MILK CONSUMPTION BEHAVIOUR ANALYSIS OF GREEK RURAL POPULATION

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In March 1990, with the method of group discussions, the qualitative research was completed, aiming at the collection of original information, but especially, there was a complete sorting of the questionnaires on the quantitative research. During this research, there has been an effort to identify the current situation of principal milk-types market, by recording any characteristic trends, views, habits, needs and preferences of the population that live and work in the Greek rural areas. The quantitative research was carried out in the period of October and November of 1990, covering the total of the rural country. Namely, 724 households were questioned, in 12 municipalities and 43 communities, in 25 states of the country. The sample was sorted using the method of stratified random sampling, thing that guarantees its representation. The actual research, however, was based on the completion of questionnaires by house-wives. Within the 53 municipalities and communities that were chosen, 15 are considered as semi-urban and the remaining as rural areas. The reason these semi-urban areas were also included, is related with the effort of the arrival to higher sample representation, since these areas include people that are directly related to agriculture, and that, in a way, are also accounted for the agricultural population.

From the level of use of milk, we immediately discriminate the domination in the market of the condensed milk, with a level of use of 61%. This type of milk presents the best image from any other type, since it is the oldest kind that has been available to the Greek rural areas and has win the trust of the people. The commercial campaigns of companies producing and marketing this type of milk have a big budget on its advertising.

The pasteurised homogenised in carton packs (fresh) milk is a new approach to milk with different degree of spreading within

Abstract

The purpose of this research is to (i) investigate the different milk consumption patterns, based on the opinions of its users for its characteristics (i.e. profile), and (ii) to evaluate the effect of the socio-economic factors of rural households to the formation of the profiles they create for different types of milk.
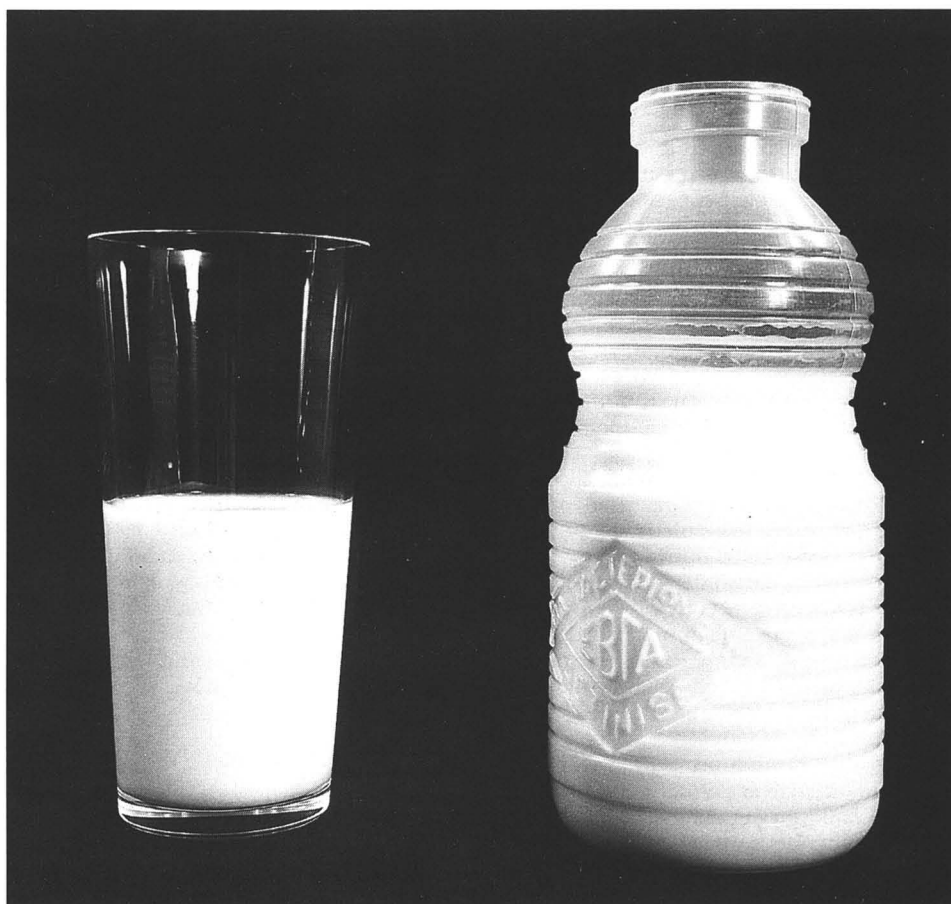The use and originality of this analysis are based on the fact that, for the first time, there has been an effort to analyse, in Greek territory, milk consumption models of the rural population, that clearly seem to differentiate when compared to those of the semi-urban population.
The analysis includes two methodologies of approach: (i) *descriptive analysis* by interpreting the basic concentrated tables obtained by the questionnaire results, and (ii) *statistical analysis* by calculating the contingency of the milk-types profile characteristics together with the socio-economic factors of rural households, using crosstabulated contingency tables.

