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Area II. Effective Food Chain Management

**NEW DESIGNS IN THE HONEY AGRIBUSINESS
The case “Mieles naturales de la Bahía – MR”**

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ABSTRACT

World production of honey is approximately 1,3 million tons, of which 350,000 are commercialized in the global market. Argentina produced 80,000 tons during 2004, of which 70,000 tons were exported for a total of 123 million dollars. Argentina is the second world exporter of honey, right after China –in volume– and before Mexico –in quality)⁵.

In Argentina there are about 3,5 million beehives handled by approximately 28,000 apiculturists⁵. The greatest concentration of beehives is found in the province of Buenos Aires (50 % of the total). Internal consumption of honey is around 180-200 grams per inhabitant per year, which is rather low when compared to that of countries like the US, Japan or Germany (1 kg per inhabitant per year). Because of this, 90% of the production of honey is exported, mostly bulk. 70% of the honey export is in the hands of 10 companies, and there is great concentration in channeling the production. The main destination for Argentine honey is Germany (43% of the total production)⁵.

Mieles Naturales de la Bahía is a group of 13 producers who operate 3000 beehives in the area of the Bay of Samborombón, in the province of Buenos Aires, Argentina. The group has designed a system of Good Practices Protocols with their own brand and is offering a protocolized, traceable product in the global market starting with the 2006 harvest. This design hopes to be effective in adding value for customers and allowing producers to have access to them without so much intermediation. Some restrictions in the development of the design are mentioned.

1) DESCRIPTION OF THE WORLD MARKET FOR HONEY AND ARGENTINA’S INSERTION IN IT.

Honey is the sweet product made by the worker bees with nectar from flowers or exudations from other live parts of plants or present in them, which they collect, transform and combine their own specific substances and storing it in honeycombs

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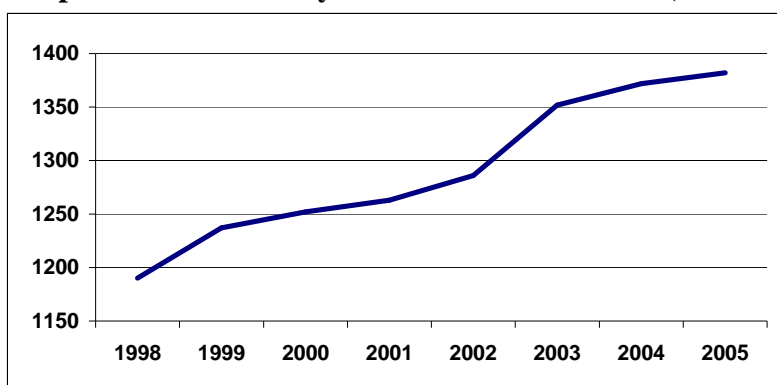
⁵ SAGPyA

where it ripens until completely formed.⁶ Honey is a food with nutritional and medicinal properties that have been known since antiquity: they were already appreciated by the Greeks and Egyptians. At present, besides direct consumption, its use is generalized both in food and pharmaceutical industries.

World demand of the product is very high; although average world consumption is about 220 grams per inhabitant per year⁷, average consumption in developed countries is 650 grams per inhabitant per year⁸ (European Union, the US, Canada, and Oceania). Meanwhile, average consumption in developing countries is 133 grams per inhabitant per year⁵ (Africa, Asia and South America). The latter have adopted the role of suppliers of those countries with larger consumption. Among the highest-consuming countries are Austria, Greece, Switzerland and Germany, which consume over 1,000 grams per inhabitant per year⁵; they all belong to the EU, which shows the largest average per capita consumption –700 grams per inhabitant per year⁵. This helps explain why almost 50% of world exports of honey are destined to this region (199,975 tons of a total of 401,589 commercialized⁹).

The growing demand of natural foods at world level has driven an increase in production. Figure 1 shows an increase of approximately 10% of the world production of honey in the past 5 year.

Figure 1. World production of honey between 1999 and 2005 (thousands of Tn.)



Source: Author's own, based on FAOSTAT data.

Among the main honey producing countries are China, Argentina, the US, Turkey, Ukraine and Mexico. Together they concentrate 48% of world production. China stands out with a production three times as large as that of Argentina, who placed as second largest producer in 2003, surpassing the US for the first time in history. This was a consequence of a great harvest in this South American country and a drop in production in the US due to climatic factors. Figure 2 shows, in thousands of tons, the production of these countries during 2005.

