ANALYSIS OF THE COMPETITIVE STRATEGY OF HUNGARIAN MUSTARD SEED PRODUCTION

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SUMMARY

During the 1980's Hungary was the country where the area under mustard was greatest in Europe. However, during the last decade mustard cropping has radically decreased, and its specific yield has also dropped. The unfavourable process was further intensified by the fact that mustard is more and more considered a secondary plant and therefore grown on worse soils in most farms.

Unfortunately, there are no, or only imperfect, data on the size and number of farms producing mustard seed. According to interviews with companies having entered into production contracts with mustard growers and buying up their produce, the most frequent typical size of mustard cropping farms is 50-80 ha. At present, approximately 250-300 farms produce mustard seed, their number varying depending on sales opportunities. Based on regional data, mustard seed growing may be considered one of the relatively more concentrated branches of crop production.

EU accession being imminent, the evaluation of the competitiveness of the mustard sector is necessary. Therefore, in the course of the interviews questions were asked in this respect. Answers received were analysed using the Porter diamond model, based on which it can be stated that the most important tasks are to improve information supply within the entire product channel, and to establish contacts between operators.

INTRODUCTION

In Hungary mustard is grown as a secondary crop. Its acreage has ranged from 10,000 to 25,000 hectares over the past 10 years. The climate and most of the soils of Hungary are suitable for mustard growing, as it tolerates low temperatures in early spring and scarce precipitation during the spring and early in the summer. It grows on all types of soil except for extremely acidic and loose sandy soils. Many farmers start growing mustard because they have areas capable of being economically utilised by a few types of crops.

Mustard is utilised primarily as green manure and green fodder. It is able to produce 17-47 t/ha fresh mass containing 400-600 kg of protein, so it makes excellent green fodder if harvested before flowering.

Thanks to its large leaves, it makes excellent use of solar energy, and when used as green manure it increases the yield of the main crop by 5-10%. This favourable effect takes place primarily in the case of sugar beets (Eöry – Nagy, 1996).

Mustard is one of the most common spices, albeit it is used in different forms.

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Due to its long history of traditional and widespread use mustard is called the "spice of nations".

Three subtypes of mustard are widespread and used in different products:

- white mustard (*Sinapis alba L.*)
- black or brown French mustard (*Brassica nigra L.*)
- Indian mustard (*Brassica juncea L.*)

In Hungary, mostly white mustard is grown, but on smaller areas there is also brown mustard. The white mustard variety Budakalász Yellow is grown on the largest area.

White and brown mustard is used mostly in the form of mustard cream, mustard flour, and whole mustard seeds.

Mustard flour is used mostly as spice and the basic material of condiments. The favourable characteristics of mustard flour are as follows: good absorption of water and fat (possibility of slicing and keeping shape), enrichment in proteins, improved colouring and flavouring. The main area of using mustard flour is meat industry (production of sausages, salami, cold cuts), production of mayonnaise, salad dressings, sauces and gravy, flavouring for chips.

In addition to household use, mustard creams play an important role in flavouring sliced meat and in canned meat production. Mustard in the form of whole seeds may be used in spice mixtures and canned vegetables.

The favourable effect of mustard on health has been known for a long time. In the case of traditional therapies, mustard flour is used to treat inflammations of joints, rheumatism, muscle pain and rigidity.

PAST AND PRESENT OF MUSTARD GROWING IN HUNGARY

Farmers do not like to grow mustard despite its various opportunities for use, wherefore mustard yields and profitability have considerably dropped seriously over the last 10 years. During the eighties, however, it was Hungary that produced mustard on the largest area in Europe.

During the last decade the acreage and total production of mustard has shown significant fluctuation (Table 1). The area under mustard amounts to only 0.3-0.4% of arable land in Hungary. Its share of the production value is also low, about 0.2-0.3%.

Table 1.

