

# THE INFLUENCE OF FACTORS ON THE LEVEL FOR THE FISH PASTE DEMAND

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The paper deals with the factors affecting the level of demand for fish paste. The data show that the price and non-price factors influence the level of demand for fish and fish products. The price of fish paste, the purchase power of population, the prices of substitute products, availability and quality of products belong to the most important factors of demand. Another factors are connected with the changes in the population consuming habits and they are presented by the trends of the healthy nutrition, desire for the fast food preparation and high-bred fish. The fish paste demand is also influenced by tradition.

fish paste; level of demand; factors of demand; trends

## INTRODUCTION

Under present conditions of market economy the success of an enterprise much depends on its ability to accommodate fast to the current situation on the market. It is presupposed, among qualified knowledge and information of those working in the management of an enterprise and sufficient level of utilisation of information technology, particularly the ability to obtain necessary information in decision-making process. It is above all information on the knowing of market, in which a given company works, competition, trends in the development in the branch etc. This information can be used to find the factors, which affect the level of demand for the given product. To know these factors then significantly contributes to increase of competitiveness of enterprise.

The aim of this contribution is to give information on factors affecting the level of demand for fish paste in the Czech Republic to entrepreneurs and managers of enterprises dealing with fish breeding and processing.

## MATERIAL AND METHOD

The contribution deals with the factor affecting the level of demand for fish paste. It includes some available information from published reports of the Fishery Association of České Budějovice, Ministry of Agriculture CR, Czech Office of Statistics, Research Institute of Agricultural Economics in Prague, literary data reported in references and web pages of Internet.

Marketing inquiry was an important source of primary information that was oriented to domestic fish market and fish products. Main target of the research was to find out preferences of consumers and their purchasing habits. The inquiry was carried out in 2000 as a pre-research done within internal grant of the Czech University of Agriculture in Prague, called "Marketing Instruments and systems of quality management – creation of competitive advantage in fish sector. The research itself was conducted in the form of personal inquiry on selected sites of Prague where information from 200 respondents were obtained. The structure of respondents is presented in Table I. The computer programs Excel and Word were used for processing proper and data evaluation.

## RESULTS AND DISCUSSION

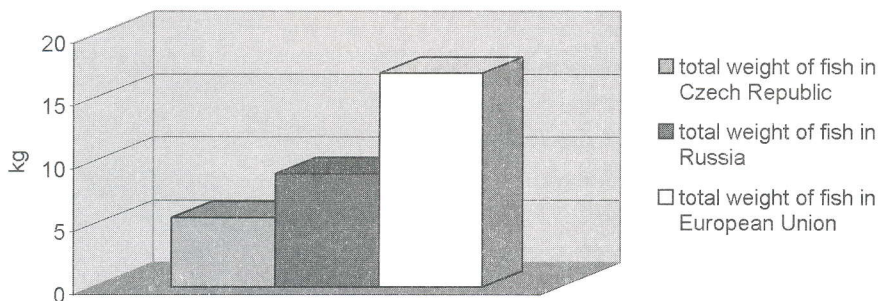
### Consumption of fish and fish products in Czech Republic, European Union and Russia

Consumption of fish and fish products of freshwater and marine origin is ranging in the Czech Republic in the present time approximately on the level 5.5 kg/head/year, where 2/3 of this weight are sea fish products and the rest are freshwater products. As reported the Czech Office of Statistics, even in 1999 consumption of fish paste fell to 4.1 kg/head/year. This datum is much undervalued in our opinion, what has been confirmed by the growth of utilisation of processing capacities of Czech producers. In 1999 the number of fish

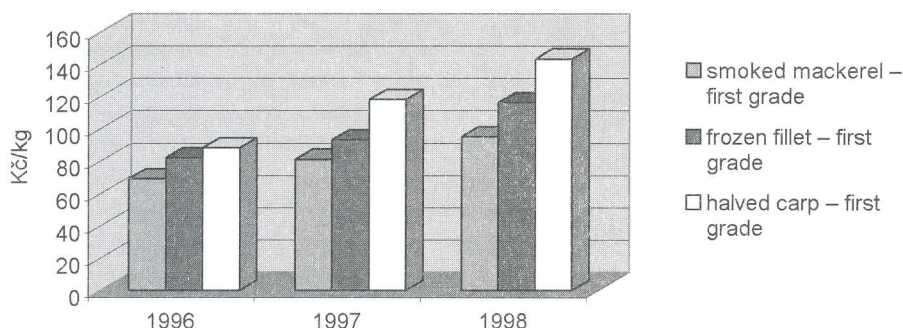
I. The structure of respondents according to their age and sex

