acid solution 1% or 2% trisodium phosphate solution or 10%.

Based on the results obtained might support that process the carcasses washing is ineffective in terms of reducing microbiological hazards. The interpretation of results should we consider that the removal of microorganisms from the skeleton is affected by the phenomenon of their adhesion to the surface of carcasses.

Reduction log carcasses were chilled for total aerobic plate count mezofili of 0.23 logUFC / ml for Escherichia coli of 0.78 logUFC / ml and 1.79 for *Proteus spp* logUFC / ml .

Reduction log carcasses were frozen for total aerobic plate count mezofili of 1.07 logUFC / ml for Escherichia coli of 0.79 logUFC / ml and 2.19 for *Proteus spp* logUFC / ml.

Research on the isolation, identification and determination of the pathogenic microflora of poultry carcasses we found a diverse microflora with potential implications for foodborne encountered in humans. The presence of species on the surface of fresh carcasses of *Salmonella enteritidis* was the rate of 9% and after 72h frozen was reduced to 5%. Reduce the percentage of carcasses frozen for one month was from 7% to 1%.

Fresh poultry carcasses for species *Campylobacter jejuni* revealed a 20%, 7% for the chilled and frozen to 3%. *Staphylococcus aureus* was present on caracasele chilled in percentage of 9%, while those frozen by 4%.

Listeria monocytogenes he was not isolated from frozen carcasses, nor did the species *Yersinia enterocolitica*

Percentage currently carcasses chilled for *Listeria monocytogenes* was 10% and 7% for *Yersinia enterocolitica* species.

Potential sources of infection with *Salmonella spp*, *Campylobacter* to humans are the carcasses of poultry. In the avian, the most important pathogens in poultry meat are *Salmonella spp* and *Campylobacter coli* and *jejuni*. In order to master some hazardous microorganisms for the consumer (Salmonella spp, Campylobacter spp, etc.) prevention and control measures must be applied from farm profile.

Poultry meat can represent an important source of human infection with *Salmonella spp. Salmonella enteritidis* and *Salmonella typhimurium* are the most commonly reported serovars isolated from poultry, poultry meat products and human cases of salmonellosis.

The decontamination of poultry carcasses can help to reduce human foodborne infections.

Concentration of the acid in the range of 1−2 % is generally accepted. The acid treatment may be done at different places of the slaughterhouse.

Lactic acid and acetic acid is commonly used in food industry due to their strong antimicrobial effect and lack of toxcitate for humans.

The influence of acid decontamination on the appearance (colour) of carcass surface is differently assessed in the literature. The information about colour changes affected those that no changes occur.

Bacterial incidents from *Salmonella* gender in/on fowl is variable from one geographical area to another one, reported data alternates between 4 and 100%. The incidence is major influenced by factors such as growth, process and climate conditions. There are countries (Sweden) where fowl is *Salmonella* free, stage reached afterwards applying some governmental control programs and measurements applied by fowl breeders and food processor.

In slaughterhouses is processed a high number of birds (thousands birds/hour) with the same installation resulted carcasses being very close, crossed contamination being more frequently.

Lactic acid is the best known organic acid in nature, being commonly used in the meat processing, its antimicrobial activity being particularly severe at concentrations of 1% in Gram negative bacteria.

Log reduction beig dropped frequently in what features the sterilizing effect.

Final washing of carcasses with 1% acetic acid solution has greatly reduced the number of microorganisms on the carcasses by pH effect exerted by 2.8.

Final washing of carcasses with 10% trisodium phosphate solution reduced the number of microorganisms on the carcasses by the effect exerted by pH 11.5 but not much from the original contamination

The combined effect of low temperatures (below 50C) and environmental acidity (pH 2.5), proved to be highly bacteriostatic against bacterial species monitored by us, namely E. coli.

After treatment with lactic acid solution 1% and 2% the number of positive carcasses decreased from fresh and chilled and the frozen carcasses Proteus species was not identified.

The results show a rate of 14.06% of fresh meat from carcasses chilled 7.8% (4^0C) and carcasses free of Salmonella spp after freezing (-18^0C).

Carcasses treated with lactic acid and acetic acid 2% 2% have not developed on their surface or a strain of Salmonella enteritidis, values for carcasses treated with lactic acid and acetic acid 1% was maintained at values below 1 log.UFC / 25g neck skin

.Efficiency of lactic acid was found to be better for the species Campylobacter jejuni, only acetic acid after the treatment, where we found 1 positive carcasses. Strains of Yersinia enterocolitica, Listeria monocytogenes, Staphylococcus aureus have similar behavior in case of change of pH.

The pH value of meat plays an important role in starting the process of processes of meat. The meat has a pH of 6.5 to 7 positive development of rotting bacteria Microorganisms can not multiply when frozen and gradually lose their enzyme systems viabilitatae but are relatively resistant and remain active until the negative temperature-30^0C.

Trisodium phosphate used in the food industry as additives, antimicrobial action being particularly severe in the concentration of 10%, achieving a pH of 11.5. Trisodium phosphate inhibits the enzyme and inhibits enzyme activity in bacteria.

The reduction was significant for log total bacterial count and E. coli, and the Proteus was drastic.

Of all strains isolated from poultry carcasses highest resistance to alkaline pH was seen in Listeria monocytogenes. Sensitivity was highest in strains deYersinia enterocolitica, Campylobacter jejuni, Salmonella enteritidis.

Compared to isolates from the carcasses processed in the slaughterhouse used ATCC strains showed an increased sensitivity to acid pH, but also to the alkalin.