# MARKETING AND TECHNOLOGICAL ASPECTS CONCERNING FRESH DRINKS PROTECTION AND PACKING. ALUMINIUM DETERMINATION IN CARBONATED DRINKS

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## Abstract

*This paper includes the results obtained following the marketing study concerning the consumer's opinions regarding to: the searching of the cooling drinks market, the range of the packaging existing on the market for these drinks, -the specifying of the imagine of the ranges and of their packing among the consumers, the consumer's opinion with respect to these packing, the efficiency of the packing materials and the corroboration of the marketing study with that of the aluminum evaluation in the product studied. The market investigation of the carbogaseous drinks was achieved by means of the methods and techniques typical of the marketing researches that are test on the basis of questioning. The technological investigation concerning the possibility of aluminum migration from the carbogaseous drinks was performed by atomic absorption spectrometry with graphite furnace.*

*Keywords: market research, administration, sample*

## Introduction

In order to determine the customer's buying habits, and to study the way they perceive the brand and the packing, there have been elaborated a certain questionnaire. This questionnaire has 11 questions that have been applied all over the county Timis, in the urban as in the rural environment. The subjects have been chosen by random.

In the test disposed and commented on this thesis, 800 people were interrogated, both women and men, from the urban environment (Timisoara, Deta, Lugoj, Sânnicolau Mare) and rural environment (Românești, Gãvojdia, Fibiș, Cãrpiniș, Diniaș, Moravița, Chevereșu

Mare, Diniaş), people from different socio-professional categories, and from different training levels.

Those questioned were asked to show off their opinion on the researched problem.

The questionnaire theme included questions as follows:

> ➢ The most consumed sorts of fresh drinks,
> ➢ The consumed quantity,
> ➢ The preferred brands and the perception of it,
> ➢ Preferred packing.

Also they were asked to specify:

> ➢ Suggestions to improve the packing in which they consume the drink, (shape, size colour, graphics and material of manufacturing the packing),
> ➢ The point of view in relationship to the line and the quality of the drinks and the packing that already exist on the market,
> ➢ The type of packing that they consider highly indicated to preserve the organoleptic properties of the drink.

## Questionnaire drawing up

When the questionnaire was set up, there came up the problem in establishing the themes, then the types of the question and the way they are to be questioned. It is very important the way the questions are formulated. Each question has been evaluated according to a list of references before; it got included into the questionnaire.

The questions were as follows:

> ➢ Relevant – there were included only the questions which offer certain data that help to fulfill the objectives.
> ➢ Clear – there has been avoided the jargon, complex terminology, long words, and ambiguous expressions so that the responders should understand the questions were invited to answer.
> ➢ Harmless – the questions connected to sensitive subjects as the income, age, job, could be considered aggressive and they are usually asked at the end of the questionnaire.
> ➢ Short – the respondent can very hard understand the questions with more than 20 words immediately.
> ➢ Accurate – each question has been addressed to only one subject.

In the enclosed annex it is presented the questionnaire used for market research concerning customers buying habits and the way they perceive the brand and the packing (Demetrescu, 1971; Catoiu, 2003; Marginean, 2000).

## Results and Discussions

From the accomplished market test, 94.95% out of those questioned consume fresh drinks, to an average consume as 11l\person\week [*Q1-2*]

The brands of fresh drinks according to the consumers' preferences are: Coca-Cola, Fanta, Pepsi, Frutti Fresh, Sprite, Capy, Kinley, Mirinda, Adria. [*Q3*]

About the quality of the fresh drinks existing on the market, [*Q4*]

➢ 9.2% out of those questioned think that the drinks have a very good quality,
➢ 5.6% think they are good, 35.2% consider that the quality should be improved.

It is remarkable that 46.5% out of those questioned consider that the fresh drinks packing ranges are monotonous, 36.3% consider it varies and 17.2% think it is diversifiable [*Q5*].

For the best packing for fresh drinks, 52.3% consider that it is the PET, 28.8% consider the glass bottle and 18.9% out of those questioned consider the aluminum can [*Q6*].

