

Promotion of mountain food: An explorative a study about consumers' and retailers' perception in six European countries

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Abstract: *The purpose of the paper is to provide information –based on surveys conducted in several European countries- about how consumers and retailers perceive or expect mountain quality food products (MQFP). It uses surveys collected in the context of the “European Mountain Agrofood Products, Retailing and Marketing” (EuroMARC) project and uses principal components to assess consumers and retailers perceptions of mountain food. Although the analyses are explorative in nature, they indicate that there are clear and interpretable dimensions behind both consumer’s and retailer’s perceptions concerning mountain food products. The different factor analyses underlined three main dimensions behind the diverse sets of perceptions: local, business and market. From these, the cultural/local dimension seems to be the clearest component behind both consumer’s and retailer’s perceptions.*

Keywords: regional food productions, mountain food products

Introduction

The concept of food mountain products is well-known in some European countries but is quite new in other countries. It is possible to say that after the European Charter of Mountain Quality Food Products (ECMQFP) was launched in 2005 and the concept was officially established, it started to be used in different EU arenas.

In some cases, the ECMQFP has had a direct influence on the market, such as in the case of Norway where in 2010, seven thousand lambs were delivered in 2010 to Bjorli Fjellmat (i.e., a firm transforming meat products from mountain area) and they plan to get 1,500 in 2012 (Nationen - 01.10.2009, p. 08).

Although the products sell well and the demand is obviously increasing, there is no common understanding between the actors in the food chain about what mountain food products really represent. This paper focuses on two main actors: consumers and retailers, and aims at studying whether there are common fundamental ideas behind consumer’s and retailer’s understandings of the concept of mountain products. This is done building on recent results from the European research project “European Mountain Agrofood Products, Retailing and Marketing” (EuroMARC).

The specific research questions addressed in the paper are:

- Are there underlying (latent) patterns behind consumer’s attitudes towards various descriptions of mountain products?
- Are there underlying patterns behind retailer’s perceptions of mountain products and their reasons for selling such products?
- To what extent are there similar patterns (ideas) behind consumer’s and retailer’s orientations towards mountain products?

The structure of the paper is as follows: after presenting the background and introducing the concept of mountain products, we outline the methodology of the data and the study. Next, we present the empirical results from comparative data from Romania, Slovenia, Austria, France, Scotland, and Norway. Finally, we discuss the results and provide implications for the marketing of mountain food products.

Background

Although mountain areas covers almost 40 percent of the European areas and mountain food production is an important part for the European agricultural policy, very few studies concern consumers opinions and interests in mountain food.

“Tourisme durable en montagne” (Clarimont & Vlès 2008), was one of the first books dedicated to mountain food and it presents relevant knowledge about development strategies, tourism and sustainable production but not about consumers. In addition, a study about food mountain in Auvergne (Bernard & Udin 2007), a trainee report about summer tourism and food from mountain (Fresno 2005) and proceedings from a seminar with papers dealing with mountain food (e.g. Giraud & Petit 2003), provide interesting evidence about consumer’s interest in mountain food products that can be summarized by the following quotation: “The study’s results show that mountain products have a positive image (purity, authenticity, simplicity and even harshness). Four phases have been identified, and for each, consumers have expectations. They concern raw materials, transformation, product, distribution. The target consumer seems to be a person between 45 and 64 of age, with a good educational level, good income, who is sensitive to an idea of quality, and who trusts designation. Consumers would appreciate to receive more information about those products, and would trust an official label that would attest the quality of the product.” (Couget & Fouquet 1996).

It should be noted that as the term “mountain” is not an attribute that is readily found in the European food literature, in the paper we focus on topics that are very close such as local/regional food, niche food, organic food and quality food. In this respect, food from mountain areas can be said to be a type of local food, and can then be defined as food from a special geographical area nearby one’s place of residence or anchored to a special geographical area, but known outside this area (Amilien et al. 2008, p. 18). Hence, food from mountain is then a “niche product”, competitive with other food on alternative markets, like traditional food, regional food, local food or organic food. It should be mentioned that on the one hand, the “pluridimensionality” in the definition the mountain products is obviously a strength for the market, more than a weakness, because communication can easily play on different concepts, as food from mountain can be both local and traditional. However, on the other hand, this ambivalence may be a problem for consumers, who do not really know what a mountain label might mean, and what the products are.

