

## QUALITY EVALUATION USING BENCHMARKING ANALYSIS OF MEAT PRODUCTS RETAILED IN ROMANIA

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**Abstract:** *Benchmarking it is used to compare the processes and performance of products and services with those of leaders recognized as such, at a moment, in the marketplace. It facilitates the identification of goals as well as the setting of priorities in the elaboration of plans, in order to increase the competitive advantage of the organization. For the present benchmarking analysis we analyzed the characteristics of three meat products comercialized by Auchan Romania, products of great interest to Romanian consumers, from three relevant processors, respectively Summer salami (CRIS-TIM, FOX and ALDIS processors), Cabanos sausages (ALDIS, CAROLI and ELIT processors) and Chicken Frankfurter sausages (PERFECT POULTRY, CAROLI and ALDIS processors).*

**Key words:** *quality, evaluation, benchmarking, meat products*

### INTRODUCTION

The particular importance that is given to benchmarking in retail of the meat products is confirmed by the fact that it has been included among the quality improvement tools in the international standard ISO 9004.[3,17] Thus, the following elements are relevant for defining benchmarking: is a permanent process of evaluating the performance of the organization, compared to those of leaders recognized as such, at some point in the market; is a process of evaluating the effectiveness of leaders in achieving results so that those practices that ensure the achievement can be determined that effectiveness; it may also be applied to the organisation's processes, procedures, products and services; considers reporting to leaders recognized as such in the field, whether or not they may be direct competitors of the organization; it is applied in order to identify best practices, which allow to improve the performance of the organization, so as to ensure the full satisfaction of customer requirements; involves cooperation with the organization established as a reference.[4,6]

### MATERIALS AND METHODS

Benchmarking it is used to compare the processes and performance of products and services with those of leaders recognized as such at a given time in the marketplace. It facilitates the identification of goals as well as the setting of priorities in the elaboration of plans, in order to increase the competitive advantage of the organization. [1,2]

This method was first applied in the US photocopying industry by Xerox in the late 1970s as a reaction to the sharp decline in its market share. Subsequently, benchmarking acquired a key position in the process of implementing total quality management, on account of which Xerox managed, in a relatively short period of time, not only to regain its market share, but also to continue to obtain performance, special in business. [7,13]

Leveraging this experience, a number of organizations are currently applying with favorable results, the benchmarking method. The Massachusetts Institute of Technology's Industrial Productivity Commission says in a report that using this method has been one of the key factors in ensuring the success of the best performing organizations in recent years.

**RESEARCH RESULTS**

For the benchmarking analysis we analyzed the characteristics of three meat products (Tables 1, 2 and 3), products of great interest in Romania, from three relevant processors, respectively:

- Summer salami - CRIS-TIM, FOX and ALDIS;
- Cabanos sausages - ALDIS, CAROLI and ELIT ;
- Chicken Fraknfurter sausages - PERFECT POULTRY, CAROLI and ALDIS.

**Table 1.**

**Characteristics of SUMMER SLAMI assortments depending on processors**

<b>SPECIFICATIONS</b>	<b>CRIS-TIM</b>	<b>FOX</b>	<b>ALDIS</b>
<b>kJ per 100g</b>	1504	1564	1679
<b>kcal per 100g</b>	364	378	406
<b>Fats (g)</b>	33.2	Not specified	37.0
<b>of which saturated fatty acids (g)</b>	13.8	Not specified	18.0
<b>Carbohydrates (g)</b>	0.8	1.63	2.0
<b>of which sugars (g)</b>	0.8	Not specified	0.5
<b>Salt (g)</b>	2.32	Not specified	2.8
<b>Fiber (g)</b>		0.97	0.5
<b>Protein (g)</b>	15.4	16.81	16.0
<b>ingredients</b>	Pork (75%), beef (15%), bacon, water, salt, pork animal protein, stabilizers (diphosphates), antioxidant (ascorbic acid), dextrose, natural flavors, spices, dye (carmine), garlic, sweet paprika, natural smoke aroma, preservative (sodium nitrite). The product may contain traces of: milk, lactose, celery, mustard.	Pork (from EU); pork goose; non-genetically modified soy vegetable protein; animal protein; rind; the water; salt; stabilizers: diphosphates, triphosphates, polyphosphates; natural spices and aromas; smoke aroma; sugars: dextrose, maltodextrin; flavor enhancer: monosodium glutamate; antioxidants: ascorbic acid, potassium lactate; preservatives: sodium nitrite, sodium diacetate; dye: carmine.	Pork, beef, bacon, soy protein, water, salt, spices, flavors, seasonings, stabilizers: sodium polyphosphates, thickener: carrageenan, acidity corrector: glucono-delta-lactone, antioxidants: ascorbic acid, sodium erysorbate, aroma enhancer: monosodium glutamate, preservative: sodium nitrite, dye: carmine
<b>Other features</b>	Natural beech wood smoke was used to smoke this product	Not specified	Inedible articular membrane
<b>Allergens description</b>	Not specified	Not specified	Soy
<b>Gluten free</b>	Yes	Not specified	Not specified
<b>Sugar free</b>	Yes	Not specified	Not specified
<b>Terms of validity</b>	To be consumed preferably before: the date written on the package	To be consumed preferably before: see the date written on the package	To be consumed preferably before: see the date written on the package
<b>Storage / storage conditions</b>	5 - 8 degrees C	Store at a temperature between 2 and 8 degrees C.	Store at a temperature between 10 and 12 degrees C.
<b>Method of processing</b>	Boiled and double smoked meat product	Not specified	Boiled product, double smoked and dried