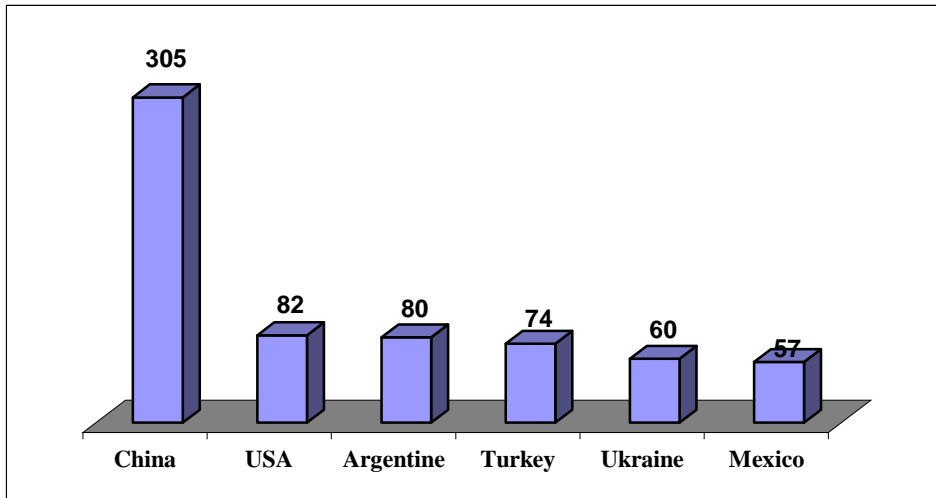
⁶ Article 782 (Res 2256, 16.12.85) Chapter X Food Code

⁷ FAOSTATS, 2002.

⁸ SAGPyA.

⁹ FAOSTATS 2003

Figure 2. Production of the main honey producing countries during 2005 (in thousands of Tn.).

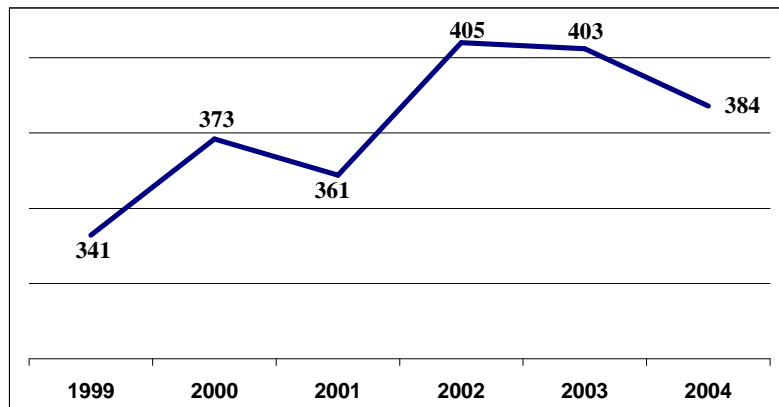


Source: Sagpya, based on FAOSTAT data.

In the last few years there has been a noticeable increase in production in the Eastern European countries. This is fundamentally due to their incorporation into the EU and the latter's high demand of honey.

Honey is basically commercialized in bulk in the international market, in 330 Kg. (728 lb.) barrels. Figure 3 shows the evolution of volumes of honey (in thousands of tons) commercialized in the past 5 years. It can be seen that approximately 30 % of the world's total production is exported.

Figure 3. Volumes of honey commercialized in the global market (in thousands of Tn/year).

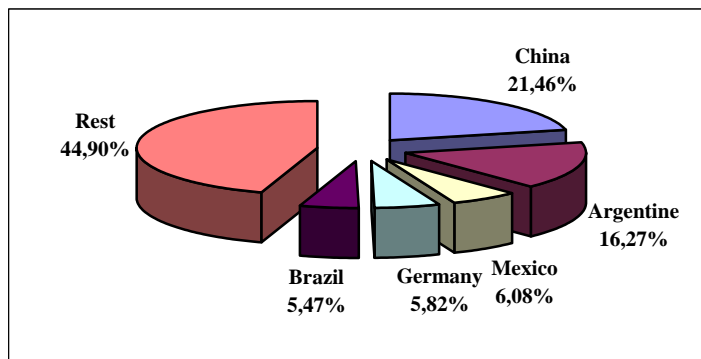


Source: Sagpya, based on FAOSTAT data.