Development of mustard production in Hungary, 1997-2001

Year	Sown area ha	Crop t	Average yield kg/ha
1997	14,180	12,299	868
1998	25,452	22,780	895
1999	23,796	20,495	861
2000	10,148	7,964	785
2001	8,721	6,886	790
Average	16,479	14,085	856

Source: Information in writing from HCSO, Department of Agricultural Statistics

Hungarian mustard seed growing shows an extremely great fluctuation, the source of which is the continuous change of the area under mustard.

Hungarian mustard seed production has a high percentage as compared with the major mustard producing countries of the world (according to the figures of the Canadian Special Crop Association). Between 1999 and 2001 our share of the world's mustard sown area and total crop was 2.3 and 3.1%, respectively, on average.

Average yield is the central issue of costs and competitiveness in terms of price. Favourable characteristics of the sown area, expenditure, and yield conditions result in more favourable costs, which improves the competitiveness of Hungarian mustard production. The comparison of yields covers the following groups of countries: major exporters, major regional importers, and main potential competitors in Central and Eastern Europe.

The level of Hungary's mustard seed production is lower by 20-30% and 45-75% as compared to major exporters (Canada and the Czech Republic) and main European importers, respectively.

Table 2.

Percentage of average yields of mustard seed in Hungary as compared to major competitors

Hungary=100

Competitors	1999	2000	2001
Exporters			
Canada	127.1	121.3	84.6
Czech Republic	132.4	120.4	92.8
Russia	68.1	86.4	48.7
Importers			
France	145.4	220.6	155.8
Germany	154.8	169.8	105.4
Potential competitors			
Slovakia	91.9	86.4	117.6
Romania	87.7	109.2	63.3
Lithuania	77.5	89.2	88.6

Source: Own calculation based on the HCSO database and data provided by STAT Communications Ltd., Canada

CHANGES OF MUSTARD SEED EXPORT AND IMPORT IN HUNGARY AND IN THE WORLD

Hungarian mustard seed production has considerably determined foreign trade in it.

Hungary's share of mustard seed export significantly exceeds the average of plant products, which proves its competitiveness. However, there are several circumstances as listed below which indicate that this competitiveness is uncertain:

- Hungary's share of mustard seed export fluctuates within a wide range, which depends primarily of the mustard seed crop;
- the total mustard seed crop exhibits significant fluctuations in different years, which depends primarily on changes of the sown area, and clearly

indicates how uncertain the growers' interests and profitability are;

- mustard seed constitutes a bulk product hard to differentiate, wherefore its production costs, exchange rate policy, and transport costs play a key role in its international competitiveness. Production costs are determined primarily by the yield, in which respect Hungary is in a worse situation as compared to her major competitors. However, Hungarian mustard seed has a considerable advantage consisting in its higher quality in comparison with potential competitors, which can remain also after the entry of Hungary into the European Union.

On the average of the years 1992-2000, Hungarian mustard seed export amounted to 14,169 t/year worth HUF 902.1 million/year. Export quantities show cycles of 4-5 years (1991-1994, 1994-1997, 1997-2001). The concentration of export markets is continuously high, the CR3 value ranging from 82.1% to 93.5%. Over the last nine years the most important export markets were Germany with 65.8%, Holland with 14.1%, and Austria with 8.6%. Since 1999, however, Austria has become the second most important market of Hungarian mustard seed exported. The dominant part of import comes from Germany, Romania, the Czech Republic, and Holland. Hungary's share of mustard seed exports in the world (in the period between 1995 and 2000) did not exhibit a firm trend and fluctuated considerably from year to year. The country's share of exports ranges from 4.1% to 7.1% and that of imports from 0.1% to 0.2%.

Table 3.

Quantity and value mustard seed exported from and imported to Hungary

Years	Exported quantity t	Export value million HUF	Imported quantity t	Import value million HUF
1992	22,435	443	-	-
1993	16,144	360	-	-
1994	8,442	280	1,165	38
1995	9,288	437	359	24
1996	15,839	980	258	25
1997	11,254	1,033	531	51
1998	16,521	1,857	390	51
1999	12,899	1,336	352	48
2000	14,699	1,393	450	37

Source: HCSO, Statistical yearbooks on foreign trade, 1993-2001.