Source: [www.auchan.ro/store](http://www.auchan.ro/store)

Table 2.

## Characteristics of CABANOS SAUSAGES assortments depending on processors

SPECIFICATIONS	ALDIS	CAROLI	ELIT
<b>kJ per 100g</b>	1368	1334	1011
<b>kcal per 100g</b>	331	322	241
<b>Fats (g)</b>	30.0	27.0	19.6
<b>of which saturated fatty acids (g)</b>	18.0	9.5	8.0
<b>Carbohydrates (g)</b>	1.0	1.2	1.0
<b>of which sugars (g or ml)</b>	0.8	1.0	0.8
<b>Salt (g)</b>	2.6	18.5	2.0
<b>Fiber (g)</b>	0.4	Not specified	Not specified
<b>Protein (g)</b>	14.0	2.8	15.1
<b>ingredients</b>	Pork, beef, bacon, soy vegetable protein, water, salt, spices and spice extracts, flavors, sugars: dextrose, maltodextrin, stabilizers: sodium diphosphates, antioxidants: ascorbic acid, sodium citrate, aroma enhancer: monosodium glutamate, preservative: sodium nitrite, colorant: carmine	Pork, water, soy vegetable protein, pork animal protein, salt, stabilizers (diphosphates, triphosphates), spices, sugars (dextrose, sugar, maltodextrin), spice extracts, antioxidant (sodium erythorbate), flavor enhancers (sodium monoglutamate, disodium guanylate, disodium inosinate), preservative (sodium nitrite), dye (carmine). Edible artificial membrane.	Pork, bacon, beef, mice, water, salt, soy vegetable protein, stabilizers (diphosphates, triphosphates), spices and spice extracts (garlic, pepper, nutmeg), sugars (dextrose, maltodextrin), flavors, flavor enhancer (sodium monoglutamate), antioxidants (ascorbic acid, sodium citrate), preservatives (sodium nitrite, sodium acetate), dye (carminic acid)
<b>Other features</b>	Edible membrane. Product packed in vacuum	Not specified	Edible artificial membrane
<b>Allergens description</b>	Soy	Produced in a factory that uses: lactose (milk), mustard, celery, wheat (gluten).	Contains soy. May contain traces of lactose, mustard, celery, egg, gluten
<b>Terms of validity</b>	30 days	Not specified	Not specified
<b>Storage / storage conditions</b>	Store at a temperature between 6 and 8 degrees C Humidity: 75 - 80%	Store at temperatures between 2 - 8 degrees C, relative humidity 75-80%	Storage temperature: between 2 - 10 degrees C
<b>Method of processing</b>	Boiled and double smoked product	Not specified	Boiled and double smoked product, vacuum packed

Source: [www.auchan.ro/store](http://www.auchan.ro/store)