The two countries with greatest market participation are China and Argentina; together they concentrate almost 40% of world exports. Mexico, Germany and Brazil are also important players, Brazil having shown great evolution during the past year. Figure 4 shows the participation percentages in world exports of the most important countries. China occupies the first place among honey exporters with 80,2 thousand tons, which correspond to 30% of its total production. Although it has a low per capita internal

consumption (200 grams per inhabitant per year¹⁰) its internal market consumes a high proportion of the production because of its large population (1,311,709 million inhabitants¹¹).

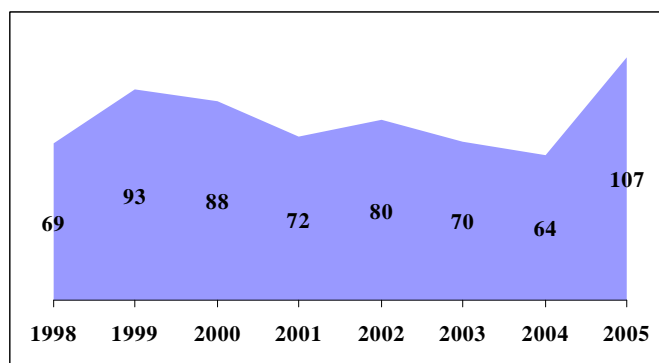
Figure 4. Participation percentages in world exports of honey - 2004



Source: Sagpya, based on FAOSTAT data.

Argentina also shows low per capita consumption per year (220 gr.¹⁰), but it exports 95% of its production. To conclude, it can be seen that China's importance in the market is due to its large production, while Argentina's is due to the relation between its production and the small size of its domestic market. Figure 5 shows the evolution of Argentine exports between 1998 and 2005. In can be observed that in 2004 there was a great drop in exports. This was due to the fact that traces of nitrofuranes¹² were found in an Argentine shipment to Great Britain¹³, generating the closing of many markets that are inflexible in the presence of this substance*.

Figure 5. Evolution of Argentine exports of honey between 1998 and 2003 (thousands of Tn.)



Source: Sagpya.

¹⁰ FAOSTATS 2002

¹¹ FAOSTATS 2003

¹² A group of antimicrobial substances used against some pathogenic agents. Tests have shown that they show mutagenic (ability to alter cell DNA), carcinogenic (ability to cause tumoral transformations in healthy cells) and teratogenic (ability to cause alterations in embryonic development) potential (Report of SENASA's Committee of Apicultural Sanitary Emergency <http://www.senasa.gov.ar/sanidad/abejas.php>)

¹³ Síntesis Apícola. October 2003

(*) Although nitrofuranes constitute a carcinogenic substance, its consumption must be extremely high for them to affect a person's health, so exports were possible to less demanding markets. This action was considered a non-tariff barrier and an internal barrier for exports imposed by SENASA (Lucía Ríos, FARLI S.A.)

Figure 6 shows the evolution of the volumes of Argentine honey exported until December 2005. Argentina has a low storage capacity of the product; this is why there are export “peaks” during the summer months (January-March), the time of the harvest. It can be seen that exports fell abruptly during the months when the nitrofuranes were detected (August 2003) and that the export median for the summer months was not reached in the summer of 2004. During the first months of 2005 there was a great increase of exports compared to 2004. Although the summer peak was also present that year, the drop was not as abrupt as in other years. The drop started only in June-August. It is worth mentioning that 2005 showed a record in honey exports (107 thousand Tn.) that can be explained in terms of the low exports of 2004, that is, there was an effect of “reopening of the markets”.

Figure 6.

