

# BACTERIOLOGICAL EXAMINATION OF MEAT OF WILD BOARS SHOT DOWN IN PIEDMONT AND LIGURIA, ITALY

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**Abstract:** Muscle samples from 71 wild boars shot down were taken within 24 h post mortem for bacteriological determination. Total viable bacteria, Enterobacteriaceae, Enterococci, Staphylococci, Clostridia, *Campylobacter* and *Salmonella* were enumerated. In inner parts of meat the total bacterial count was slightly lower than that of surface samples, varying from  $10^3$  to  $10^4$  cfu/g.

However, remarkable amounts of Enterobacteriaceae, Enterococci and coagulase-positive Staphylococci were found both on the surface and in inner parts of a large part of the meat samples.

No *Campylobacter* was detected in any case, whereas strains of *Salmonella* were found on the surface and in inner parts of 3 samples.

An improvement of sanitary inspection of such game wild boars intended to private consumption should be useful. Bleeding of animals as soon as possible after death can be effective means to avoid the presence of infection or toxigenic microorganisms in game meat.

**Keywords:** Wild boar, *Sus scrofa*, Suidae, Hunting, Microbiological analyses.

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## 1. Introduction

It was calculated that in 1988 lived in Italy nearly 1,5 million wild boars and this number has increased in the following years. Therefore, for some years now, hunting boars has increased the numbers of animals shot down too. Once killed, in general the animals are bled, eviscerated and skinned in precarious hygienic conditions.

Their meat is used to prepare both fresh or cured meat products with possible health risks for consumers. Since wild boars have been examined by many Authors as reservoir of pathogenic bacteria in offals (Kniewallner, 1969; Bromel & Zettel, 1973; De Boer *et al.*, 1983; Chiesa *et al.*, 1987) and meat (Mignone *et al.*, 1990), we performed microbiological analyses with the aim to control the microbiological quality of this kind of meat from boars shot down in Piedmont and Liguria.

## 2. Material and methods

Continuing a previous research (Mignone *et al.*, 1990) we examined 71 samples of Wild boar's muscles taken from the neck, determining their microflora on the surface and on the deep. Two different groups were considered: Group A: 41 samples from boars shot down and immediately bled, skinned and eviscerated in the open air; Group B: 30 muscle samples of animals shot down and bled outdoors, but skinned and eviscerated in a closed room with a

good hygienic care. Microbiological analyses included the determination of Total viable count, Enterobacteria, Enterococci, enteropathogenic Staphylococci, sulphite-reducing *Clostridia*, *Campylobacter* spp. and *Salmonella* spp..

## 3. Results and discussion

The results obtained were summarized in Figures 1 and 2. No *Campylobacter* was detected in any case, whereas 3 strains of *Salmonella* were isolated on the surface and in the deep tissue of 3 different samples. That leads us to conclude that the bacteria diffused into the blood stream during the agony of the animals. High amounts of coliforms were found on the surface of the muscles examined as well as in their inner parts. In about one third of the samples examined in the deep (71% of the group A and 83% of the group B) charges of coagulase-positive Staphylococci ranging between  $10^3$  and  $10^4$  cfu/g were detected.

It can be concluded that the environmental conditions in which the animals are eviscerated and skinned are not so important to affect unfavourably the wholesomeness of meat. On the contrary it is important that the animals are bled as soon as possible and then skinned and eviscerated at the latest within 6 hours after the death. It would be desirable that this kind of meat might be regularly inspected by a special veterinary service like that is pre-

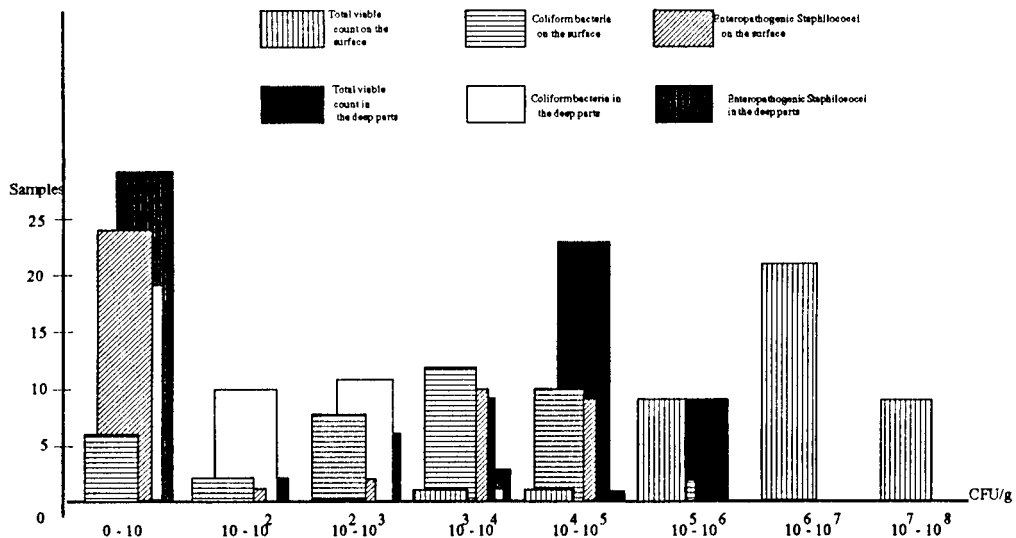


Figure 1: Results of total viable count, coliform bacteria and enteropathogenic Staphylococci in group A

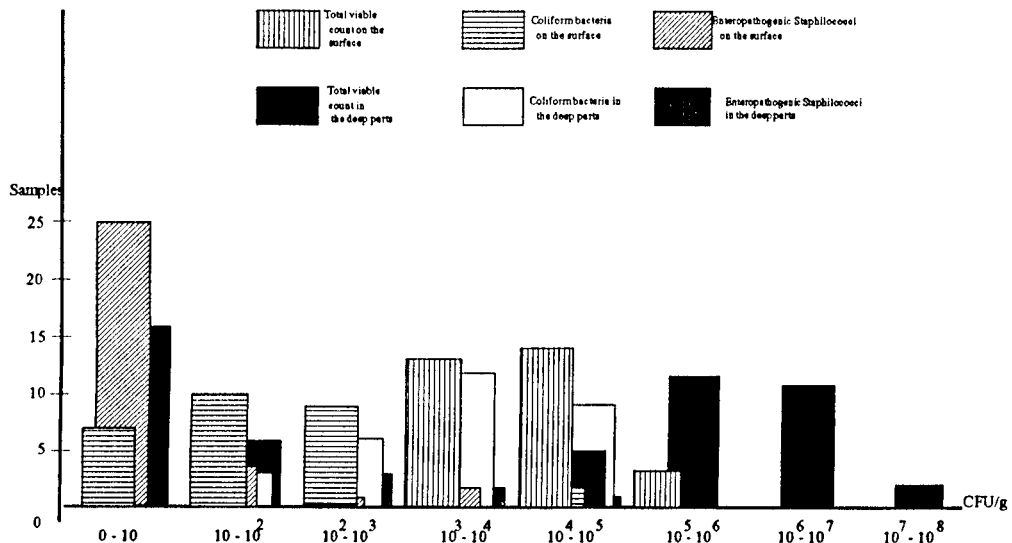


Figure 2: Results of total viable count, coliform bacteria and enteropathogenic Staphylococci in group B

scribed by Italian law (D.M. 16.10.1986 and D. Lvo. 559/1992).

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