

APIMONDIA
International Honey Market - Challenges and Opportunities
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1. Introduction

During the past decade, which opens the new millennium, there has developed an unprecedented appreciation of the vital role to agriculture played by the world's pollinators, principally the honey bee. This increased awareness has occurred along with deepening sensitivity to the vulnerability of the world's bee populations. It is estimated that up to one third of the world's food supply is dependent either directly or indirectly on the activity of zoological life to pollinate botanical life. In some countries, such as Spain, 70% of the crops are pollinated. For this reason, the health of the world's pollinators and the vitality of the world's beekeeping industry have become increasingly essential to the ability of the human race to provide adequate food to sustain human civilization.

The phenomena of colony collapse disorder (CCD) has elicited the attention of the honey and beekeeping industries, the mass media, and the ministries of agriculture in many nations, underscoring the seriousness of developing effective efforts to protect the world's population of honeybees. These issues far transcend the interest of beekeepers. Large scale modern agricultural practices have led to the development of extensive migratory beekeeping and the subjugation of bees to mono-diets. These 2 factors may play an important role in increasing the vulnerability of the bee populations to viruses, mites, and other stresses.

2. World Honey Production

The world's production of honey is experiencing significant shifts from traditional patterns. The qualities, types of honey, and the prices are subject to many variables. These include the impact of the increased volatility of global climatic patterns. The ocean's waters were just reported to have increased 1 degree. Such a change requires an enormous absorption of energy. Noble prize physicist Stephen Chu, U.S. Secretary of Energy, has reported that the 10 hottest years in recorded human history have occurred during the past 12 years. The increased temperature differentials between sea, land and atmosphere have led to increased unpredictability, volatility and severity in weather patterns. In turn, this volatility has led to increased droughts, floods, cold spells and wildfires. This year Argentina, California, the U.S. Midwest, and Canada have suffered droughts. India experienced severe drought in almost all of its agricultural districts. India anticipates its weakest monsoon in 7 years, which may compel large scale imports of food for its large population.

Worldwide honey production has been estimated at 1.3 million metric tons. The distribution of production among the continents was reported, in 2001, as follows:

Africa	12%
North & Central America	16%
South America	10%
Asia	37%
Europe	23%
Oceania	2%
Source: www.beekeeping.org	

In the United States, honey production over the past decade has declined from 100,000 metric tons (220,000,000 lbs.) in 2000 to 73,000 metric tons (161,000,000 lbs.) in 2008. The Canadian crop is currently estimated to be about 20,500 metric tons (45,000,000 lbs.) which is 65% of the 2007 crop. After reaching a peak of 110,000 metric tons, Argentine production has declined to an estimated 50,000-65,000 metric tons. These declines have not been merely quantitative but qualitative, with particular reduction in white colors and milder flavors. As honey production shifts to more tropical regions of the globe, there is increased production of darker honey with special and stronger flavor profiles. Honey production in the EU has grown modestly, mainly due to increases in production in Hungary and Poland.

The general appraisal is that the 2009 U.S. honey crop will again be short. It would have taken excellent weather in North and South Dakota and extension of the production season to obtain even an average crop. While there was anticipation earlier of a potential bumper crop in the upper Midwest, the cold weather in July delayed and shortened the extraction period by a month. Even though moisture conditions were ideal and clover bloom plentiful, optimistic expectations for the honey crop were frustrated. Bees were weakened by disease and mites, so beekeepers were unable to make splits.

California has suffered 3 years of extreme drought and Texas has had the worst drought in half a century. The southeast and the northeast have experienced excessive rains, especially during blooms of gallberry, orange and other important honey yielding crops. Moisture conditions in 2009 in the Dakotas were better than in the past 2 years.