The suggestions to perfect the packing [*Q7*] refer to:

➢ Revising their size, (table1)
➢ Shape diversification, (table 2)
➢ Grater color palette, (table 3)
➢ More suggestive graphic for each brand, (table 4)
➢ More fashionable design.

Materials the packing are made of must (table 5):

➢ Not give up strange substances,
➢ Be easily handed and transported
➢ Preserve the freshness of the drinks for a long time.

It is preferable

➢ To reduce the weight of the bottle,
➢ To improve the PET quality,

> ➢ To improve the closing systems of aluminum cans,
> ➢ A greater diversity of the materials used for packing,
> ➢ Recyclable packing.

**Table 1**. The suggestions of consumers concerning the packages size.

|  |  | Frequency | Percent | Valid percent |
|---|---|---|---|---|
| Valid | as attractive as possible shape | 101 | 13.5 | 63.1 |
|  | different for each range | 23 | 3.1 | 14.4 |
|  | as greater diversity as possible | 14 | 1.9 | 8.8 |
|  | practical shape | 9 | 1.2 | 5.6 |
|  | unconventional shape for bottle | 13 | 1.7 | 8.1 |
|  | Total | 160 | 21.4 | 100.0 |
| Missing | 0 | 586 | 78.6 |  |
|  | Total | 586 | 78.6 |  |
| Total |  | 746 | 100.0 |  |

**Table 2**. The suggestion of consumers concerning packages form.

|  |  | Frequency | Percent | Valid percent |
|---|---|---|---|---|
| Valid | as small as possible. the content should be entirely consumed at once | 80 | 10.7 | 44.4 |
|  | begining with 200 ml up to 1000 ml | 55 | 7.4 | 30.6 |
|  | as greater diversity as possible | 45 | 6.0 | 25.0 |
|  | Total | 180 | 24.1 | 100.0 |
| Missing | 0 | 566 | 75.9 |  |
|  | Total | 566 | 75.9 |  |
| Total |  | 746 | 100.0 |  |

**Table 3**. The suggestions of consumers concerning the packages colour.

|  |  | Frequency | Percent | Valid percent |
|---|---|---|---|---|
| Valid | to be to attractive as possible | 14 | 1.9 | 9.5 |
|  | transparente bottle | 46 | 6.2 | 31.1 |
|  | light brown | 7 | 0.9 | 4.7 |
|  | a great palette of colours | 81 | 10.9 | 54.7 |
|  | Total | 148 | 19.8 | 100.0 |
| Missing | 0 | 598 | 80.2 |  |
|  | Total | 598 | 80.2 |  |
| Total |  | 746 | 100.0 |  |

**Table 4**. The suggestions of investigated persons concerning the packages graphic arts

| | | Frequency | Percent | Valid percent |
|---|---|---|---|---|
| Valid | attractive graphic art | 47 | 6.3 | 44.3 |
| | at holidays to be specific | 31 | 4.2 | 29.2 |
| | simple | 16 | 2.1 | 15.1 |
| | diversified | 8 | 1.1 | 7.5 |
| | illustrative | 2 | 0.3 | 1.9 |
| | sugestive drawings | 2 | 0.3 | 2.0 |
| | Total | 106 | 14.2 | 100.0 |
| Missing | 0 | 640 | 85.8 | |
| | Total | 640 | 85.8 | |
| Total | | 746 | 100.0 | |

**Table 5**. The suggestions of consumers concerning the material the packages are manufactured of.

| | | Frequency | Percent | Valid percent |
|---|---|---|---|---|
| Valid | the material should not emanate toxic substances | 16 | 2.1 | 15.7 |
| | to keep as much as possible the drink freshness | 7 | 0.9 | 6.9 |
| | uncasable. light manipulation | 7 | 0.9 | 6.9 |
| | highter bottle | 22 | 2.9 | 21.6 |
| | more qualitative PET | 34 | 4.6 | 33.2 |
| | dose of Al with protective cover | 7 | 0.9 | 6.9 |
| | as greater diversity as possible | 5 | 0.7 | 4.9 |
| | to be recicling | 4 | 0.5 | 3.9 |
| | Total | 102 | 13.7 | 100.0 |
| Missing | 0 | 644 | 86.3 | |
| | Total | 644 | 86.3 | |
| Total | | 746 | 100.0 | |