In order to provide a better identification of the quality of mountain products in the market, Euromontana proposed the European Charter of Mountain Quality Food Products (2005) to allow “a better recognition and promotion of the role of farmers and enterprises that produce in the mountain areas in Europe.” In the charter, food from mountain areas builds on several elements and the concept of “mountain quality food product” is defined as one where all the following elements are fulfilled:

1. The primary raw materials are from a mountain area.
2. All stages of production are located in a mountain area.
3. Firms involved in production must adapt to their geographical environment.
4. Production must encourage maintaining biological, genetic and cultural heritage of mountain areas.
5. Producers of raw materials must be able to ensure traceability for the consumers and other interested.

Methodology

Factor analysis is the main technique for analysing the data in this paper. Factor analysis is a technique for reducing the number of variables (data reduction) and also detecting the structure in the correlations between variables (structure detection). The basis for the analysis is the correlation matrix or the covariance matrix between the variables. There are two versions of factor analysis: principal component analysis (PCA) that assumes that all variance in the variables should be used in

the analysis, and common factor analysis (CFA) that only includes variance that variables have in common with other variables. Often, these techniques yield similar results. Our choice of technique is PCA. The main reason for this choice is that PCA is the preferred technique for structure detection while CFA usually is recommended for data reduction (Tabachnick & Fidell 2001). Our main goal in this article is to detect how various indicators reflect a few underlying dimensions in the attitudes of consumers and retailers. To highlight the overall structure, only factor loadings of ± 0.3 or stronger are included and reported.

There are several criteria that can be used to evaluate the solutions of factor analysis. First, the number of dimensions can be decided on basis of the Kaiser criterion (keep all dimensions with at least an eigenvalue of 1) or the scree test (keep all dimensions until the drop in eigenvalue “flattens” out). We will mainly use the second criterion in our analysis.

In addition, there are two statistics that indicate the appropriateness of the factor analysis. The KMO (Kaiser-Meyer-Olkin) statistics is a measure of sampling adequacy, i.e. whether the partial correlations between indicators are small. This statistics should be at least 0.5 for a satisfactory factor analysis. Bartlett’s test of sphericity tests whether the correlation matrix is an identity matrix, i.e. that there are no correlations between the indicators. The test should be statistically significant.

We have also included Cronbach’s alpha which is not directly relevant for our research question since we focus on structure detection and not on data reduction and index construction. Nevertheless this statistics informs us to what extent an additive index of variables with high factor loadings on a factor are internally consistent or reliable. Ideally, the coefficient should be above 0.7 but it is very common to find low Cronbach’s alpha values when the variables have “short” scales, i.e. fewer than ten values (Pallant 2007).

Finally, a remark on level of measurement: The variables included in the factor analyses are formally to be considered variables at an ordinal level of measurement. PCA, however, requires interval or ratio level. The rationale for treating variables as interval level variables is that they are considered to be manifestations of underlying latent variables with a continuous scale (the intensity of the attitude).

Results and Discussion

Consumer survey

Consumers’ perceptions of mountain food products may be influenced by several factors: One aspect may be the cultural value of mountain food products, i.e. particular food products represent cultural identities, values and traditions. Other aspects may be related to rural development or health and environmental consequences. Consumers may for instance be interested in how mountain food complies with modern standards of hygiene and whether production of mountain is processed in an environmental friendly way or not.

In the consumer survey respondents were shown a list of statements concerning mountain quality products and asked to mark on a scale from 1 (strongly disagree) to 5 (strongly agree) how much they agreed or disagreed with the statements. The statements were:

- A. Mountain products are connected to specific cultural areas.
- B. Mountain products are produced in a traditional way by small scale producers.
- C. Raw materials from mountain areas can be processed to mountain products also outside the mountain area.
- D. Mountain products are not required to be healthy products.
- E. The main raw material of mountain food products does not necessarily need to come from a mountain area.
- F. Mountain products support local employment.
- G. Mountain products are produced and processed in an environmental friendly way.
- H. Mountain products have to comply with industrial standards of hygiene.
- I. Mountain products are part of the cultural identity of local communities

Figure 1 shows the average ranking of the respondents' answers.

