INTRODUCTION

A raw and dried meat product are made of meat and pork and/or beef fat mixed with spices and additives, stuffed in natural or artificial gut and subjected to a maturing and drying process. This kind of product emerged because of man-needs to preserve food through a drying process and low pH. Being stuffed, meat was isolated from outer microorganism or contamination.

STAGES OF PREPARING A RAW AND DRIED MEAT PRODUCT ARE:

1- Receipt of raw materials.
2- Meat and fat cold preservation
3- Mincing
4- Mixing and kneading, spices addition, salt, approved additives, starters and sugar
5- Stuffing (+ Penicillium chrysogenum layer and maturation process).
6- Drying
7- Packaging
8- Expedition.

OBJECTIVE

The objective of this study is to evaluate the hygienic quality, the fungal surface development and the organoleptic characteristics of sums during their shelf life.

MATERIALS AND METHODS

The 26 sums were obtained from a meat product industry in Barcelona. One half of them were unpacked (batch A) and the other half were packed (batch B).

<table>
<thead>
<tr>
<th>Day</th>
<th>Batch A</th>
<th>Batch B</th>
</tr>
</thead>
<tbody>
<tr>
<td>23-March</td>
<td>A1 A2</td>
<td>B1 B2</td>
</tr>
<tr>
<td>7-April</td>
<td>A3 A4</td>
<td>B3 B4</td>
</tr>
<tr>
<td>20-April</td>
<td>A5 A6</td>
<td>B5 B6</td>
</tr>
<tr>
<td>25-may</td>
<td>A7 A8</td>
<td>B7 B8</td>
</tr>
</tbody>
</table>

Table 1: Timetable of analysis

METHODS:

- **Organoleptic analysis**: It was a simple organoleptic analysis in order to evaluate the odour, colour, fungal growth on the surface and defects in its appearance.

- **pH evolution**: To determine the pH of each sample, 5 g of the sample were weighed out and diluted in 50 ml of distilled water. The pH was measured with a pH Micro pH 2000.

- **Microbiological analysis**:
  - Salmonella spp.
  - Listeria monocytogenes
  - Escherichia coli
  - Clostridium perfringens
  - Staphylococcus aureus
  - Fungus

RESULTS AND DISCUSSION

Table 2 represents organoleptic analysis results.

As shown, main modifications appeared around day 30. It can be observed that sums packed and stored at room temperature (B1, B3, B5) have the worst organoleptic characteristics. Sums B2, B4 and B6, packed and stored under cold conditions, their organoleptic changes have appeared later than the other samples from batch B (at room temperature).

Surface flora had an upward trend, only at these sums stored at room temperature during first fifteen days of drying. Also, environment which had higher temperature and relative humidity caused a bigger surface flora growth.

Table 3: Evolution of pH

Table 4: Microbiological analysis

CONCLUSION

- Sums could be considered as products with an acceptable microbiological quality.
- In samples checked, any of pathogen microorganisms have been detected.
- Surface culture addition during the production of these meat products helps to control the presence of undesirable microbiota.
- Results of analyses in this study show that fungal contamination different from Penicillium chrysogenum has not been detected.
- This study demonstrates that the packed and stored under cold conditions sum has the best organoleptic characteristic during a longer period of time, with the same firmness and favourable conditions of surface flora.
- Packed and stored at room-temperature sum is not recommended, although the firmness of the product would not change with these characteristics.