The consumers' comparative opinions about the efficiency of packing materials:

➢ 22.7% consider that the aluminum cans preserve the properties of fresh drinks more than the glass bottle.
➢ 38.3% consider that the can does not preserve the properties more than the glass bottle,
➢ 21.7% have a „I don't know" answer, [Q8]

➢ 10.6% think that the PET keeps the organoleptic properties after opening,
➢ 47.5% consider that the organoleptic properties modify,
➢ 21.6% consider that the organoleptic properties keep partially [*Q9*]

About the preferences to bottle in smaller bottles in order to consume the whole content as soon as the bottle is opened [*Q10*]:

➢ 62.9% out of those questioned prefer the packing of smaller capacity,
➢ 24.4% prefer the bottles with greater capacity,
➢ For 18.9% the PET preserves the product more than the bottle,
➢ For 43.3% PET does not protect the product more than the bottle. [*Q11*]

## Conclusions

As a result of the answers, could be noticed that the consumers appreciate the quality of the existing packing. Although, there is required a slight modification in packing design. It is suggested to keep the classic line, and there will be added improved system of closing the bottles. And also there will exist more fashioned accents to the graphics, daring colours, more suggestive graphics for each brand of drink in part, and special graphics for holidays.

Also, it is desired to reduce the weight of the bottle and a non-conventional form for the bottle, an improvement to the quality of the bottles from PET concerning the properties if tightening, a greater variety of packing forms, specified to each brand in part, small capacity packing that can be emptied soon after the first opening.

There are made options for transparent packing that can visualize the content, packing that would not give up toxic substances, handled, transported and stored easily, made of recyclable materials.

In the study research, results that those questioned are interested in the aspect of the packing more, making choice for a product more easy to handle, for a smaller size of the bottle in order to drink the whole content at the first opening. Because, once the bottle is opened, the product looses the organoleptic properties such as: taste, smell, flavour, acidity, this is what those who were asked answered.

It is remarkable a greater tendency to substitute the classic packing (glass bottle) with other new packing (aluminum cans, plastic

materials). These materials do not offer a total protection; the tests (GFAAS) realized presenting that there is a migration of components from the packing walls to the drinks.

## References

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## Annex Questionnaire

Q1. Do you drink cooling drinks?
    1.yes
    2. no

Q2. What is the quantity you drink on week during the summer month?

Q3. What is the brand of cooling drink you prefer?

Q4. Which is your opinion about the quality of the cooling drinks found on the market?
    1.  it should be improved
    2.  good
    3.  very good

Q5. How do you consider the range of the packages existing on the market?
    1.  monotonous
    2.  varied
    3.  it should be diversified

Q6. Which is the package you prefer to drink your favorite drink?
    1.  bottle
    2.  PET
    3.  aluminum can

Q7. What are the suggestions you can give us for the improvement of these packages concerning?
    1.  size

2. colour
3. shape
4. graphics
5. the material the package is made of

Q8. Do you consider that the can keeps the properties of cooling drinks better than the bottle?
1. yes
2. no
3. in a certain measure
4. I don't know

Q9. Do you consider that the cooling drinks bottled in a 1 liter PET package keep its organoleptic properties after opening?
1. yes
2. no
3. in a certain measure
4. I don't know

Q10. Do you prefer the drink to be bottled in smaller bottles from which the content can be drink once, at the first opening?
1. yes
2. no
3. I don't know

Q11. Do you consider that the PET protects the cooling drinks better than the bottle?
1. yes
2. no
3. in a certain measure
4. I don't know