No product balance sheet of mustard seed based on domestic statistical data has been prepared yet. According to estimates based on statistical figures available, and to interviews with experts, the product balance sheet of Hungarian mustard seed, on 1997-2000 average prices, is as follows:

Production	15.9 thousand t/year
Import	0.4 thousand t/year

Total assets	16.3 thousand t/year
Export	13.9 thousand t/year
Seed for sowing and loss	0.6 thousand t/year
Closing stock	0.6 thousand t/year
Domestic consumption	1.2 thousand t/year

On the average of the years 1995-1999, the country concentration indicator (CR5) of mustard seed export amounted to 87.8%. The five most important exporting countries and their market shares are as follows: Canada 67.8%, Hungary 5.4%, Holland 5.2%, the Czech Republic 4.7%, and Russia 4.7%. Among the exporters, Holland is dominantly a re-exporter, her re-export amounting to 68.1% of her annual import. Her net import equals to 31.9% of total import (own consumption). Excluding Holland's re-export, the share of Canada is 61.5%, that of Hungary 5.7%, that of the Czech Republic 5.0%, and that of Russia 4.9%. There is a significant difference also between the trends of export sales of exporters. While the export of Canada shows a lesser fluctuation from year to year, that of Hungary fluctuates much more significantly. The export of the Czech Republic is characterised by a dynamic growth, but Russia may be called a considerable exporter only in certain periods (in case of shortages).

For Hungary, markets accessible are some countries of the Middle East and Africa, e. g. Israel, Kuwait, Morocco, Saudi Arabia, and the United Arab Emirates. However, the import capacities of countries that can be reached at reasonable transport costs is insignificant amounting merely to 587 t/year on average.

The concentration of mustard seed import (CR5) is also high, 81.4%. Most significant importers are (based on the averages of the years 1995-2001): Bangladesh 29.1%, USA 21.6%, Germany 13.1%, France 10.6%, Holland 7.0%. Another significant importer is also Japan with a market share of 3.6%. The quantities imported by the most significant importers have significantly fluctuated from year to year during the period analysed.

CHARACTERISTICS OF THE STRUCTURE OF COMPETITION IN THE MUSTARD SEED SECTOR

The most important change in years to come will be the accession of Hungary to the EU, in the context of which new competitive conditions will come into being. Therefore the evaluation of Hungary's competitiveness as compared to EU Member States is extremely important (Lehota, 2003).

The competitive structure of the mustard seed sector was analysed on the basis of the Porter competition model, the main areas of which are: competition within the industry, bargaining power of suppliers and buyers, threat of potential entrants, threat of substitute products, and tools of competition applied.

The bargaining power of suppliers

The most important suppliers in the field of mustard seed production are seed breeders, and the manufacturers of fertilisers, pesticides, machines and their spare parts. The market concentration of suppliers is very high, so they have a great bargaining power. The application of the latter is enhanced by the fact that suppliers usually have differentiated products. Farmers have limited information of products, in consequence of which the latter are hard to compare, whereas the pace of product development and change is relatively fast. The competition between operators is typically a competition of products; competition of prices is caused mainly by the weak income and financial position of farms and the price flexibility deriving from this. The most important suppliers

to primary mustard seed processing plants are farmers themselves, and such factors as permanent overproduction, significant fluctuation in production, and financial problems (i. e. the compulsion to sell their produce at any price) decrease their bargaining power. As for suppliers to secondary food processing industries, their bargaining power is differentiated.