Résumé

*Cette recherche porte sur (a) l'étude de la différente évolution de consommation de lait, sur la base des opinions des usagers vis-à-vis de ses caractéristiques (i.e. profil), et (b) l'évaluation de l'effet des facteurs socio-économiques des ménages ruraux sur la formation du profil de différents types de lait. L'utilité et l'originalité de cette analyse sont liées au fait qu'il s'agit d'un premier effort pour analyser, en Grèce, des modèles de consommation du lait chez la population rurale, qui apparaissent être nettement différents des modèles chez la population semi-urbaine.
L'analyse est basée sur deux approches méthodologiques: (a) une analyse descriptive par l'interprétation des tableaux récapitulatifs obtenus par les résultats des questionnaires, et (b) une analyse statistique faite en calculant la contingence des profils des types de lait et les facteurs socio-économiques des ménages ruraux et par l'utilisation des tableaux croisés de contingence.*

the geographical compartments of the country, and a total use-level of 25%. It is supported by a large commercial campaign, so much on the point of view company-name, as on the point of view product. From the concentrating tables obtained by the questionnaires, we see that the profile of pasteurised milk does not show any depth, i.e. the consumers does not recognise any of its characteristics as too strong (even the fresh milk with no conservatives). As a result, this type of milk does not dispose important arguments for its support, as in contradiction happens in the case of condensed milk.

Finally, the fresh cow's milk is chosen as the type of milk that is self-produced by a minority of farmers, while also being consumed by other non-producing people (level of use: 21%). Due to the domination of these, our analysis will concentrate on these three types of milk. It is noted here, that the important level of use of 26% of the fresh sheep-goat milk type, which we will not deal with because it is solely used for the production of feta cheese and yoghurt, while the fresh cow-milk type is suitable for most uses, within which the immediate consumption. Thus, it appears as being directly comparable to the other two chosen types.

The profile (image) of a product is formed by the experiences someone has, without necessarily being acquired knowledge that responds to reality. This can come from rumours — i.e. whatever has been expressed by other people, friends or relatives — from what he/she has read, heard or experienced by personal use. The possible characteristics that define the profile of milk are found in **Table I**.

It is natural to believe that the way the profile is formed in the consumers views is depending on the socio-economic factors that constitute and form the consumption models in the rural areas. Such factors are:

(a) the size of the household

The available differentiation of households was one-member, two-member, three-member, four-member and five member families. Based on the social structure of the rural areas, it is estimated that one-member households are composed by aged people, usually widowers/widows, with probably low incomes. Their nutritional needs are determined so much from medical advice, as from their past-formed nutritional patterns. One-member households with young people, are rarely met in Greek province, excepting the cases of public/private employees that reside there for a short period of time. Two-member households are anticipated to have either middle-aged, either aged members, the children of which live in their own household (within the same area or in other areas), either young couples with no children yet. The composition of three-member households is not easy to define. They can be composed by young people with a single child, or older people with

an older child, or even middle-aged people with one of the parents living with them. It is certain enough that in four-member households there are children, young or older. Of course, there are four-member households composed by aged people, but their frequency is quite limited. The same holds for the five-member households.

(b) who decides for the purchases

Women have higher responsibility and care for nourishment so much for their children, as for their household, and they are usually deciding for the buys of the household. In province, however, patriarchal regime is still intense.

(c) the size of income

Income constitutes, in all relevant researches, an important explanatory variable of consumer behaviour. Its use, in this case, for the evaluation of classic parameters (like, for example, price elasticity) would be rather restricted. Milk is an essential product for the nourishment and growth of children, and is available at low prices. On the other side, this case where the opinions of consumers are examined for the characteristics of milk, income can be used as a variable which explains the different consumer patterns that are developed in the modern province, as a result of income differences. This discrimination was performed in four categories, depending on the monthly income of each household (in 1989 prices): for a monthly income up to 50,000 drachmas we have «low income», from 50,001 to 110,000 drachmas we have «medium income», from 110,001 to 150,000 drachmas we have «high income» and from 150,001 drachmas and up we have «very high income».