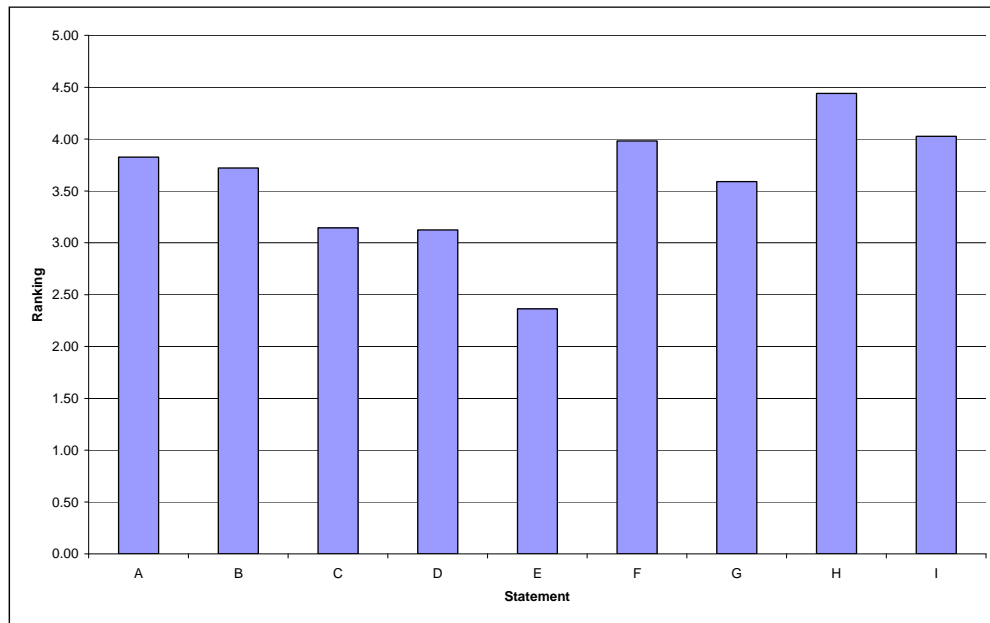


Figure 1. Consumers' ranking of statements related to mountain food.

Note: The number of observations per statement are: A) 1695, B) 1713, C) 1666, D) 1708, E) 1692, F) 1702, G) 1624, H) 1709 and I) 1715.

It is clear from Figure 1 that consumers on average tend to agree with the above mentioned statements. The most preferred statement, i.e., about the fact that mountain products must comply with industrial standards of hygiene, underlines that consumers expect food from mountain areas to be safe and hygienic. This point is particularly interesting in light of the other statements, as "H" was the only statement complying with safety issues.

Moreover, the concept of "industrial standards of hygiene" could be considered as the opposite to "non industrial" and "non-standardized" food products. But the answers show that there is no opposition, but complementarities between the different perspectives, as the most preferred statements (after "H") are linked to either small scale production, culture, identity, rural development or support of local employment. Those criteria are typical for consumers attitudes connected to local or typical food products, what allows us to think that the mountain dimension could often disappear back other features, or could be a precious added value.

A principal component analysis (PCA) (using a varimax rotation) was applied on the values obtained for the statements and it is presented in Table 1. The results indicate that one important dimension for "explaining" (statistically) the correlation pattern between the variables is what we have labelled as a local food dimension. This dimension distinguishes consumer's attitudes on the basis of perceptions of whether or not mountain products are: related to specific cultural areas, are produced in a traditional way by small scale producers, support local employment, are produced and processed in an environmental friendly way, and are part of the cultural identity of local communities. These factors have in common that they are not verifiable for the consumers, i.e. they can always be discussed, unlike the other elements.

The second component or dimension in Table 1, is what we have labeled as a production dimension. The statements that are correlated with this component are that the raw materials can be processed outside the mountain area that the raw material does not necessarily need to come from a mountain area, and that mountain products have to comply with industrial standards of hygiene.

Table 1. PCA of consumers' agreements/disagreements of statements related to mountain food (Observations=1429).

Statement	Component		
	Local food	Production	Health
Specific cultural areas	.555		.397
Traditional, small scale production	.558		
May be processed outside mountain area		.709	
Not required to be healthy			.857
Raw materials outside mountain area		.605	
Support local employment	.661		
Environmental friendly production	.673		-.322
Comply with hygienic standards		.537	
Part of cultural identity	.709		
Per cent of variance	24.168	14.038	11.935

Notes: KMO=0.685. Bartlett's test: $p < 0.001$. Only factor loadings above 0.3.