The total number of hives in the US is down as a consequence of CCD, and honey yields are 60% of normal. U.S. crop estimates range from 63,000 metric tons (140,000,000 lbs.) to 75,000 metric tons (165,000,000 lbs.) for 2009, which is around or below the smallest American honey crop of 3 years ago. There is clearly a short term and most probably a long term shortage of white clover honey as pasture lands are converted to soybeans, wheat, etc. to feed the human family, including the large populations in India and China, both of which have relatively low per capita arable land.

Canada is experiencing winter losses, extremely cold weather and a very cool spring that persisted into mid August. There is some hope that a surge of better weather in late August may bump the Canadian crop up to 23,500 metric tons (50,000,000 lbs.). The

late crop is predominantly ELA honey from thistle and wildflower. Due to the cool spring and summer, the Canadian canola bloom was extended as canola loves cool weather. This also means that the canola content of Canadian white honey continues to increase.

As is well known, Argentina's crop for 2008/2009 was significantly reduced and, moreover, significantly darker than usual. Argentina's exports to the U.S. dropped by half in 2008 relative to 2007. The failures of the northern American and Canadian crops mean that there will be significant shortages of white honey, especially clover honey. Barring the continuation of the 2-tiered market, prices for white honey will remain very firm.

Recent reports at Apimondia indicate that weather forecasts are for a return of El Nino which should bring ample moisture during South America's spring and summer production period. There is optimism that the 2009-2010 crop will be quantitatively larger and availability of white honey will increase. However, arrival will not occur until mid February-early March of 2010.

The overall difficulties in feeding the world's population have also led to significant increases in the production of grains, especially soybeans, corn and wheat. This has resulted in the conversion of pasturelands with clover and alfalfa fields into soybean and wheat farmlands. The energy crisis is also leading to significant increase in the production of biofuels, which threatens to reduce the cultivation of the types of botanicals which are favorable to the production of honey suitable for table, food service and baking.

Both Vietnam and Brazil are emerging as important and responsible producers and exporters of honey. Both countries have established strict monitoring programs that will lead to traceability and quality control. Vietnam has increased both their production and introduced various monofloral sources of honey. Brazil has such a vast territory and such a diverse floral source that the potential for growth and contribution to the world's honey trade is significant. The fact that Brazil can produce honey during 12 months of the year is a significant factor in providing continuity of supply. The vast regions of rainforest are allowing Brazil to become the leading producer and exporter of authentic organic honey.

3. Factors influencing markets in consuming countries

In 2008, the US imported 105,359 metric tons, with the largest volumes coming from Vietnam, Canada, India and Brazil. During the first 6 months of 2009, US imports were down 10% compared to the first 6 months of 2008.

In 2007, the consumption of honey in the European Union totaled 310,000 metric tons. Import prices in the EU have been increasing since 2005. The effective marketing of honey in Europe we may speculate is the foundation for the high level of per capita consumption in Europe. A strengthening of the Euro is also making the European market

an increasingly attractive market to Argentina, Mexico, Brazil and exporters from other major honey producing nations. Since 2000, the US dollar has declined 35% relative to the Euro.

In recent years, and most likely in future years, changes in currency rates will have significant effects upon the pricing and the international flow of honey from producing to consuming countries. The huge deficits in the U.S. economy have led to an explosion of the money supply which threatens the strength and stability of the U.S. dollar, which has served as the world currency for many decades. Russia, China and, most recently, President Sarkozy of France, have called for the establishment of a new basis for a global reserve currency. The relative strength or weakness, and the instability, of currency is playing a major role in determining to which consuming countries producers will export their honey.

Antidumping petitions and rulings in the U.S. are also playing an increasingly dominant role in determining the nature of honey markets. In January, 2009, the U.S. government imposed an antidumping rate of USD2.85/kg. on all Chinese honey exported to the U.S. China is the world's largest producer of honey and in 2008 exported over 84,000 metric tons to the world, according to official Chinese Customs reports. In 2005 China produced approximately 300,000 metric tons, or about 25% of worldwide production, and exported 88,500 metric tons, so it appears that China's production has been relatively stable over the past several years. This year drought conditions in northeastern regions of China may reduce production of linden (basswood), buckwheat and sunflower honey.