(d) area of residence

The division of households according to their area of residence is a very useful element. The division in to semi-urban and rural categories is expected to differentiate the answers, because in rural areas, milk self-

production is expected to be high.

(e) geographical distribution

Each geographical section is estimated to produce statistically significant differentiation, since both milk types and company trademarks have different propagation in different areas. The division was made into «Mainland Greece», «Thessaly», «Macedonia», «Ipiros», «Peloponnese», «Crete», «Thrace» and «Ionian» and «Aegean» seas. The development and preservation of the best possible profile of a product, constitutes the main concern of contemporary marketing. Its improvement is succeeded via long-term advertisements and promotional initiative. Their purpose is the promotion of those characteristics that differentiate that product from the others, together with the support of the existing positive ones. Within the intensive competitive environment of today's market, a good image/profile of a product or type of product, is considerably helping to sales expansion, to new markets penetration, to the creation of a more favourable sales environment; all these, against any competitors for its longevity.

This paper has four sections. In the second section, the statistical contingency analysis is elaborated, with particular emphasis on indices and the contingency certification criterion. In the next section, the basic research questionnaire concentrating tables are interpreted, followed then by the explanation of the calculations of contingency tables. Finally, in section four, the main analysis findings are summarised.

Methodology

The differentiation of consumer patterns of rural households in comparison to the urban ones and the general average, has been studied some time ago by writers Karapostolis (1979) and Papayiannakis et al. (1987). Similar research work, but with modern statistical analyses which we will also fol-

Table I	*Milk profile characteristics.*				
1	(524)*	Nourishing**	10	(533)	Does not have any smell
2	(525)	Healthy	11	(534)	Is a natural product
3	(526)	Suitable for children	12	(535)	Children like drinking
4	(527)	Recommended by the doctor	13	(536)	Found easily in shops
5	(528)	Has low fat-content	14	(537)	Appropriate for a diet
6	(529)	Has practical container	15	(538)	Has a pleasant taste
7	(530)	Has many uses	16	(539)	Can be trusted
8	(531)	Has reasonable price	17	(540)	Can be drunk cold
9	(532)	Is kept for a long period	18	(541)	Is widely advertised

(*) these numbers will constitute the abstract of these characteristics from now on, followed b and A for condensed milk, a B for pasteurised and C for fresh milk.
(**) these characteristics were defined by the qualitative research.

low, have been carried out by Guseman et al. (1987), Nash (1988) and Kazakopoulos et al. (1991).

The high number of data does not sometimes allow the use of classic techniques of statistical analysis, for the studying and understanding of the enclosed information. The sample of population in our case is great (724 questionnaires); the characteristics that form each milk type profile are many (18 variables) and their dependence by 5 socio-economic factors (demographic, income etc.) out of which the household image comes, is forcing us to consider to techniques of multivariate statistical analyses, for the analysis of consumer model of milk consumption of the rural population. These techniques have the great advantage of processing huge amounts of data on a mathematical basis in such a way that the explanation of the results is rich in information (Volle, 1985, Labrousse, 1983).

For the determination of the contingency between nominal variables, out of which on has to be at least nominal, the creation of the so-called contingency tables that constitute a form of crosstabulation tables, is necessary (Tziafetas, 1988).

The certification of contingency is defined by combining the distribution criterion x^2 by the *Grammer* and *contingency coefficient* indices. The x^2 distribution is:

$$x^2 = \sum_{i=2}^{R} \sum_{j=2}^{K} \frac{(n_{ij} - E_{ij})^2}{e_{ij}}$$

based on the freedom levels of $(R-1)$ $(K-1)$, where $e_{ij} = n\hat{p}$ and $ij = (n_i n_j)$ with critical area $x^2 \geq x^2 (R-1)(K-1)$.

From the distribution table x^2 we accept that there is contingency when we are in levels < 0.05 (Papaioannou & Ferentinos, 1983).

The Grammer index (v) has a range of $-1 \leq v \leq +1$. When close to 1 we have positive correlation, while at -1 we have negative correlation:

$$V = \sqrt{\frac{(Q_p/n)}{M_{in}(R-1)(K-1)}}$$

where $Q_p = \sum i \sum_j \frac{(n_{ij} - M_{ij})^2}{M_{ij}}$ and $M_{ij} = n\hat{p}$.