The third dimension concerns health aspects. The health variable, which is expressed in a negative way, comes out as a single factor in the results. Thus, we excluded this factor from the analysis and ended up with two factors. It should be noted that the PCA analysis run again without the health variable revealed the same two aforementioned factors.

The comparative part of the analysis consisted of studying whether or not the two found dimensions vary between the countries that participated in the study. Therefore, we constructed two additive indexes on the basis of the principal component analysis above: Local food index and Production index. The indexes have been standardised to vary between 0 (do not emphasise) and 1 (emphasise strongly). Descriptive statistics for the two indexes are shown in Table 2.

Table 2. Descriptive statistics for two indexes on consumer perceptions of mountain food products.

Statistics	Local food	Production
N	1,525	1,601
Mean	0.709	0.578
Standard deviation	0.176	0.192
Cronbach's alpha	0.638	0.269

Cronbach's alpha reveals that reliability or internal consistency was not satisfactory for the production index. Our interpretation of this is that while there is a clear cultural component behind consumer conceptions the production component is much less clear and consistent.

Figure 2 presents a comparison between countries. It reveals that there are relatively small differences between the six countries. In all countries, except Romania, the culture dimension seems to be emphasised more strongly by the respondents than the production related aspects (Romania is then an exception with the highest score on the production index and the lowest score on the culture index.) The results indicate that consumers in France and Slovenia emphasise culture somewhat more strongly than consumers in the other four countries, what could be logical if we put those findings in wider cultural and historical country contexts, but due to possible biases in the data we should not put too much weight on these findings.

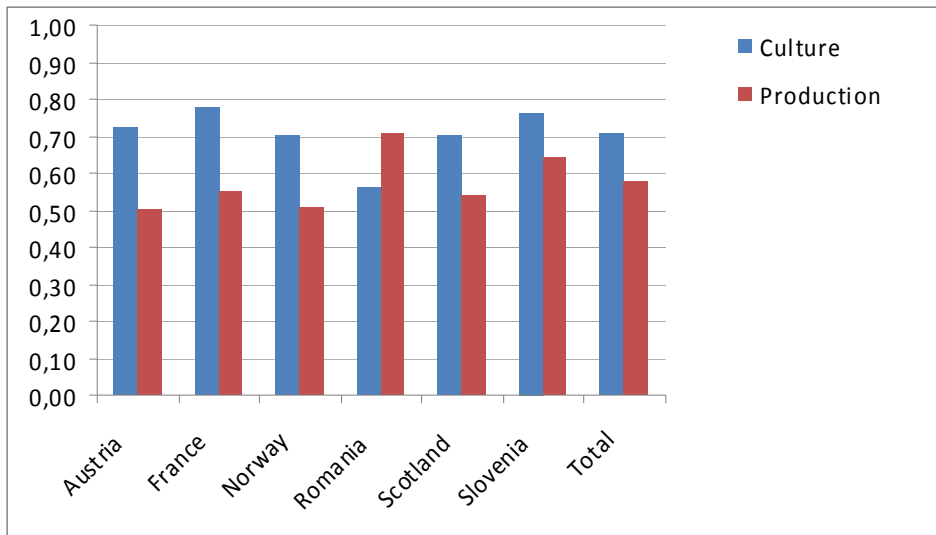


Figure 2. Mean values of local food index (blue) and production index (red) dependent on country.

Even though there seems to be small variations between countries multiple regression analyses with each of the indexes as independent variables and country, sex, age, education and occupation as independent variables reveal that country is far the most important variable for explaining variation in the dependent variables.

Retailer survey

The survey to retailers enquired about the reasons for promoting mountain food. The respondents were given the following options:

- A. Diversification of business
- B. To add value to basic farm produce
- C. To retain a greater margin
- D. To support mountain area producers
- E. Personal interest in regional / local food traditions
- F. To promote the region / locality
- G. To overcome a lack of suitable marketing outlets
- H. To respond to consumers' interest in the product
- I. To sell an innovative quality product
- J. To complement tourism activities
- K. To stock as requested by our headquarters or management, etc.