Sex / Age	15–35 years of age	36–55 years of age	56-year old and more	Total number of respondents
Male	29	29	36	94
Female	33	35	38	106
	62	64	74	200





1. Comparison of fish (in kg/head/year) between the Czech Republic, European Union and Russia in 1998 (FEAP 1998)



2. Development of consumer prices in selected fish products in the Czech Republic (Ministry of Agriculture of Czech Republic)

intended for processing increased by 12% (Ministry of Agriculture of the Czech Republic 1999). The balance of foreign trade with fish is also markedly negative (–17 300 tons). Fish consumption is very low compared with other developed countries. For example, in the European Union countries this consumption is about 17 kg/head/year and in Russia about 9 kg/head/year (Fig. 1). Czech consumers buy majority of marine fish in the processed form, i.e. products with high VAT, but freshwater fish are most frequently bought as living. The share of processed freshwater fish is about 10% in their total consumption.

#### Factors affecting the level of demand for fish paste in Czech Republic

The level of demand for fish paste and fish products is influenced by factors of price and non-price character. The most important factors include the price of fish paste, the purchase power of population, the prices of substitute products, availability and quality of products. Another factors influencing the demand are connected above all with the changes in the population's feeding habits and they are presented by the trends of the healthy nutrition, desire for the fast food preparation and high-bred fish. The demand for fish paste is also affected by tradition.

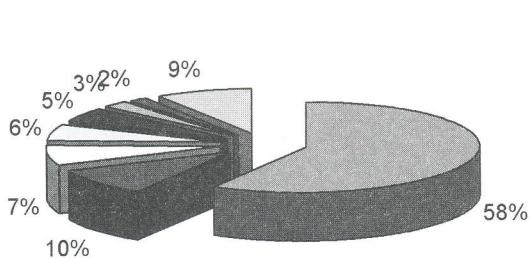
#### Price

The price is traditionally most important factors that influence the level of demand in the Czech Republic. It is evident that this situation is identical with that for demand for fish paste. It is typical for the Czech domestic market that prices of sea fish and products prepared

from them are lower than those for freshwater fish and fish products (Fig. 2). The main reason consists in the way of obtaining fish paste that is markedly reflected in its final price. In case of sea fish, it is fishery based on natural resources. On the contrary, freshwater fish management is fish breeding, i.e. controlled management when the time for obtaining marketable fish is three and more years in dependence on the fish species. It follows from it that costs of certain period to obtain "a fish material" is much higher than in freshwater fish management than in fishing. However, it can be expected that the price of sea fish will be reflected in the future in reduction following from decrease of the range of total allowed capturing in many species of sea fish (e.g. cods and herrings – by 15–25%), what can be significantly manifested in its level and structure of demand. Finally, the rate of processing is subsequently reflected in the final price of product. The level and facilities of processing capacities in the Czech Republic was insufficient and their establishing in the 1990s represented huge investments for plants that were, of course, manifested significantly in the price of final products. It is necessary to ask whether decrease of the price of fish paste leads to long-term increase of demand. If yes, to which level will be necessary to reduce the price? As reported the Research Institute of Agricultural Economics in Prague generally composition of food of the population is rather affected by prices. This has been confirmed in numerous inquiries, from which follows that lower prices motivate customers to higher consumption. For example, by the inquiry of the agency Mediant (Š í š o v á , 1998) conducted at the beginning of 1998 more than 80% of respondents told that the level of price is decisive for them when buying fish and fish products.