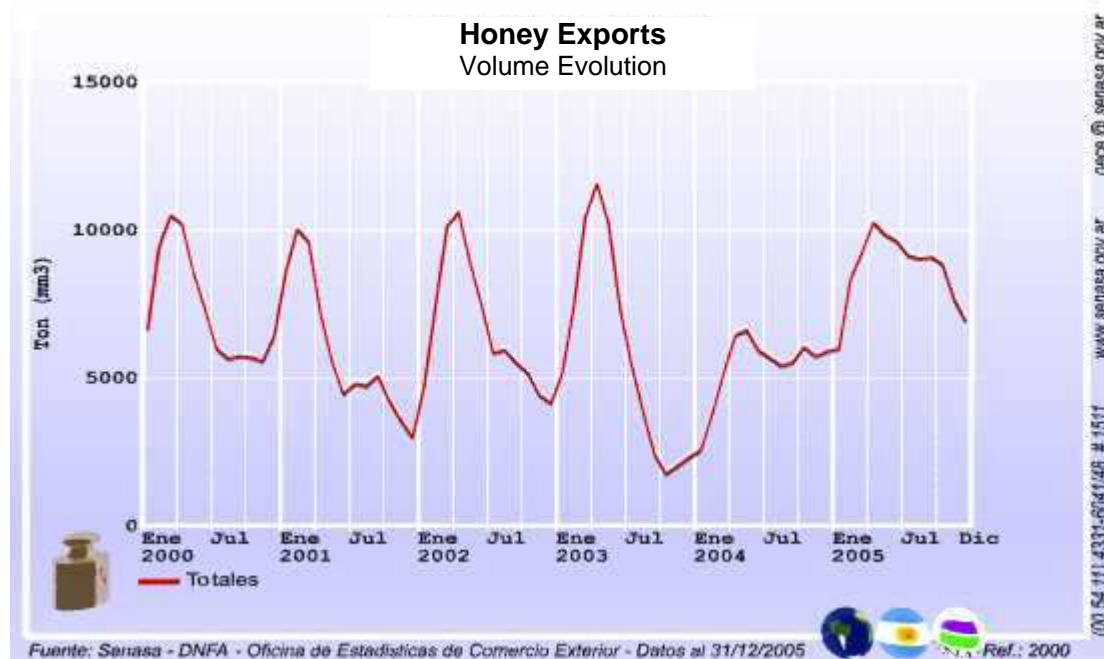


Figure 7 shows the evolution of Argentine exports to the most important destinations. The European Union imports most of the Argentine honey. The second largest destination is the United States. From the end of 2003 to mid- 2004 exports to this country were closed because Argentina was on trial for dumping. Later the US opened exports preferably to businesses that were able to prove that they were not performing any dumping, and applied a tariff of 36% + 5% for the rest¹⁴

¹⁴ Regúnaga M, 2005 Class of the “Escenario Agroalimentario y Mercosur” module (Agrifood Scene and Mercosur). Postgraduate course in High Management in Food and Agribusiness. Food and Agribusiness Program, FAUBA

Figure 7.

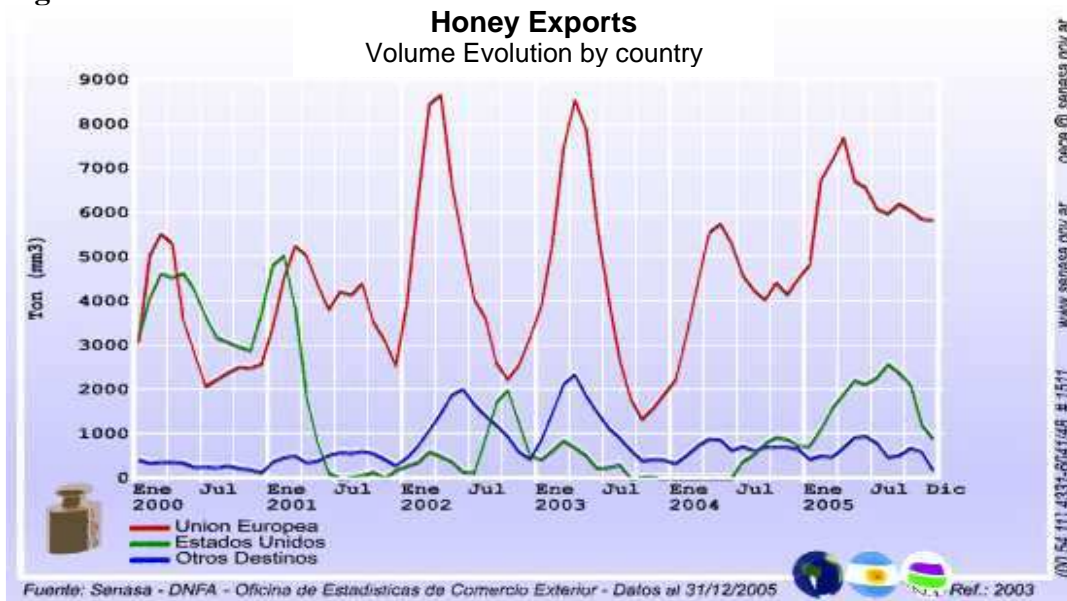


Figure 8 presents the price evolution from 2000 to the end of 2005. A very good price can be seen between mid-2002 and mid-2004. This was due to different reasons, among which was a drop of the American production due to climatic factors and the withdrawal of Chinese honey from the market because of the presence of chloramphenicol residues¹⁵.