**Table 3.**  
**Characteristics of CHICKEN FRANKFURTER SAUSAGES assortments depending on processors**

SPECIFICATIONS	PERFECT POULTRY	CAROLI	ALDIS
<b>kJ per 100g</b>	954	1173	1090
<b>kcal per 100g</b>	230	284	263
<b>Fats (g)</b>	20.0	26.0	22.0
<b>of which saturated fatty acids (g)</b>	5.6	9.5	7.1
<b>Carbohydrates (g)</b>	1.6	0.9	3.0
<b>of which sugars (g)</b>	0.0	0.3	0.5
<b>Salt (g)</b>	2.5	11.5	2.4
<b>Fiber (g)</b>	Not specified	Not specified	0.5
<b>Protein (g)</b>	11.0	1.6	13.0
<b>ingredients</b>	Mechanically separated chicken meat (66%), water, chicken skin, salt, pea fiber, starch, diphosphate stabilizer, antioxidant ascorbic acid, spices, spice extracts, preservatives: sodium nitrite and sodium acetate	Chicken breast (40%), bacon, chicken skin, hardening agent (sodium lactate), salt, spices, stabilizers (diphosphates, triphosphates), antioxidants (ascorbic acid, sodium ascorbate, sodium erythorbate), thickening agent (carrageenan), spice extracts, dehydrated vegetables, flavors, smoke aroma, sugars (dextrose, maltodextrin), preservative (sodium nitrite). Natural membrane.	Chicken breast 60%, chicken meat 27%, poultry fat, water, potato starch, soy protein, salt, spices, milk protein, flavors, sugars: lactose, dextrose, maltodextrin, stabilizers: di-triphosphates sodium, thickener: carrageenan, antioxidant: ascorbic acid, acidity corrector: sodium citrate, flavor enhancer: monosodium glutamate, preservative: sodium nitrite, dye: carmine
<b>Other features</b>	Not specified	Not specified	Edible membrane, vacuum packed product
<b>Allergens description</b>		Produced in a factory that uses: soy, lactose (milk), mustard, celery, wheat (gluten).	Soy, milk protein, lactose
<b>Gluten free</b>	Yes	Not specified	Not specified
<b>Sugar free</b>	Yes	Not specified	Not specified
<b>Lactose free</b>	Yes	Not specified	Not specified
<b>Make dyes</b>	Yes	Not specified	Not specified
<b>Terms of validity</b>	Consume preferably before: see the date written on the package	Not specified	25 days
<b>Storage / storage conditions</b>	0 - 4 degrees C	Storage conditions: 2 - 8 degrees C, relative humidity 75-80%.	Store at a temperature between 5 and 10 degrees C Humidity: 75 - 80%
<b>Method of processing</b>	Boiled.	Not specified	Boiled and smoked

Source: [www.auchan.ro/store](http://www.auchan.ro/store)

### 1) BENCHMARKING ANALYSIS RELATING TO COMPARISON PRICE PROCESSES FOR SUMMER SALAMI

At the SUMMER SALAMI the prices vary in 34 and 43.33 lei/kg, with quite significant differences in terms of composition, respectively the presence of beef (Table 4).

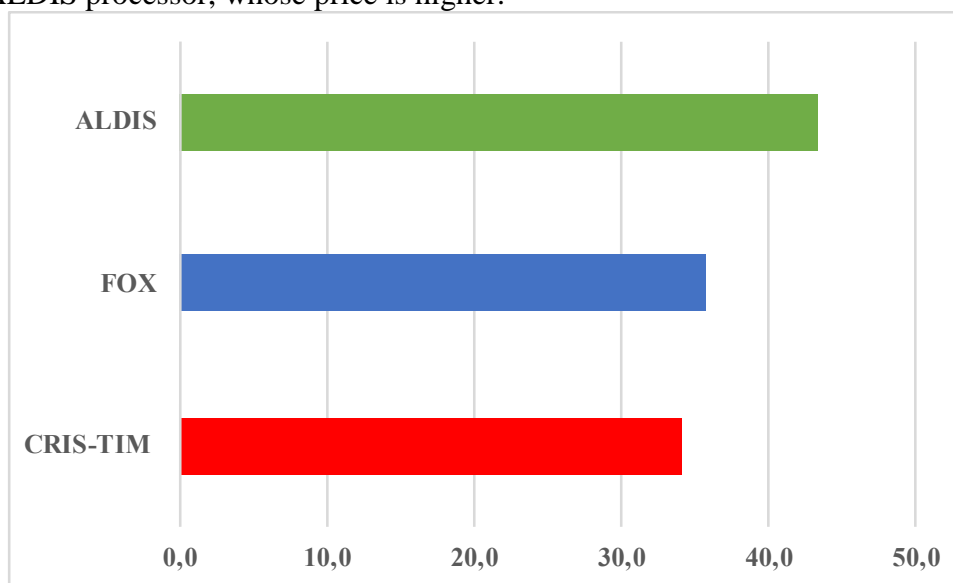
**Table 4.**

**The prices of the SUMMER SALAMI assortment (August 2020)**

SPECIFICATIONS	PRICE / STICK (lei)	WEIGHT / STICK (kg)	PRICE / KG (lei / kg)
CRIS-TIM	10.2	0.3	34.00
FOX	14.3	0.4	35.75
ALDIS	13	0.3	43.33