It should be noted that the previous statements were given to retailers that already were selling mountain products. Each statement was measured with a Likert scale ranked from 1 to 5, where 1 was not important and 5 was very important. Again it was possible to answer "do not know". The mean values are presented in Figure 3.

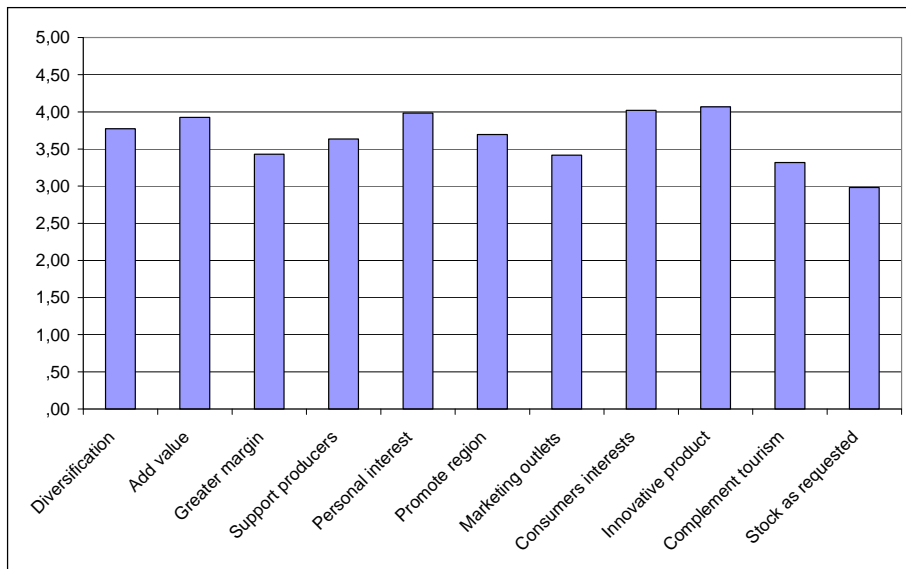


Figure 3. Retailer’s ranking of reasons for selling mountain food.

Figure 3 indicates that personal interest in traditional food and adding value to basic farm produce are important reasons for selling mountain products.

In addition retailers were asked to indicate how important various characteristics ought to appeal to consumers for their mountain quality food product. These characteristics were:

- A. Price / Value for money
- B. Short distance from products to consumer
- C. Support to small scale production
- D. Local origin
- E. Well known brand
- F. Healthy product attributes
- G. Environmental friendly production
- H. Taste

These questions were given to retailers that already were selling mountain products. Each statement was measured with a Likert scale ranked from 1 to 5, where 1 was not important and 5 was very important. Again it was possible to answer “do not know”. The mean results is presented in Figure 4.

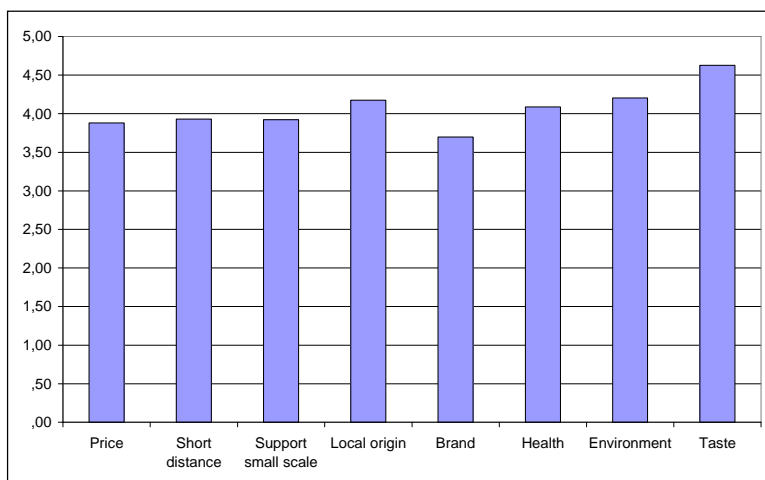


Figure 4. Retailer’s ranking of characteristics that ought to appeal to consumers for the mountain food product.

Figure 4 indicates that all of the characteristics that are mentioned are regarded as more or less important. Taste seems to be the single most important characteristic. The factor analysis in Tables 4 and 5 underlines different components/dimensions behind the two sets of perceptions.