Figure 8.



2) SITUATION OF ARGENTINA

Argentine apiculture entered a period of expansion in 2002 with the start of an internal economic scene favorable for production. The country has the potential for about 4,5 million beehives¹⁶ –of which only a little less than 4 million exist at present. Exploiting apiculture with the maximum capacity of beehives that the country can take would

¹⁵ Síntesis Apícola. August 2002

¹⁶ Invertir en la Argentina: Miel. (Investing in Argentina: honey) Agency for Development and Investments.

increase honey production by 12% –about 10,000 tons– an amount that would go almost completely into the external market.

On the other hand, the productivity of the system might be jeopardized by the potentiality of monoculture and the use of herbicides associated to direct sowing¹⁷. According to the specialists, production per beehive has been steadily dropping for years due to a lower variety of flowers in the fields.

Argentina has a great diversity of honey producing areas. Although most of the production takes place in the province of Buenos Aires, there is a great boom of other producing areas. This is due to the fact that there exist different kinds of honey according to the vegetation of the area where the apiaries are located, and this allows the producer to differentiate his product according to its composition in relation to geographic origin. Another important possibility for differentiation is production under organic protocol and certification.¹⁸

Table 1 shows the productive areas and their participation in production¹⁹. Yield per beehive varies greatly according to climate, region and handling. This is why there are areas with a yield of 60 kg. or more per beehive and areas that barely go higher than 20 kg. An average value of production per beehive was taken in each area in order to be able to compare them:

Table 1. Percentage of participation and yield per beehive of the provinces in the production of honey.

Province	%	Yield/beehive (kg/year)
Buenos Aires	42%	37
Entre Ríos	17%	35
Santa Fe	11%	30
Córdoba	10%	35
La Pampa	7%	24
Rest	13%	28
COUNTRY TOTAL	100%	30-35

Source: Sagpya

In Argentina there are approximately 33,000 registered apiculturists who own about 4 million beehives. There are many apiculturists who produce informally. Most apicultural activity concentrates in the province of Buenos Aires. (See Table 2). This is due to the closeness to the commercialization channels and the type of honey obtained based on the climate and the vegetation of the province.

¹⁷ Damiani, A., 2002

¹⁸ Napolitano, G. 2002 y 2005.

¹⁹ SAGPyA 2005

Table 2. Number of beehives, apiculturists and beehives per producer in the provinces of Argentina

Province	N° of beehives	N° of producers	Beehives / producer
Bs. As.	1,652,400	10,200	162
Capital	182,005	1,352	134
Catamarca	2,272	31	73
Córdoba	396,998	4,104	96
Entre Ríos	690,930	4,265	162
La Pampa	279,932	1,505	186
Santa Fe	433,160	4,165	104
Sgo. Del Estero	49,695	1,670	30
Mendoza	70,470	870	81
Chaco	52,272	594	88
Río Negro	34,687	424	81
Corrientes	23,000	350	66
Tucumán	26,410	190	139
San Luis	26,410	507	52
Misiones	18,000	1,200	15
Neuquén	15,407	576	27
Formosa	17,296	491	35
La Rioja	8,676	207	41
San Juan	3,000	45	67
Chubut	3,000	120	25
Jujuy	1,400	50	28
Salta	3,935	185	21
TOTALS	3,991,355	33,101	78