The bargaining power of buyers

The supplier/buyer relations are analogous: farmers have a relatively low bargaining power against companies for which they produce on the basis of contracts, and decisively have to accept prices they offer (Lehota – Debrecen, 2003). The bargaining power between secondary processing and primary processing is differentiated. The conditions of competition in the mustard seed sector have been, and are still being, significantly transformed by the increasing concentration of retail trade. In addition, there are also such strong trends as centralisation (increase in shop sizes, elevation of the level of making purchasing decisions), integration of retail functions (wholesale and retail, domestic and foreign trade), and increasing internationalisation of the retail trade. The very fast and radical changes described above have clearly modified the conditions of bargaining power in favour of the retail trade. It has become the force directing trends and determining changes in the sector. The intensity of competition between retail chains, which is mainly a price competition, is also clearly increasing. Price competition considerably affects supplier prices (list prices, discounts, and terms of payment). In addition to price competition, there are also increasing requirements to food quality and safety. The existence of competition between suppliers is a general phenomenon in the relationship between processing industries and trade. The bargaining position of market leaders and producers of high-quality products is more favourable on the market. Persons wanting to enter into retail chains at present are in a much more difficult situation than current suppliers. The obvious increase in the bargaining power of retail chains is shown by the increasing spread of own brands the share of which is 7-8% on average. Suppliers are considerably differentiated in respect of size, degree of organisation, and preparedness.

Threat of substitute products

Every company in any industry competes with industries that produce substitute products. The latter limit the possible return of the first.

In the case of mustard seed production, the competition among substitute products goes on primarily for the use of land, the key resource. In the case of more favourable price and income conditions the competitive position of cereals (primarily bread grain) becomes stronger. Mustard seed is primarily grown in areas where soils are worse, thus it competes primarily with wheat, barley, oat, and rapes. The consumption of most kinds of mustard, mayonnaise, sauces and gravies is connected with meat consumption as supplementary products. Within the different types of meat the above mentioned supplementary products are consumed mostly with beef, pork, game and other red meats, and to a lesser degree with poultry and fish. Demand for the above products is also expected to increase parallel with the increase in meat consumption, whereas the growth rate of red meat consumption will be lower than the average growth rate of total meat consumption.

Another important field of the consumption of mayonnaise and dressings is their addition to salads and pasta whose consumption may continue to increase as health-conscious eating habits gain strength. The competition of mustard-based products with substitute products constitutes mainly a competition within the same product group. The consumption of dry sausage and salami exhibits relatively high income elasticity but may be linked primarily to the group of traditional consumers. Due to the relatively high fat, cholesterol, energy, and spice content of these meat products, health trends work against the increase in their consumption. Their substitution may be based primarily on hams and meat products made of non-red meat. The most important group of substitute products for canned vegetables and pickles is the use and consumption of frozen vegetables. Chips products compete with other snacks (seeds, extruded sticks, etc.).

Threat of potential entrants

New entrants in industries bring with them new capacities, want to secure a market share for themselves, and often have significant resources.

During the last decade, a significant number of new entrants have appeared on the markets of the mustard sector: foreign owners, new Hungarian owners, re-utilisation of old capacities and green-field investments. The slow growth of the market, the permanent and significant surplus of capacities, the low attractiveness of the industries (due to slow growth, low profit rate) will rather result in exit from the market in the future. New market entrants can be expected rather on new and dynamic markets. The increase in requirements to quality, food safety and hygiene, along with the adoption of EU rules, are likely to result in the exit of numerous operators from the market, primarily in preserve and pickles production. In contrast, however, Hungary can expect EU companies to appear in her market after EU accession. These companies are considerable potential entrants and will cause strong competition.

Tools of competition applied

There are basically two groups of tools of competition: pricing and non-pricing ones. Prices, price discounts, terms of payment and of delivery belong to the first group, and product range, quality, product development, and sales promotion (advertising, PR, branding) to the second (Porter, 1993). Price competition will continue to be strong in all industries as a consequence of the increasing price pressure from retail trade and of the increasing competition on foreign markets (EU companies). Price competition is expected to dominate also in the production of mustard seed, spice mixtures and mustard flour, with product competition playing here a lesser role. In the field of producing mustard, mayonnaise, sauces, salad dressings, soup powders and chips, product competition is expected to remain strong in addition to price competition, which will be accompanied by strong branding and sales promotion activities. In the case of condiments, dry sausages and salami, canned vegetables and pickles, price competition will remain dominant in contrast to product competition and branding activities. The intensity of competition (both pricing and non-pricing) may be reduced by means of consolidation of industries, concentration, coordination of supply chains, and establishment of strategic alliances and long-term supplier relations. However, this has two important prerequisites: fast