Source: data collected from [www.auchan.ro/store](http://www.auchan.ro/store)

The benchmarking analysis regarding the comparison of the prices of the three SUMMER SALAMI assortments shows that the CRIS-TIM processor sells this assortment at the lowest price, but does not contain beef (Table 1), compared to the same assortment of the ALDIS processor, whose price is higher.



**Figure 1.** Comparison of the prices of the SUMMER SALAMI assortment (lei/kg)

### 2) BENCHMARKING ANALYSIS RELATING TO COMPARISON PRICE PROCESSES FOR CABANOS SAUSAGES

At CABANOS SAUSAGES the prices vary between 31.56 and 37.56 lei/kg, with differences in terms of composition. Beef is absent from the product with the lowest price (Table 5).

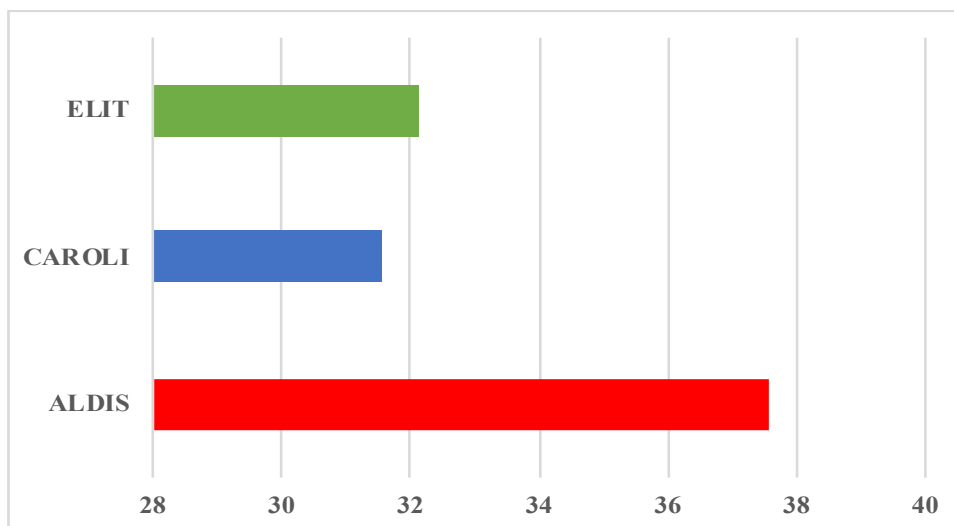
**Table 5.**

**The prices of the CABANOS SAUSAGES assortment (August 2020)**

SPECIFICATIONS	PRICE / PACKAGE (lei)	WEIGHT / PACKAGE (kg)	PRICE / KG (lei / kg)
ALDIS	16.9	0.450	37.56
CAROLI	14.2	0.450	31.56
ELIT	10.6	0.330	32.12

Source: data collected from [www.auchan.ro/store](http://www.auchan.ro/store)

The benchmarking analysis regarding the price comparison of the three assortments of CABANOS SAUSAGES shows that the CAROLI processor sells this assortment at the lowest price, but does not contain beef (Table 2), compared to the same assortment of ALDIS and ELIT processors.



**Figure 2. Comparison of the prices of the CABANOS SAUSAGES assortment (lei/kg)**

**3) BENCHMARKING ANALYSIS RELATING TO COMPARISON PRICE PROCESSES FOR CHICKEN FRANKFURTER SAUSAGES**

At CHICKEN FRANKFURTER SAUSAGES the prices vary between 15.80 and 35.30 lei/kg, with differences in terms of composition. For the products with the highest prices, chicken is represented by chicken breast (Table 6).