Source: Sagpya 2005

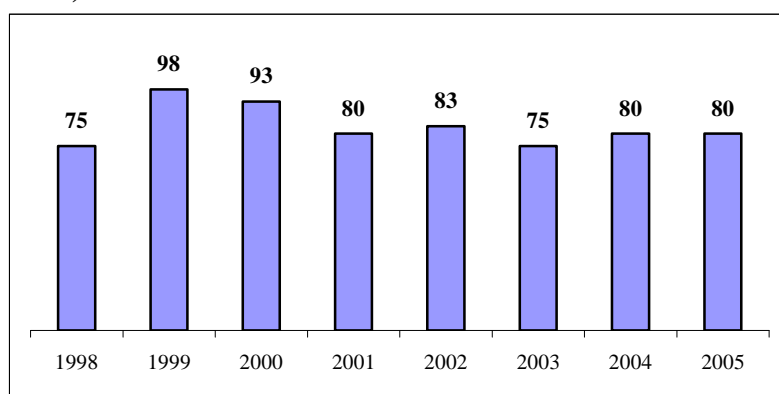
The Argentine apicultural industry has experienced a boom during the last few years. After the devaluation of the peso, at the end of 2001, a relatively high rate of exchange generated a situation that gave the sector artificial competitive characteristics²⁰. This situation went hand in hand with good international prices during 2002 and 2003, caused by the withdrawal of Chinese honey due to problems with chloramphenicol and dumping²¹. Notwithstanding, Argentine production was maintained without great variations (Figure 9). This was due to the fact that, although the number of apiculturists increased in response to the above mentioned factors; the climate did not help, generating a low production per beehive²².

²⁰ Ordoñez, H. 2002

²¹ SAGPyA 2002

²² Rolandi, N. Apicultura en crisis. 2004 (<http://www.alimentosargentinos.gov.ar>)

Figure 9. Evolution of the production of Argentine honey between 1998 and 2003 (thousands of Tn.)



Source: FAOSTAT.

The apicultural industry generates a lot of revenue in Argentina, since, as shown above, most of the production is exported. Argentine honey is highly appreciated by the most important importing countries, and it therefore has a well established demand. It is an activity that does not have high production costs and is labor intensive. Because of its characteristics, apicultural production is a very important activity for the development of regional economies and constitutes a significant income complement for many families who work in the different areas of production. Apiculture does not require full-time dedication when worked on a low or medium scale; this makes many apiculturists have it as a secondary or complementary activity, side by side with another main activity.

According to the preceding analysis it is understood that the apicultural business is strategic for the country and for the development of certain areas and groups in particular. Because the main destination of the product is the external market, and bearing in mind the “high” exchange rate currently in force, the activity is in a period of growth. This artificial competitive advantage must be transformed into a real advantage by means of a redesign of the business that will allow environmental sustainability, profitability of the sector and international competitiveness of the product.

3) OBJECTIVES.

- Describe an agribusiness design alternative to the existing one, which will generate greater value for producers and final consumers of Argentine export honey.
- Identify the institutional, organizational and technological restrictions to new designs in the honey agribusiness in Argentina.
- Analyze the case of “Mieles Naturales de la Bahía” within the framework of the previous objectives.

4) MATERIALS AND METHODS.

Information for the characterization of the world market for honey and Argentina’s participation is obtained from secondary sources of different official institutions (SAGPyA, SENASA, USDA and FAO). In addition, the description of the relevant aspects to characterize the institutional, organizational and technological levels is done

based on information collected in interviews with experts both from the public and private areas of the sector.

For the characterization of the value chain of Argentine honey, a SWOT analysis is performed with experts and businessmen of the different links of the product chain in the country. The case study method is used to describe the business design of the group “Mieles Naturales de la Bahía”.

5) RESULTS AND DISCUSSION.

Argentina is a very important player in the world market for honey; although it is not the main exporter in volume, it is in the quality of its product. The comparative advantages of this product must be accompanied by institutional, organizational and technological innovations that will make it possible to leverage those advantages and make them sustainable competitive advantages.

During the fulfillment of this study a workshop was organized to discuss the problems and limitations, as well as the strong points and opportunities that the sector encountered to achieve the goals described above in the short and medium term. Participants in the different links of the value chain attended this workshop. The conclusions are the following:

a) Weaknesses

- Apiculturists show lack of knowledge of relevant aspects of foreign commerce.
- There is no organizational structure legally valid and competitive from the point of view of the organizational and operative aspect, that will allow concrete commercial operations by groups of producers. Such a structure would allow vertical integrations in the value chain.
- Apiculturists show lack of knowledge and understanding of important aspects related to quality (nitrofuranes, antibiotics, etc.) and their sampling and analysis systems.
- There is high dependence on the external market and, within it, on a reduced number of important clients.
- There is no commercial strategy of the sector at national level to promote the product abroad or generate new markets.
- There is little supply of value added products and insufficient development of differentiated products.
- There is limited development of the internal market.
- There is unfair competition in the internal market (adulteration, retail sales without registration or controls, sales as “homemade” on roadsides and other spaces without sanitary or fiscal controls).
- There are delays in the reimbursement of the IVA (VAT)²³ to exporters by the State.

b) Strengths

- The product is recognized in the international market.