The contingency coefficient index (p) has a range of $0 \leq p \leq 1$, i.e. $P = \sqrt{\frac{Q_p}{Q_{p+n}}}$.

We accept the assumption for values smaller than 0.05, meaning that decision error is smaller than this. For higher values, we do not accept this assumption (Kendall and Stuart, 1979).

Interpretation of the research questionnaire concentrating Tables

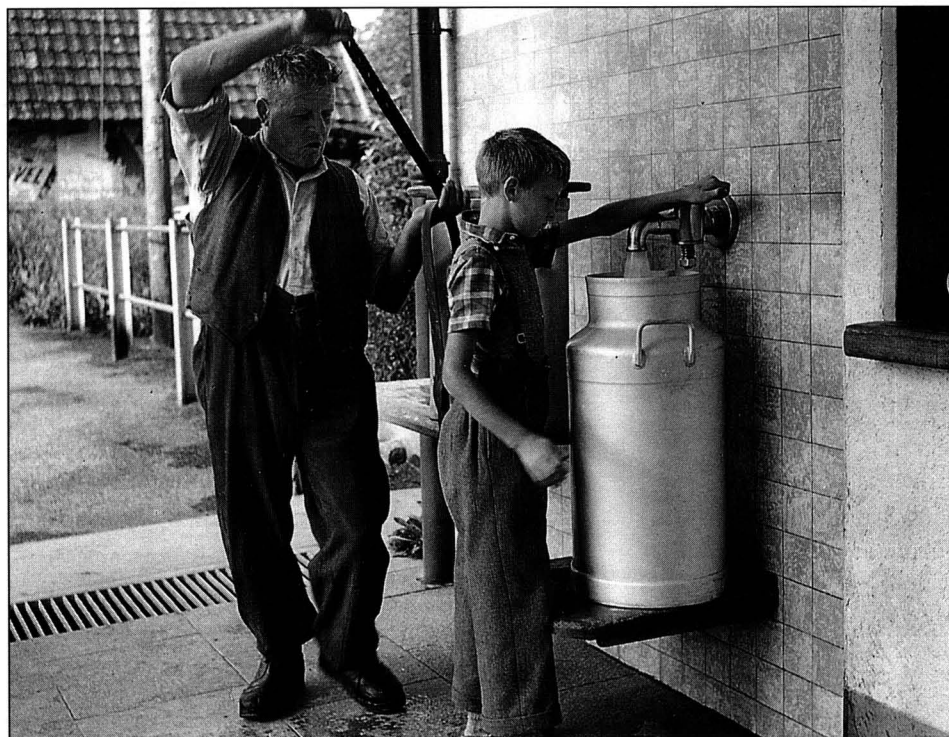Condensed, pasteurised and fresh (cow) milk were the types chosen for the analysis (**Table II**).

Table II Degree of milk use (% of use in 12 months).

Condensed	61
Pasteurised	25
Fresh cow-milk (purchased)	7
Fresh cow-milk (own)	14
Fresh sheep-milk (purchased)	5
Fresh sheep-milk (own)	26
Chocolate milk	10
Sweetened	6
Milk powder	2

Table III Analysis of milk-type profiles (%) condensed - pasteurised - fresh.

Nourishing	42	15	36
Healthy	38	19	32
Suitable for children	42	14	26
Recommended by the doctor	27	8	16
Has low fat-content	11	8	12
Has practical container	32	27	4
Has many uses	41	15	24
Has reasonable price	19	9	22
Is kept for a long period	43	4	6
Does not have any smell	29	15	15
Is a natural product	15	15	42
Children like drinking	36	12	11
Found easily in shops	62	18	2
Appropriate for a diet	8	8	8
Has a pleasant taste	26	16	21
Can be trusted	38	16	20
Can be drunk cold	16	23	14
Is widely advertised	44	14	4

Condensed milk is used by rural population, more than any other type of milk (exceptionally high usage of 61%). The pasteurised homogenised in carton pack (fresh) milk is a new approach to milk with different degree of spreading within the geographical compartments of the country and a total use-level of 25%.