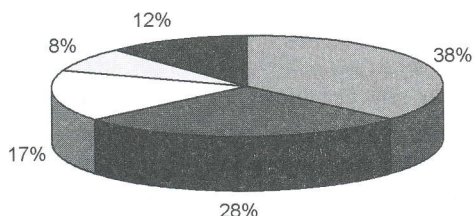
Consumer inquiry of the market with carp conducted in 1998 by Fishery Association of České Budějovice





- price
- distribution
- price and distribution
- price and advertising
- advertising
- selection of foods
- way of breeding
- the others

3. Factors affecting increase of consumption of carp meat in the Czech Republic (RCČB 1998)



- total appearance
- number of pieces in one packing
- package and packing
- trademark
- price

4. Effects of qualities of products on the purchase of fish and fish products in Prague

(RSČB) showed that 60% of inquired of 1700 respondents gave lower price as the most important factor for increase of their demand (Fig. 3). Decrease of prices, however, increases the demand but only for a limited period of time. This confirmed also decrease of consumer prices of carp by 5 to 8% in pre-Christmas time of 1998 (Ministry of Agriculture 1999). The similar level of prices was maintained also in the following year 1999. The level of higher demand does not correspond many times to fall of price that was on the limit of profitability in some products. We consider that decrease of prices is not a suitable instrument to reach higher long-term demand. Enterprises by lower price should rather solve the problem of seasonality of demand that is typical for fish market or a fast gaining the finance (cash).

#### Purchase power

Simultaneously with the price of fish paste purchase of customer acts on the level of demand. In particular, it is the level and development of disposable income because fish paste till now does not belong to standard components (meat) of foods of Czech population like in other developed countries.

It follows from our research conducted at the beginning of 2000 that only 12% of respondents gave the price as the most important factor influencing the purchase of fish and fish products (Fig. 4). This fact can be explained that the level of income in Prague belongs to highest in the Czech Republic.

#### Prices of substitution products

Prices of different kinds of meat, particularly of poultry, which represent significant substitutes of fish paste, are an important factor affecting the level of demand. This fact has been confirmed in the second half of 1999

when prices of fowl rose by approximately 20%, what has been manifested in increased demand for fish, though only temporarily. The similar situation can be expected also in 2000, when consumer prices of fowl in July rose by about 15%. How this fact will be manifested in the level of demand for fish paste, it can be estimated only with difficulties.

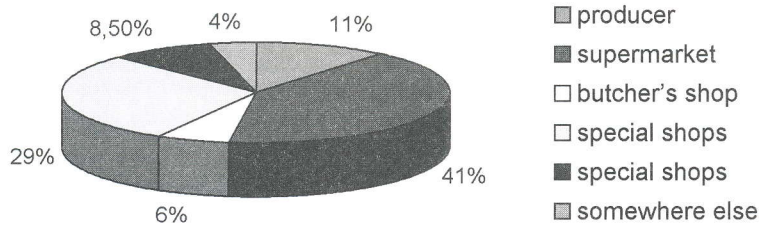
#### Availability of products

Availability of a product is an important factor influencing the demand. At the same time, we can argument by positive medical aspects of fish consuming, growing quality and higher VAT (value-added tax) etc. If fish products (made from carp or other fish) cannot be bought anywhere and particularly in expanding network of supermarkets, however good arguments cannot help. The sale of 80% of foods in developed countries is materialised by trade chains. For example, in Germany where consumers prefer shopping in large stores (over 800 m<sup>2</sup>) of the type of super- and hypermarkets. It is documented also by the growth of the number of shops in Germany in 1999 compared with 1995 from 14.3 to 17.2%. The development of share in the total turnover of grocery retail trade here rose from 37.9% in 1995 to 41.0% in 1999. On the contrary, the number and share in traditional food stores (below 800 m<sup>2</sup>) are continuously falling (www.cmad.de). The similar situation can be expected also in the Czech Republic. Our investigation proved that fish supermarkets and special shops (Fig. 5) are the most frequent site of buying fish.

#### The quality of product

Growing effect on the level of demand, not only in the field of fish, is obtaining quality of a product. Producers frequently do not use this word for their products





without defining its content in view of both technological and customer's aspects. In the region of fish production and processing definition of quality is fully missing. Nevertheless in the recent time suitable conditions have appeared to do so. This is a duty of producer to create the system of quality, known under the abbreviation HACCP or the use of a common trademark "Czech Carp" by domestic producers. Creation, introduction and certification of the system HACCP can help to increase trustworthiness of an enterprise and its products in customer's eyes. This will be certainly manifested in the level of demand, regardless of the fact that this way of ensuring the quality will make export easier. Another step in this region can be creation of domestic mark of quality, i.e. defining of conditions important in view of production and consumer. Conferment of this mark by means of professional organisation in co-operation with independent institutions (laboratories, research institutes, consumers' organisations) will guarantee to customer defined traits of quality. We think that it is another important factor how to influence the level of demand for fish. Similar facts are known in Germany where beside the quality mark, there is also higher degree of standardisation of production and product, the so-called stamp of quality. The whole production process from agricultural primary production, through processing to supply to a customer is assessed for its conferment. The fact of importance of these marks is documented that quality marks are used in Germany by 2828 producers for 12 354 products and according to the inquiries of quality marks are known by 87% of consumers (www.cma.de).