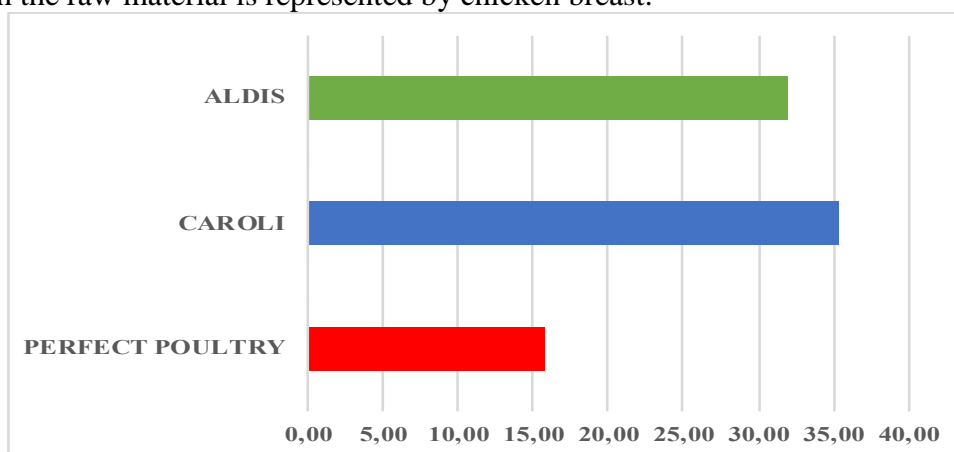
**Table 6.**

**Prices of the CHICKEN FRANKFURTER SAUSAGES assortment (August 2020)**

SPECIFICATIONS	PRICE/PACKAGE (lei)	WEIGHT / PACKAGE (kg)	PRICE / KG (lei / kg)
PERFECT POULTRY	15.8	1	15.80
CAROLI	35.3	1	35.30
ALDIS	14.4	0.450	32.00

Source: data collected from [www.auchan.ro/store](http://www.auchan.ro/store)

The benchmarking analysis regarding the comparison of the prices of the three assortments of CHICKEN FRANKFURTER SAUSAGES shows that the PERFECT POULTRY processor sells this assortment at the lowest price, approximately 50% cheaper than the other two, but it has mechanically deboned meat (MDM) (Table 3), meat with low nutritional value and not recommended for social categories with food risk (children, elderly, ill consumers), compared to the same assortment of ALDIS and ELIT processors, in which the raw material is represented by chicken breast.



**Figure 3. Comparison of assortment prices CHICKEN FRANKFURTER SAUSAGES (lei/kg)**

## CONCLUSIONS

For the benchmarking analysis we analyzed the characteristics of three meat dishes sold by Auchan Romania, products of great interest to Romanian consumers, from three relevant processors, respectively Summer salami (CRIS-TIM, FOX and ALDIS processors), Cabanos sausages (ALDIS, CAROLI and ELIT processors) and Chicken Frankfurter Sausages (PERFECT POULTRY, CAROLI and ALDIS processors). The benchmarking analysis regarding the comparison of the prices of the three assortments of Summer salami shows that the CRIS-TIM processor sells this assortment at the lowest price, but does not contain beef, compared to the same assortment of the ALDIS processor, whose price is higher. In the case of Cabanos sausages, the benchmarking analysis regarding the price comparison of the three assortments shows that the CAROLI processor sells this assortment at the lowest price, but does not contain beef, compared to the same assortment of ALDIS and ELIT processors. The latest benchmarking analysis regarding the comparison of the prices of the three varieties of Chicken Frankfurter Sausages shows that the PERFECT POULTRY processor sells this assortment at the lowest price, about 50% cheaper than the other two, but has separate meat mechanic. Mechanically separated meat is an assortment of meat with low nutritional value and not recommended for social categories with food risk (children, the elderly, the sick), compared to the same assortment of ALDIS and ELIT processors.

Benchmarking analysis is an extremely useful tool in the field of retail, but it can be applied and used efficiently only if as many aspects related to the products subject to this analysis are taken into account.[5,10]

Price is, of course, an important element of benchmarking analysis, but it is recommended that this should not be the only criterion because, as shown in this case study, there are a number of other elements that can influence the consumer more than the price in itself, the price it pays for the purchase of the product.[11,12]

The main purpose of the benchmarking analysis is to compare the products, not a hierarchy of them, but to highlight the qualities and non-qualities of the products [14]. The more benchmarking the analysis covers as many product features as possible, the more eloquent its result will be, the higher the effectiveness of the measures ordered based on the resulting conclusions.

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