Finally, the fresh cow's milk is chosen as the type of milk that is self-produced by a minority of farmers, while also being consumed by other non-producing people (level of use: 21%). It is noted here, that the important level of use of 26% of the fresh sheep-goat milk type, which we will not deal with because it is solely used for the production of feta cheese and yoghurt, while the fresh cow-milk type is suitable for most uses, within which the immediate consumption. The 75% of fresh cow-milk consumers is concentrated in Northern Greece, where cow-farming has expanded.

Condensed milk displays the strongest and most positive profile from all milk types, since it is the oldest type of milk available in the Greek province and has earned consumers trust (**Table III**). Greece has the highest level of condensed milk consumption in Europe (Fotopoulos, 1992). The analysis of this milk-type profile, is leading us to very interesting conclusions. Namely, its different characteristics have a more uniform distribution on the answers of the questioned people, in comparison to other milk-types. The above ascertainment must be attributed to the continuous effort for informing the consumers on a product level, as well as on a company level.

Pasteurised homogenised milk in carton container is the type of milk with different degree of distribution between the ge-

Table IV *Condensed milk.*

no.	variable	Size of household		Decides for purchases		Size of income		Area of residence		Geographical division	
		result	probability*	result	probability*	result	probability*	result	probability*	result	probability*
1	524A	cont.	0,001 F	cont.	0,000 W	cont.	0,000 VH	none	0,962	cont.	0,000 P
2	525A	none	0,258	cont.	0,026 W	cont.	0,004 VH	none	0,782	cont.	0,000 P
3	526A	cont.	0,000 F	cont.	0,000 W	cont.	0,000 VH	none	0,171	cont.	0,000 P
4	527A	cont.	0,000 F	cont.	0,001 W	cont.	0,000 VH	none	0,856	cont.	0,000 P
5	528A	none	0,899	none	0,955	none	0,086	cont.	0,042	cont.	0,002 P
6	529A	cont.	0,000	none	0,068	cont.	0,000 VH	none	0,448	cont.	0,000 P
7	530A	cont.	0,001	cont.	0,015	cont.	0,000 VH	none	0,338	cont.	0,000 P
8	531A	none	0,127	none	0,190	cont.	0,008 VH	none	0,266	cont.	0,000 P
9	532A	cont.	0,000	none	0,547	cont.	0,000 VH	cont.	0,035	cont.	0,000 P
10	533A	cont.	0,014	none	0,109	cont.	0,003 VH	none	0,874	cont.	0,000 P
11	534A	none	0,325	cont.	0,020	cont.	0,029 VH	cont.	0,000	cont.	0,007 P
12	535A	cont.	0,000 F	cont.	0,006	cont.	0,000 VH	none	1,000	cont.	0,000 P
13	536A	cont.	0,000	cont.	0,000	cont.	0,000 VH	none	0,426	cont.	0,000 P
14	537A	none	0,488	none	0,512	none	0,209 VH	none	0,742	none	0,463 P
15	538A	cont.	0,037	none	0,055	cont.	0,000 VH	none	0,112	cont.	0,000 P
16	539A	cont.	0,000 F	cont.	0,000 W	cont.	0,000 VH	none	0,850	none	0,330 P
17	540A	cont.	0,000	none	0,129	cont.	0.001 VH	none	0,571	cont.	0,000 P
18	541A	cont.	0,000	cont.	0,001	cont.	0,000 VH	cont.	0,014	cont.	0,000 P

(*) Probability of acceptance <0.05.
Size of household: one-member (34), two-member (150), three-member (123), four-member (202) and five member (214)
Decides for purchases: husband (188) and wife (536)
Size of income: low (104), medium (235), high (116), very high (94) and missing observations (175)
Area of residence: semi-urban (145) and rural (579)
Geographical division: Mainland (152), Thessaly (78), Macedonia (208), Ipiros (52), Peloponnese (45), Crete (61), Thrace (42), Ionian (29) and Aegean (57) seas

cont. = there is contingency	(F) = four-member household	(VH) = very high income
none = there is no contingency	(W) = the wife	(P) = Peloponnese, Mainland Greece and Crete

ographical divisions of the country. It follows from Table II that the profile of pasteurised milk does not exhibit any «depth», i.e. the consumers do not recognise any strong characteristics, resulting to the lack of important arguments for its support. Characteristics such as «practical container», «found easily in shops» and «can be drunk cold» are also discriminated. However, the intense company advertising of producers currently competing in the Greek market, could possibly improve the profile of this milk type.

