RESEARCH ON THE CHANGES OBSERVED IN THE LARD DURING PROCESSING

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Abstract
The mobilization (degradation) of fats in the adipose tissue, given the action of adenylate-cyclase is inhibited by insulin in case of proper feeding, as the insulin released by the pancreas prevents the mobilization of lipids, while the excess of fats and carbohydrates is incorporated in the "pool of triaglycerols from the adipose tissue (adipocytes)

Key words: animal fats, rancid fats, oxidation of lipids

INTRODUCTION

The lipolysis of animal fats, during the storage of fatty tissues, may take place under the influence of lipolytic enzymes, secreted by microorganisms that prefer cold, the consequences of lipolysis being: the increase in the acidity of the fat, higher oxidability as the released unsaturated fatty acids are more easily degraded by auto-oxidation (aldehyde rancidity). Rancid fats are not consumable and therefore act as an economic loss, being removed from the food chain.

The oxidation of lipids (reaction between the atmospheric oxygen and lipids) is one of the main causes of meat deterioration, along with the action of temperature while meat is preserved by refrigeration or freezing. In most cases, lipid oxidation decreases the quality of food, but there are some cases where quality may be improved.

MATERIAL AND METHOD

In the experimental part, referring to lipid alteration, we shall look at the peroxidation of lipids from lard during its processing.

The experiment used as working material the lard that was being sold at the time of the experiment, of the first quality, packed in plastic boxes of 500g, for which determinations were made on assessing the quality of fats in terms of freshness status, before processing and after processing, in accordance with the working protocol. Roasting was performed in a fryer, heated up to 145-155 ° C, on both sides of the unsalted and flavorless piece

of meat. After each frying fat was left to cool down and samples were taken for analysis.

We have observed the influence of successive frying - in two stages - for different types of meat, upon the degree of peroxidation, each frying fat samples being taken in order to determine the acidity and the degree of peroxidation.

The acidity of the lard samples was determined as follows:

Commercial lard, first quality - before roasting

Sample-M

Lard after an initial roasting of the different types of meat:

- P1 - lard in which pork neck was fried;
- P3 - the fat in which chicken breast was fried;
- P5 - lard in which breaded chicken breast was fried;

Lard after a second roasting:¬

- P2 - lard used to fry the pork neck twice;
- P4 - Lard used to fry chicken breast twice;
- P6 - Lard used to fry breaded chicken breast twice.

Peroxide value was determined for samples of lard in the following conditions:

- Commercial lard, first quality - before roasting - Sample-M
- Lard after an initial roasting¬ of the different types of meat:
  - P1 - lard in which pork neck was fried;
  - P3 - the fat in which chicken breast was fried;
  - P5 - lard in which breaded chicken breast was fried;

  Lard after a second roasting:¬
  - P2 - lard used to fry the pork neck twice;
  - P4 - Lard used to fry chicken breast twice;
  - P6 - Lard used to fry breaded chicken breast twice;

RESULTS AND DISCUSSION

The results are summarized in the table below.

Table 1

Values of acidity indices (IA in % oleic acid) and of peroxide (IP in % I2) for lard

Fried product type	Lard before frying		Lard after the first frying		Lard after the second frying	
	IA	IP	IA	IP	IA	IP
Pork neck	0,846	0,03	1,128	0,05	1,128	0,1
Chicken breast			1,128	0,06	1,41	0,1
Breaded chicken breast			0,846	0,03	1,41	0,07

In the case of the pork fat, of the first quality a maximum value of 0.5% for acidity is allowed; in our case the value was of 0.8%, which leads to the idea that fat was of the second quality, or the value of acidity exceeds the threshold for this higher quality.

As determined for the peroxide value (0.03% h), commercial lard may be classified among the very fresh fats.

CONCLUSIONS

1. Lard types, resulting after the first fat frying of pork and chicken, have similar values for both IA and IP;

2. In frying breaded chicken breast, we can see that, after a first roasting, fat does not present any degree of degradation, probably due to the low water content of samples used for the pane type frying;

3. Acid value remains at the same value after the second roasting in the case of the pig meat, but in other cases it increases significantly;

4. Peroxide value after the second frying increases for all types of frying, but remains , for the pane-type, within the accepted limits, while in the other two cases it rises beyond the admitted values, which requires changing the fat;

5. The study concerning the peroxidation of pig fat for different types of frying, indicates that this depends on the type of product that is being roasted and on the initial values of the fat in which the products are roasted.

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