

40

SEVENTH MEETING OF EUROPEAN MEAT RESEARCH WORKERS
WARSZAWA, SEPTEMBER 18th to 22nd ,1961

COMPARATIVE INVESTIGATION UPON THE INFLUENCE OF
THERMAL TREATMENT/THERMOSTATIC TEST/ AND COLD STORAGE
ON THE BACTERIOLOGICAL STATE OF PASTEURIZED HAM

by

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Comparative investigations upon the influence of thermal
treatment /thermostatic test/ and cold storage on the
bacteriological state of pasteurized ham.

The laboratory control of canned hams in Poland takes also among others into account a 3 days thermostatic test. If the investigated hams after the thermostatic test do not show unfavourable organoleptic features nor pathogenic microorganisms and the content of nonpathogenic microorganisms does not exceed the allowed limits then the product is regarded as fit for human consumption and storage. Till now it is agreed that a product, after the thermostatic test, is positively evaluated it should not cause any reservations after a 6 months cold storage too.

The aim of our experiments was to compare the bacteriological state of hams, which after their production have been subjected to a 3 days thermostatic test and hams of the same lot stored 6 months in a cooling-house.

Experimental material and methodology of investigations.

The experimental material consisted of 30 pairs /left and right/ pasteurized canned ham originating from healthy animals and produced precisely under the same technological conditions. The left parts were after their production subjected to a three days thermostatic test and then after cooling investigated bacteriologically.

- 2 -

The right ones were after their production placed for 6 months in a cooling-house at a temperature of about 4° C and then investigated bacteriologically in the same way as the left ones.

In bacteriological investigations of all hams the following variances have been adopted:

A. Unhomogenized samples.

1. The bacterioscopic preparation /pressed/ was coloured according to the method of Gram
2. Pressed inoculation on common agar
3. Inoculation on the following media: SF /Leiffson/ broth with bile, broth with the addition of 8% of NaCl, Hain's Medium with sodium azide, Wrzosek's medium, stick agar with glucose, natural /ham/ medium according to Zajęczkowski and also natural medium according to Zajęczkowski consolidated with gelatine.

B. Homogenized samples/ 11,000 rot./per minute/.

1. Inoculation of the homogenized material by plating on common agar from dilutions 1:10, 1:50, 1:100 and 1:500
2. Inoculation from the afore-mentioned dilutions on Hain's medium with sodium azide
3. The same on the Wrzosek medium
4. The same on the media named in part A. point 3.

R e s u l t s .

All investigated hams showed correct organoleptic features. The contents of microorganisms found both in bacterioscopic /pressed/ preparations from inoculated hams as well as from hams stored in cooling-houses were approximately the same. The viable bacte-

- 5 -

rial flora found in the investigated hams turned out to be sporeforming nonpathogenic aerobic bacilli and microorganisms of the enterococcus group. The content of the sporeforming aerobic bacillus was less in hams stored for 6 months in a cooling-house than in hams from the same pigs subjected to a thermostatic test. On the other hand it was found that the content of microorganisms of the enterococcus group was significantly greater in stored hams than in incubated ones.

Conclusions:

1. The bacteriological state of pasteurized canned hams differed in our experiments from the state of hams acquired from the same pigs stored for 6 months in a cooling-house
2. It was shown that during the storage for 6 months the content of sporeforming aerobic bacillus has diminished in the investigated product whereas the content of microorganisms of the enterococcus group significantly increased in comparison with the bacteriological state of hams which, after their production, have been subjected to a thermostatic /test.