Fresh (cow) milk is the second type — after the condensed milk — to have an intense profile. It is natural for those who consume their own-produced milk to be residents of rural areas. It is also interesting to note that a big percentage of rural areas milk consumers prefer and purchase fresh cow-milk (in fact, 7%). This is fully justified by the same consumer answers, regarding the fresh milk's advantages. Thus, fresh milk consumers consider this type as nourishing, natural and healthy and suitable for children, while it seems that local doctors do recommend it (this answer concentrates the highest percentage, after the condensed milk). Finally, they consider this type of

milk having a reasonable price and a more pleasant taste.

Interpretation of the contingency Tables results

Condensed milk

In **Table IV** we meet those characteristics of the condensed milk whose variable contingency appeared as statistically significant. It is generally observed that there is an improvement of this milk type profile, by the increase of household members. An important element is the fact that four-member households exhibit higher sensitivity in matters concerning the nourishment of children, such as if «children like drinking» or «can be trusted». In the same way, the poor profile coming from one-member households, is also important. It looks like if this milk-type has been «recorded» in rural consumers consciousness as the most suitable for children, not to mention, of course, the belief of it exclusively being children food. More *sensitive* characteristics, such as «nourishing», «healthy», «suitable for children», «recommended by the doctor» and

«can be trusted», all showed statistically significant contingency of those characteristics related to the sex. On all above characteristics, it can be proved that women are the ones to become more sensitive than men (leaders).

Consuming patterns based on income showed that low-income households do not exhibit any interest at all for the characteristics of condensed milk, due to obviously minimal use. Very high-income households seem to have been more influenced by the advantages of other milk-types; nevertheless, they still trust this type of milk. It is another yet proof of the strong profile that this type displays, which is differentiating it from the other types of milk.

The long-term presence of condensed milk in province, has formed a good profile in almost all over Greece (**Table IV**). Areas that appreciate more this product are Mainland Greece, Peloponnese and Crete, but less for Macedonia and the Aegean islands. The low profile met in the last two areas is suggested by the development of local cow-farming, but also from local pasteurisation and distribution factories that pack milk in carton containers (Drama, Serres, Xanthi, Syros, Naxos).

Table V *Pasteurised milk.*

no.	variable	Size of household		Decides for purchases		Size of income		Area of residence		Geographical division	
		result	probability*	result	probability*	result	probability*	result	probability*	result	probability*
1	524B	none	0,102	none	0,116	cont.	0,033 VH	none	0,271	cont.	0,000 M
2	525B	none	0,163	none	0,150	cont.	0,000 VH	none	0,104	cont.	0,000 M
3	526B	none	0,214	cont.	0,004	cont.	0,001 VH	none	0,445	cont.	0,000 M
4	527B	cont.	0,014 T	cont.	0,025 W	cont.	0,000 H	none	0,306	cont.	0,000 M
5	528B	none	0,258	none	0,282	none	0,817	none	0,762	cont.	0,003 M
6	529B	none	0,340	none	0,400	cont.	0,002 VH	none	0,549	cont.	0,000 M
7	530B	none	0,483	none	0,559	none	0,050	none	0,820	cont.	0,000 M
8	531B	none	0,215	none	0,213	none	0,477	none	0,535	cont.	0,000 M
9	532B	none	0,221	cont.	0,023	none	0,062	none	0,565	cont.	0,000 M
10	533B	none	0,343	none	0,475	none	0,544	none	0,943	cont.	0,000 M
11	534B	cont.	0,039 F	none	0,088	cont.	0,000 H	none	0,340	cont.	0,000 M
12	535B	none	0,266	cont.	0,047	cont.	0,032 VH	none	0,374	cont.	0,000 M
13	536B	none	0,571 T F	none	0,122	none	0,879	none	0,079	cont.	0,000 M
14	537B	cont.	0,000 T	cont.	0,025 W	none	0,449	none	0,760	cont.	0,000 M
15	538B	none	0,510	none	0,066	cont.	0,026 VH	none	0,496	cont.	0,000 M
16	539B	none	0,146	cont.	0,035 W	cont.	0,000 H	none	0,201	cont.	0,000 M
17	540B	none	0,176	none	0,971	cont.	0,005 H	none	0,681	cont.	0,000 M
18	541B	none	0,124	none	0,462	cont.	0,018 H	none	0,580	cont.	0,000 M