²³ Impuesto al Valor Agregado (Value-Added Tax)

- The quality of the product has made it possible for some associated producers to break the ring of hoarders /exporters and make their offers directly, both in the US and in the EU.
- There are comparative advantages to produce honey in the country (low production costs, high yield).
- Availability of good quality raw materials.
- Available technology according to international standards.
- Possibility of differentiating products by origin and quality
- Unexploited areas for the production of organic honey.
- There are state controls²⁴ to insure the quality of the final product.

c) Threats

- The triangulation of the product performed by some global buyers generates a direct threat due to unfair competition on prices, terms, and so on.
- There is growing competition from the world supply of honey.
- Drop of the international price due to the entrance of new competitors.
- Greater customer demands regarding placement of the product.

d) Opportunities

- Existence of market niches that value products with differentiation and superior quality.
- New problems in the market with our main competitor (China) caused by contaminated honey and royal jelly may again result in a closing of this country's exports.
- There is an important growth of demand, especially from countries with high purchasing power, which privilege quality and value added products.
- There are new buying countries.
- There is an expansion of domestic consumption.

All the above show the importance of sustaining the comparative advantages with institutional, organizational and technological innovations to develop a world class product and, at the same time, the need to redesign the system organizationally so as to transfer part of the decisions and commercial strategy to groups of producers or integrated producers.

In the case of the producers who are members of the group “Mieles Naturales de la Bahía” the construction of this new business design started in the fall of 2004, when they decided to form the group. Initially there were work meetings with representatives of the different companies who answered the call for a meeting made by a Consortium of Regional Development of the Province of Buenos Aires, CO.PRO.SAL (in Spanish). It was decided then to develop first three Good Practice Protocols (GPPs): one for field production, one for harvesting and storage, and a third for commercialization.

Traditionally, the term quality is associated with the idea of food safety, which makes it fit for human consumption. This “obligatory quality” is framed within laws and standards that the different products and production processes must comply with in

²⁴ SENASA (Servicio Nacional de Sanidad y Calidad Agroalimentaria) (National Service for Health and Quality of Agricultural Food Products)

order to guarantee their safety and healthfulness. On the other hand, there exists “voluntary quality”, which is related to the demands of the different markets and of consumers themselves. It is important to point out that the demand for quality, both obligatory and voluntary, can be analyzed from two very different perspectives:

- As a non-tariff barrier
- As an opportunity to open up market niches and satisfy the growing demands of a consumer group.²⁵

The implementation of quality protocols can be framed within the term “voluntary quality” that aims to open up new market niches. The controls derived from the application of these protocols sustain a traceability system, insuring that the product is not only safe for human consumption but also complies with certain standards defined in the protocol and that all this can be demonstrated through traceable records.

Honey as a product can be framed within a commodity system. This, together with the level of mistrust generated regarding its purity and non toxicity, affects its commercialization both in the external and in the internal markets, also affecting its greater competitive advantage, the idea of purity that it used to have among consumers. As a response to this mistrust, the markets have implemented restrictive measures, price drops and, in some cases, the closing of the markets²⁶. As a strategy to counteract these negative effects, the producers of “Mieles Naturales de la Bahía” have grouped to develop and implement quality protocols under their own brand with the object of generating competitive advantages that will add value and differentiate their final product.