We note that the efficacy of antidumping laws in the U.S. may change in that, as part of the condition for China's ascendance into the WTO, antidumping investigations on China would be assessed for a limited period using surrogate country analysis (in this case India). Within a decade, if not before, the use of surrogate country analysis for China in U.S. antidumping cases may change.

Nonetheless, as is well known, the antidumping rulings against Chinese honey in the U.S. have led to striking aberrations in import patterns. Those aberrations are expressed in the quantity, quality and prices at which honey is entering the U.S. For example, in the 2nd quarter of 2009, Thailand exported honey to the U.S. valued at \$.45/lb. and the average declared customs value of all Chinese imports in 2008 was \$.22/lb., a shockingly low value. In 2008 countries such as India and Malaysia doubled their exports to the U.S. and Indonesia quadrupled its exports over the prior year. It is very revealing to see the contrasts between exporting countries that have emerged over the last decade.

It is clear to many that there has emerged in America a 2-tiered market. New reports by the Pulitzer-prize winning columnist Andrew Schneider indicated that Chinese honey has been transshipped through third countries. Recently there were arrests and confessions by some of the Chinese who were involved. Other responsible and honest members of the Chinese honey industry have said that such circumvention represents a form of corruption that causes China to "lose its face," which would also be the case for America if it tolerated such activity.

The Indian government in late 2008 issued a prohibition against the export from India of Indian honey blended with honey from other countries. In June of 2009 the Vietnamese Ministry of Agriculture issued a monitoring program designed to protect the quality of honey and to prevent export of transshipped honey.

The U.S. government has taken a number of serious actions to prevent transshipment. Nonetheless, the issue of “honey laundering” has become another variable within the volatile and complex international honey trade which has created unprecedented stress on companies operating in the U.S. market and elsewhere.

4. Honey Testing

As global patterns of the movement of honey between consuming and producing countries change, the need for preventing adulteration, contamination and mislabeling of country of origin has become an acute international need. Tracing honey back to the beekeepers who collect it is becoming a concern for governments and honey buyers around the world. Assessment of unadulterated and safe honey poses serious scientific challenges. The international honey trade will need to develop international science-based standards, which in turn requires global science. Since there are multiple variables including floral sources, environment, climate, elevation which influence the chemical profiles of honey, international cooperation becomes increasingly imperative in order to establish a data base of authenticated and fully described samples of the world’s honey. Scientists from the FDA, it is relevant to note, issued a research protocol which states:

“Variations in a product, such as honey, can come from differences in geographical origin, botanical source and processing technique. If the database is not representative of the particular commodity, then the method will be valid only for samples covered by the database. . . The goal of this project will be to collect honey from producing countries and determine the chemical compositional data for these honeys. . . This information will enable us to establish a range of compositional values for honeys from around the world.”

Honey is a byproduct of the complex interaction of botanical and zoological life and multiple metabolic and synthetic processes are involved in the creation of honey. There can be a multiplicity of chemical profiles of the honey produced within a given country, such as sugar, isotope ratios, color, flavor, pollen, etc. At the same time, there can be highly similar profiles for honey from different nations, especially among adjacent countries or regions. The complexity of these variables is illustrated, as Dr. Joseph Bowden, former head of the referee laboratory for the USDA’s honey loan program, pointed out, by the fact that carbon isotope ratios of American honey dramatically differ, based on samples gathered in the first and second year of the study, reflecting differences in aridity and humidity. Unfortunately the data from the second year was not published.

It is also the case that honey is a very dynamic and complex product. In given commercial lots of honey, and even within commercial drums of honey, if the honey

contains multiple floral sources, there are different rates of crystallization which lead to extrusion of both moisture and protein from bottom layers to upper layers. This means that establishing authentic and representative samples of honey is complex. If we are to authenticate the origin of honey a more comprehensive data base is absolutely necessary. The establishment of such a credible and comprehensive data base requires scientific analyses conducted by university, government and private researchers.