clean-up of industries and downsizing of the significant surplus capacities, on the one hand, and regulation of the competition between retail chains becoming stronger and stronger, on the other hand. Parallel to the reduction of the number of market operators and the increase in concentration, the transparency of the market is expected to increase. It is absolutely necessary to improve market information supply organised by state and professional bodies for both farmers and companies for which they produce mustard seed on the basis of contracts.

CONCLUSIONS

Mustard may play an important role in the future among special the special products of plant production both as main and preceding crop. The expansion of mustard seed production is justified by several direct and indirect advantages unutilised so far. In terms of cultivation techniques it is most favourable to grow mustard between two grain crops because it reduces the number of several soil parasites. Therefore its effect in reducing monoculture is indisputable, while it also enables grain yields to be increased as well.

The increase in its production is justified also by the fact that there is demand for several times the quantity of mustard seed produced currently for export sales. The sector could be stabilised after securing a greater export market for it.

Based on the analysis of the structure of competition, following conclusions were drawn:

- the sector is obviously directed by retail trade;
- the price competition between retail chains has a direct impact on supplier prices;
- the bargaining power of suppliers (farmers) is weak, and they have to accept any price offered within the sector;
- as a result of EU accession the number of processing companies will increase, which will induce considerable competition on the market.

As far as the future is concerned, it is absolutely necessary to improve information supply and to establish relations between operators within the product channel. It is important to create a closer system of relations not only between consecutive operators but also along the entire product channel. The establishment of long-term supplier relations between farmers and companies for which they produce mustard seed on the basis of contracts has special importance.

On areas with appropriate soil characteristics a yield surplus of up to 1.5 t/ha can be achieved, since mustard reacts to fertilisation in a very positive way. Another possibility for increasing average yields is the breeding of good varieties. Naturally, it is also indispensable to comply with the appropriate technological requirements in order to achieve high yields.

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A HAZAI MUSTÁRTERMESZTÉS LEHETŐSÉGEI A NEMZETKÖZI PIACON

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A '80-as években európai viszonylatban Magyarország termelte a legnagyobb területen a mustárt. Az elmúlt 10 évben viszont termesztése erősen visszaszorult, fajlagos hozama is csökkent. A kedvezőtlen folyamatot tovább erősíti, hogy egyre inkább másodrendű növényként kezelik, s így a gazdaságok nagy részében a kevésbé jó talajokba vetik.

A mustármagtermelésben résztvevő termelőgazdaságok méretére, számára vonatkozó adatok nem, vagy csak hiányosan állnak rendelkezésre. A termeltetésben, felvásárlásban résztvevő vállalkozásokkal készített szakmai interjúk alapján megállapítható, hogy a leggyakoribb tipikus ágazati méret 50-80 hektár körül alakul. Napjainkban megközelítőleg 250-300 gazdaság foglalkozik mustármagtermesztéssel, amelyek köre az értékesítési lehetőségek függvényében évente változó mértékben

szűkül, illetve tágul. A regionális adatok alapján a mustármagtermelés a viszonylag koncentráltabb növénytermesztési ágazatok közé sorolható.

Az EU csatlakozás közeledtével a műstárszektor versenyképességének megítélése is szükségessé válik, ezért a szakmai interjúk során a vállalkozások versenyképességi helyzetére is rákérdeztünk. Az elemzést a Porter-féle gyémánt modell alapján végeztük, mely alapján megállapítható, hogy a legfontosabb feladat a teljes vertikalitás termékpályán belüli információellátottság javítása és a piaci szereplők közti kapcsolatrendszer kiépítése.