In order for this strategy to be really effective, it is necessary to certify the processes, and to do this, it is fundamental to implement a work system that will be credible and of possible application throughout the honey chain. The producer not only has to do things right, but also has to demonstrate and offer guarantees that he is doing things right. According to FAO “the quality of products has to be formally demonstrated so that the consumer may have guarantees of this”; this is possible through certification.²⁷

To develop this strategy, there were monthly meetings with all the producers, coordinated by the author and the technician of the group, to develop the GPPs and discuss conceptual and practical concepts for their implementation. Shortly after starting their work, they received entrance requests from other producers of the areas, interested in the new design proposal. Given this situation, a decision was made to develop a letter of intent between the apiculturists and the group and the brand “Mieles Naturales de la Bahía”, which would have to be signed by both the new and the original members. This made it possible to formalize the entrance of new colleagues and create an important feeling of belonging when the time came to face more difficult or turbulent stages than those encountered so far. It took six months to develop the GPPs; once these were completed, the development was started of the “Cuadernos de Campo” (Field Notebooks) (CC in Spanish), fundamental records when the time came to certify

²⁵ “Buenas Practicas Agrícolas”. Diagnóstico y Propuestas. El Primer Eslabón. Forum of the Argentine Agroindustrial Chain. October 2005 PDF

²⁶ Cadena de la Miel: Análisis del sector. Ministerio de la Producción. Author: Mercedes Nimo. January 2003 PDF

²⁷ FAO United Nations Food and Agriculture Organization (www.fao.org)

compliance with the GPPs. These CC make it possible for the producer to keep a detailed record of all aspects necessary to comply with the GPPs and also all the indispensable data for traceability of the product. This technological innovation, formed by the articulation of the GPPs and the CC, allows the manufacture of a product with traceable origin and quality, in an environment friendly way and efficiently enough to structure an acceptable cost system for the expected price. The certification system is sustained by the follow-up of a technician hired by INTA²⁸ who visits the apiaries, the extraction rooms and the storage sheds to verify compliance with the GPPs and the information of the Traceability System.

To sustain these technological innovations, the group registered the brand “Mieles Naturales de la Bahía”. This generated a protective umbrella for the system and the business and leveraged the differentiation of the product. Once the group enters the markets directly, it expects to start a process of product fractioning to give the brand a more important role in the development of new markets and clients.

By the 2005/06 harvest, the group has a relatively important amount of honey under Production and Harvest and Storage GPPs. No operations have been performed to be able apply the Commercialization GPPs, although some requests for quotes of the product in bulk have been received. The intention of the group is to defend a price at what is called “Puerta de Galpón” (storage shed gate) in order to free themselves of any other expenses. Likewise, a website has been developed (www.mndelabahia.com.ar) to give the group and the product international exposure and receive queries and requests for quotes.

To date, the entire proposal has been evaluated with the Manager in charge of CO.PRO.SAL. and the producers, and the following limitations have been recognized for the development of the business model:

- Marked individualism of the producers, especially at the time of joint commercial actions.
- Financial limitations to develop a legal entity that will support the brand, the product and the group. For the time being, each producer is individually presented as far as fiscal, legal, technical, and other aspects, and the brand is in the name of the group’s coordinating consultant.
- There are no plans to perform third-party certification of the system. This will generate additional costs at the time a client requests it.
- No formal structure has been developed to generate a leader of the business or professionalize management.

6) CONCLUSIONS

The competitive construction undertaken by the apiculturist group “Mieles Naturales de la Bahía” shows innovative design regarding business interaction and internal redesign of the companies in order to comply with the GPPs developed. On the other hand, it recognizes the market conditions to offer value proposals in accordance with the needs of honey consumers around the world and builds its commercial strategy based on these. Thus, it manages to align its governance structures with its strategic and organizational

²⁸ Instituto Nacional de Tecnología Agropecuaria (National Institute for Agriculture Technology)

design to keep its transaction costs at the lowest level possible and reach the global market with a competitive product of greater added value and according to the wishes of consumers.

On the other hand, the GPPs contribute, as a technological innovation, the conceptual bases for the organizational redesign and adjust to the interaction aspects within the group to generate a business of high value for the final client and of greater profitability for the local chain. This business redesign by the companies of the group promotes innovation focused on the client and the market. Differentiation by origin and quality and direct export appear as supports of an appropriate design to improve business results and expand the share of the local honey market in the higher price segments.

Lastly, the participation of CO.PRO.SAL. as a trigger of the project and “guardian” of its results demonstrate the innovative role that the State can play in the new business architectures. The State should probably help the research and development of new markets as an additional contribution to the evolution of the group “Mieles Naturales de la Bahía”. The organization should adjust those aspects mentioned as limiting to allow a more fluent and successful development of the project and an earlier improvement of the profitability sought.

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