(*) Probability of acceptance <0.05.
Size of household: one-member (34), two-member (150), three-member (123), four-member (202) and five-member (214)
Decides for purchases: husband (188) and wife (536)
Size of income: low (104), medium (235), high (116), very high (94) and missing observations (175)
Area of residence: semi-urban (145) and rural (579)
Geographical division: Mainland (152), Thessaly (78), Macedonia (208), Ipiros (52), Peloponnese (45), Crete (61), Thrace (42), Ionian (29) and Aegean (57) seas

cont. = there is contingency	(T) (F) = two- and four-member household	(H) (VH) = high and very high incomes
none = there is no contingency	(W) = the wife	(M) = Macedonia

The advertising campaign of many companies has created more favourable circumstances for this product. Thus, in many consumer categories, the positive profile of condensed milk is a composition of its strong, traditional profile, and its modernisation as well.

The total of consumers is considering as an important advantage the fact that condensed milk can be found everywhere, thus being first in demand. On the other side, the equally important advantage of long-time conservation did not exhibit the same results, as it would be normally expected.

Sole exception, where conservation is treated as an important advantage, constitute areas that already present difficult access and communication, such as Crete, Thrace and Peloponnese.

High income classes seem to be influenced, in a greater extent, by medical advice. It must be noted here, that it is extremely difficult to isolate the importance of socio-economic characteristics. For example, it is natural for a four-member households that are composed by a couple of 40 years old and two children, to be classed in higher income levels, while someone retired, in pen-sion, that lives by him/herself, is classed in lower income levels.

Pasteurised milk

The profile of pasteurised milk (**Table V**) appears good, in general terms, without any elevation, whatsoever. It could be described as «flat» or «without depth». In contingency analysis of pasteurised milk on the size of the household, the only case which displays a statistically significant difference is the case of two- and four-member households, where pasteurised is «recommended by the doctor», «a natural product», «found easily in shops» and «appropriate for a diet». The existence of youngsters — usually females — into these households, is justifying the finding above.

The important finding in this category is considered the fact that, this type of milk is much more accepted by higher income levels. Explanations are many, and must be located within the wish of these income levels to be included into the higher consuming patterns, as they are defined by the life-styles on television and other media, by their residence in areas closely communicating with urban areas and, by the wish for superiority in the extent of their local community.

Table V also presents the very much justified and excellent profile that the pasteurised milk is enjoying, in the boundaries of Macedonia. The great number of industrial dairy units that are active on a local (SERGAL, RODOGAL) or national scale (AGNO, MEBGAL), and the long period these have been operating, have contributed to the formation of such an excellent profile. A good profile — inferior to Macedonia — is also exhibited by Peloponnese, and much less by Thrace.

Fresh milk

The analysis of fresh milk has showed important results only on geographical criteria of household residence. In **Table VI**, we see the statistically significant contingency between the characteristics of fresh cow-milk and the geographical divisions of the country. The superiority of Thrace and Macedonia is a natural consequence of the widely-spread cow-farming in these areas. It must be stressed that consumers in Thrace are also familiar with this type of milk, although cow-farming is of smaller proportions in comparison to previous areas.

Table VI *Fresh Milk.*

no.	variable	Size of household		Decides for purchases		Size of income		Area of residence		Geographical division	
		result	probability*	result	probability*	result	probability*	result	probability*	result	probability*
1	524C	cont.	0,039	none	0,760	cont.	0,007	cont.	0,039	cont.	0,000 M T
2	525C	none	0,341	none	0,554	none	0,065	cont.	0,004	cont.	0,000 M T
3	526C	none	0,160	none	0,499	none	0,251	none	0,116	cont.	0,000 M T
4	527C	none	0,345	none	0,183	none	0,620	cont.	0,005	cont.	0,000 M T
5	528C	none	0,375	none	0,492	none	0,370	cont.	0,004	cont.	0,000 M T
6	529C	none	0,786	none	1,000	none	0,313	none	0,393	cont.	0,000 M T
7	530C	none	0,384	none	0,281	none	0,402	cont.	0,001	cont.	0,000 M T
8	531C	none	0,283	none	0,213	none	0,343	none	0,866	cont.	0,000 M T
9	532C	none	0,584	none	0,808	none	0,141	none	0,140	cont.	0,000 M T
10	533C	none	0,264	none	0,938	none	0,720	none	0,059	cont.	0,000 M T
11	534C	cont.	0,008	cont.	0,040	none	0,079	cont.	0,001	cont.	0,000 M T
12	535C	none	0,194	none	0,827	none	0,671	none	0,434	cont.	0,000 M T
13	536C	none	0,351	none	0,961	none	0,955	none	0,074	cont.	0,004 M T
14	537C	none	0,533	none	0,855	none	0,111	cont.	0,001	cont.	0,000 M T
15	538C	none	0,223	none	0,830	none	0,488	none	0,143	cont.	0,000 M T
16	539C	none	0,191	none	0,922	none	0,296	cont.	0,012	cont.	0,000 M T
17	540C	none	0,847	cont.	0,006	none	0,344	cont.	0,017	cont.	0,000 M T
18	541C	none	0,674	none	0,850	none	0,567	none	0,438	cont.	0,000 M T