#### *Trend of fast preparation*

Experience from the European Union countries show that the level of demand for fish paste can be affected positively by wide and varied assortment of products with high value-added tax. European statistics even report that almost 80% of all reared freshwater fish are further processed into fish products (www.fao.org). The world fishery committee of FAO (is one of five main committees of FAO) considers finalisation of fish as one of most important factors affecting the level of fish consumption in developed countries.

This fact is closely connected with the change of feeding habits of consumers. In recent years more and more people refuse to devote much time to the preparation of meal and are oriented to the products of fast preparation or even they are concentrated on fast food. For example

in Germany in the past 8 years 31% growth appeared in the meaning of boarding-out, higher consumption of ready meals and ready-to-cook foods (www.cma.de). We can expect that this tendency with development of economy will hit also our country. Therefore it is necessary for Czech producers, if they want to keep the step with developed countries, to concentrate on the development of processing capacities and were finding in Czech consumers their requirements, need and preferences in this sphere.

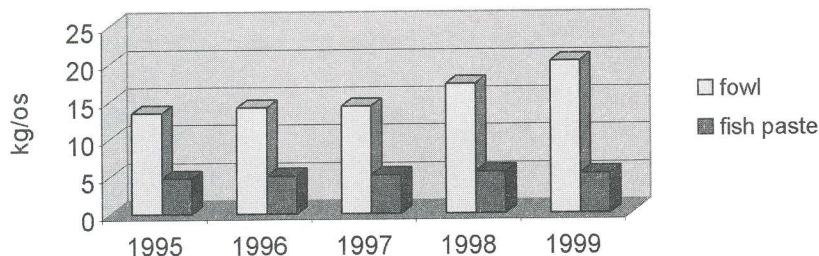
#### *Trend of high-bred fish*

Another marked trend affecting fish consumption consists in improving conditions of customers for high-bred fish. It is mainly the case of various species of predatory fish (pike, pike-perch), salmonids (salmon, trout) etc. In the eyes of customers these fish species represent "something better", for what they are prepared to pay even higher price, because with it they are buying a certain peculiarity. The Czech traditional fish is carp that represents about 87% of all production of freshwater fish in the Czech Republic, what does not correspond to this. If our producers want to use this tendency to increase demand on the domestic market, they have to increase production of these fish and fish products. Nevertheless, it is necessary to ask whether it is possible all these fish species to produce them successfully, i.e. technologically and economically, in significant numbers. As to the pond character of breeding, it is not possible up to now. Possible breeding in artificial conditions represents huge investments, which could cause that final product should be unmarketable compared with foreign products. The only possibility, which appears in this sphere and which is partly utilised is import of these fish from abroad and their subsequent processing in our plants. We think that it should be considered in the near future to enter into co-operation bilaterally advantageous with Czech fish-works and foreign ones – producers. Co-operation should enable foreign enterprises to penetrate better to the Czech market and to domestic enterprises – to increase their competitiveness of broader offer of assortment.

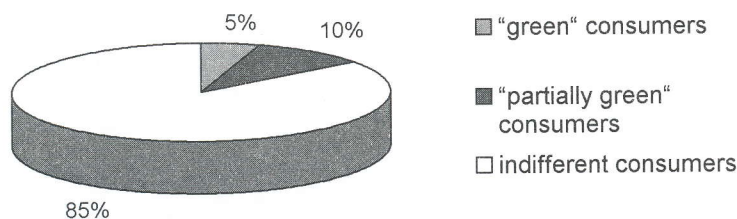
#### *Trend of rational nutrition*

Considering the above-mentioned changes in feeding habits, an increased attention has been paid in recent years to the trend of rational nutrition. An interest in





6. Development of consumption of fowl and fish paste in the Czech Republic in kg/head/year (Research Institute of Agricultural Economics Prague 2000)