Table 4. PCA of retailer's reasons for selling mountain food products (Observations=220).

Reasons	Component		
	Local	Business	Market
Diversification			.690
Add value		.496	
Greater margin		.550	
Support producers	.691		
Personal interest	.804		
Promote region	.744		
Marketing outlets		.724	
Consumers interests			.531
Innovative product			.689
Complement tourism		.755	
Per cent of variance	22.996	15.903	12.649

Note: KMO=0.646. Bartlett's test: $p < 0.001$. Only factor loadings above 0.3.

Table 5. PCA of retailer's opinions on characteristics that ought to appeal to consumers (Observations=337).

Characteristics	Component		
	Local	Health/ environment	Business
Price			.776
Short distance	.589		
Support small scale	.820		
Local origin	.717		
Brand			.734
Health		.845	
Environment		.790	
Taste	.452		
Per cent of variance	30.290	14.356	12.575

Notes: KMO=0.673. Bartlett's test: $p < 0.001$. Only factor loadings above 0.3.

From the tables it is possible to observe that the local dimension is central for "explaining" covariance both regarding reasons for selling mountain food products and opinions on characteristics that ought to appeal to consumers.

Regarding reasons for selling mountain food business reasons and market reasons are two additional dimensions in the analysis. Regarding characteristics that ought to appeal to consumers health/environment and business characteristics are two additional components.

If we construct additive indexes on the basis of the factor analyses above, we get six index variables.

Table 6 shows descriptive statistics for the indexes.

Table 6. Descriptive statistics for six indices on retailer's perceptions of mountain food products.

Statistics	N	Mean	Standard deviation	Cronbach's alpha
Reasons				
- Local	327	.6896	.23467	0.693
- Business	239	.5957	.22025	0.516
- Market	325	.7310	.18281	0.480
Characteristics				
- Local	355	.7847	.16273	0.614
- Health/environment	381	.7867	.19291	0.641
- Business	370	.6946	.20816	0.350

Cronbach's alpha reveals that reliability or internal consistency is not satisfactory for the business reasons index, the market reasons index and the business characteristics index. Our interpretation is

once more that the local/cultural dimension is the most consistent dimension regarding the perceptions of the retailers.

Table 7 shows how these indexes vary in the six countries. The main “pattern” is that there is not much variation between countries. Concerning reasons for selling mountain food, retailers in Austria and France are somewhat more inclined to emphasise local reasons. Business reasons seem to be less important in France than the other countries, while market reasons are most important in Austria.

Table 7. Mean value of indexes for reasons for selling mountain food and appealing characteristics dependent on country.

Country	Reasons for selling mountain food			Appealing characteristics		
	Local	Business	Market	Local	Health/ environment	Business
Austria	.77	.57	.81	.87	.80	.72
France	.73	.42	.70	.77	.71	.60
Norway	.61	.48	.68	.69	.80	.60
Romania	.69	.74	.66	.74	.72	.74
Scotland	.64	.54	.77	.84	.82	.64
Slovenia	.63	.50	.76	.75	.88	.76
Total	.69	.60	.73	.78	.79	.69

Concerning characteristics that ought to appeal to consumers, Austrian and Scottish retailers are inclined to emphasis local characteristics. Health characteristics seem to be less important in France than the other countries. Business characteristics do not vary much between countries.

Conclusions

Although this paper is explorative in nature, the analyses indicate that there are clear and interpretable dimensions behind both consumer’s and retailer’s perceptions concerning mountain food products and we can draw some conclusions.

The different factor analyses considered three main dimensions behind the diverse sets of perceptions: local, business and market. From these, the cultural/local dimension seems to be the clearest component behind both consumer’s and retailer’s perceptions. Both support for local production, interest in traditional food or local origin were central reasons in consumers and retailers’ attitudes.

The analysis also highlighted the relative homogeneity between countries, even though this variable seems to be the most important single source of variation. But taking into account the cultural differences as regards food between the six studied countries, we observe quite similar perceptions of mountain food products.

Finally, it should be noted that the term mountain food is seldom used, and is not well-known, for the majority of consumers and retailers. On the one hand, most respondents do not know the European definition, and on the other hand, they define the type of product through their own answers, emphasizing the importance of locality, tradition, health and technical standards for mountain food products.

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