(*) Probability of acceptance <0.05.

Size of household: one-member (34), two-member (150), three-member (123), four-member (202) and five member (214)
Decides for purchases: husband (188) and wife (536)
Size of income: low (104), medium (235), high (116), very high (94) and missing observations (175)
Area of residence: semi-urban (145) and rural (579)
Geographical division: Mainland (152), Thessaly (78), Macedonia (208), Ipiros (52), Peloponnese (45), Crete (61), Thrace (42), Ionian (29) and Aegean (57) seas

cont. = there is contingency   (M) (T) = Macedonia, Thrace
none = there is no contingency

Conclusions

Condensed milk exhibits the strongest and most positive profile than any other type of milk. Rural consumers of milk show increased interest, related to the characteristics that refer to its nutritional value and to the suitability for children. This is completely natural, since milk is closely related with the appropriate and correct growth of children (as found in four-member households), and is usually treated as a pure child-food.

Consumers also show high interest for characteristics such as *ease to find in the market, practicality in the container* etc. Finally, it is made clear that consumers are interested to see the extent at which, the product they consume, follows contemporary developments, as they are expressed with advertising.

In general terms, pasteurised milk does not display very strong characteristics, in rural areas. We can distinguish characteristics such as «practical container», «found easily in shops» and «can be drunk cold». However, an important finding constitutes the existence of correlation between the degree of trust and the time of existence of this product in the market. Thus, in areas where pasteurised milk was introduced years ago (like in Macedonia), its profile is definitely better when compared to other provincial areas. Furthermore, the fact that pasteurised milk is being considered much more positively by higher income classes, is denoting the margins of its expansion in the provincial market.

Fresh milk has shown important results, not only in matter of the geographical criterion of household residence. The areas of Thrace and Macedonia are, namely, a natural follow-up of the widely-spread cow-farming in those areas.

By examining these findings on a dynamic basis, we could assume that pasteurised milk will continue to grow its market-share, obviously at the expense of condensed milk. The measure of its substitution will be rather slow, since condensed milk has already appeared for a long time and has acquired the trust of its consumers. However, the expansion of pasteurised milk consumption meets obstacles as far as the low profit-margins are concerned, that result from the high dispersion of its few consumers in Greek province. The continuous commercial campaigns — on the product itself and the company name — supporting pasteurised milk, will definitely improve its «flat» profile and will contribute to its penetration in the provincial market. ●

References

(1) Fotopoulos C. (1992): New Trends in the Food Consumption and Marketing. 2nd Greek Agricultural Economic Society Conference at the Aristotelian University of Thessaloniki, 11th-12th December.
(2) Guseman P. et al. (1987): Traditional and Non-traditional Explanations of Food Consumption of Beef. Southern Rural Sociology, 5, p.p. 12-21.
(3) Kendall M. and Stuart A. (1979): The Advanced Theory of Statistics, Vol. 2, New York, McMillan Publishing Company, Inc., p.p. 587-588.
(4) Karapostolis, V. (1979), Consumption Models in Greek Rural Areas. Research series of Agricultural Bank of Greece.
(5) Kazakopoulos, L. et al. (1991), Attitudes toward Pork-meat in Greece. XIth European Nutrition Conference, Athens, May.
(6) Nash D. (1988): The Attitudes of Young People to Milk on a Beverage in Fritters (ed). «Consumer behaviour Research and Marketing of Agricultural products». National Council for agricultural Research. The Hague, the Netherlands.
(7) Papagiannakis M. (1986): Nourishment and Agriculture in Mediterranean countries. Research series of Agricultural Bank of Greece, No 2.
(8) Papaioannou, T. and Ferentinos, K. (1983), Mathematical Statistics. Athens.
(9) Tziafetas, G. (1988), Statistical Applications. Athens.