7. The structure of consumers by perception of ecological origin of product in % (FEAP 1998)

healthy nutrition can be documented in growing demand for white meat (Fig. 6). Rational nutrition is based on varied and balanced structure of its different components, where can be found also fish paste, without any doubt, for its nutritional value. In EU countries in the recent years appeared a marked advertising of fish consumption and informing of the public on the importance of fish for human health. In Denmark, e.g. an extensive advertising campaign takes place for the third year, partly financed from the EU resources, generally oriented to fish consumption (i.e. not only bred). In this campaign TV spots, posters, various stickers, degustation in supermarkets with hostesses etc. Just to this campaign is ascribed the fact that consumption of fish paste rose during its materialisation by 12%. Researches in Danish consumers showed that the more people know about fish the more increases their value (FEAP, 1998).

It is suitable to ask whether the Czech population really stresses the health in alimentation. We think that it is not the case of middle and older generations. They are rather conservative in their habits, not only feeding. The turnover can be expected in young generation that receives new feeding habits and more cares of health what is a consequence of continuing globalisation. There is a paradox that most frequent consumer of freshwater fish are people of middle generation (RSČB, 1998). Is it reasonable to do advertising campaign oriented to health, such as in the trademark "Český kapr", roofing-in majority of Czech producers. The answer is, certainly yes, but by our opinion sole orientation of marketing activities on advertising of healthy nutrition will not bring a marked improvement.

#### Ecological trend

The similar situation can be seen also in the trend of demand for ecological products. In the developed countries segments of consumers oriented on ecological origin of product (Fig. 7) start to form. In the future it should be one of the factors affecting the demand of bred freshwater fish when this production may fill criteria of

ecological origin under certain conditions. There is a question whether Czech customer should be in the future content to pay some extra money for an ecological product. Despite it, it is necessary not to underestimate this trend, especially if under the present technologies fishing is connected with brutality and great damage (www.fao.org).

#### Tradition

Tradition is very significant factor influencing fish consumption. An example of traditional "fish countries" are Italy and France with consumption of 23 and 25 kg of fish per capita and year (www.fao.org), or Nordic countries with characteristic breeding of salmonids. In our conditions demand for fish is of seasonal character. The fish (mainly freshwater one) is perceived by consumers rather like festive, the fast food and its consumption, particularly of carp, is oriented on Christmas or Easter period of holidays when almost 67% of all sale of freshwater fish in Czech Republic is materialised (RSČB, 1999). On the contrary, regarding sea fish, there is no such marked seasonality. The above-mentioned finishing of freshwater fish and offering of extensive assortment in co-operation with suitably selected price strategy can solve this problem. The importance of tradition to consume freshwater fish is great in Czech conditions but producers should not rely too much on tradition. For example, in the German market there was a marked decrease of the consumption of the so-called "Christmas carp". This fall was due to greater interest in the Christmas turkey (Agrarmarkt, 1999).

#### CONCLUSION

To know and to study the factors influencing the level of demand for fish paste helps to fishing plants to orient on the market, to create marketing concepts and hence, significantly contribute to increase of their business activities. The future of fish management in the Czech

Republic is connected with capacity of plants to produce a wide and varied assortment of products with higher value-added tax and high quality, with their broad availability and greater flexibility to react on the development of prices. This all should be supported by information, advertising of fish consuming based on their health importance for human health. The trend of fast preparation can be used within advertising, when an emphasis is laid on obtaining of more free time of consumers of fish and fish products.

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### **Vliv faktorů na úroveň poptávky po rybím mase.**

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Práce se zabývá faktory ovlivňujícími úroveň poptávky po rybím mase. Ze zjištěných informací vyplynulo, že úroveň poptávky po rybách a rybích výrobcích je ovlivňována faktory cenového a necenového charakteru. Mezi nejdůležitější faktory patří cena rybního masa, kupní síla obyvatelstva, ceny substitučních produktů, dosažitelnost a kvalita výrobků. Další faktory ovlivňující úroveň poptávky vycházejí především ze změn stravovacích návyků populace a jsou představovány trendy racionální výživy, touhy po rychlé úpravě a přípravě jídla a ušlechtilé rybě. Poptávka po rybím mase je také ovlivněna tradicí.

rybí maso; úroveň poptávky; faktory poptávky; trendy

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