Since bees, like other biological organisms, are vulnerable to disease, and furthermore, purely natural and genetic means thus far are inadequate to protect bees, beekeepers throughout the world must use miticides and other chemicals to protect the bees. This means that honey does not dwell in a realm of absolute purity, devoid of residues. There needs to be international cooperation to establish safe standards, testing parameters and testing levels, as exist in most countries for poultry, meats, seafood, fruits and vegetables. In assessing both health benefits and health risks, medical science requires reference to the average daily intake (ADI). The international flow of honey will require international cooperation to confront the facts and establish standards that will allow beekeepers to protect their bees and food manufacturers to protect the health of consumers.

Many medical practitioners realize that as instrumentation becomes ever more sophisticated, to the point of being able to detect parts per 10 billion, the dilemma of testing the test, rather than testing for health risks, emerges. This is the 800 pound gorilla in the room, whose presence no one acknowledges. We must confront the facts and bring a science-based approach so we can both protect bees and human consumers of honey.

5. Honey and Health

There is a golden opportunity for the use of good science as a marketing tool for communicating the benefits of honey to manufacturers, retailers and consumers. The Committee for the Promotion of Honey and Health was established in 2007 in the U.S. by leading producers, packers and importers to encourage research on the scientific basis for honey's health benefits. It is essential to conduct advanced scientific research if we are to confirm the ancient intuitions that honey, as a natural product, has health benefits. Those intuitions have been expressed in many cultures for several millennia. It is now becoming possible to scientifically investigate and confirm those intuitions of honey as a health promoting product of nature.

In January 2008, the Committee held the first International Scientific Symposium in Sacramento, in conjunction with the U.S. National Beekeeping Conference. Scientists from Sweden, Switzerland, New Zealand, Australia, and U.S. presented scientific research on a wide variety of health concerns. The Symposium was covered by local and national media, including widely read national health magazines, and had an audience reach of over 67 million "hits," which is considered to be very impressive. Several members of the Committee, including President Red Bennett and Dr. Stefan Bogdanov, are attending Apimondia this year.

Dr. Ron Fessenden and I, as founders and Co-Chairmen of the Committee, have begun discussing the possibility of a second symposium to be held in 2011. We note that other industries, such as the almond and tea industries, have greatly increased consumption and prices obtained for their products in large part because of the establishment of effective health messages. Some of the initial research indicates that honey may be beneficial for cough suppression, weight management, brain health, and sleep duration. Research on honey and its relation to major diseases is taking place in various countries. For further information, please see the website www.prohoneyandhealth.org.

6. Marketing of Honey to the Consumer

The international honey industry presents great opportunities for more effective and creative marketing of this wonderful product of nature. When we look at the markets for wine and tea, we see a tremendous surge in consumption over recent decades. These natural products have woven into their marketing strategies several important themes, including:

- 1) the wide variety of qualities and diverse flavor profiles offered;
- 2) the beauty and geography of production;
- 3) the diverse modes of consumption; and
- 4) health messages that have emerged in recent decades.

All of these marketing strategies are available for honey. Some countries, especially in Europe, have successfully utilized such messages. Honey is produced in many beautiful natural settings from gorgeous fields to forests, and urban and suburban populations are very receptive to this beauty. The wine industry conducts tours of vineyards and provides tasting opportunities.

Compared to world cane and beet sugar consumption, world honey consumption is less than 1%. In terms of per capita consumption, in the United States we consume about 1.1 lbs. (1/2 kg.) of honey per person per year, but 63 lbs. of sugar, according to some estimates. If you add other sweeteners such as high fructose corn syrup, rice syrup and other sweeteners, world honey consumption looks even smaller. That means that honey should not be bought, sold or marketed as a mere commodity.

Marketing studies consistently show that when products are sold inexpensively, consumers' perception of the value and intrigue of those products declines. The average retail prices of honey have increased in the U.S. by 16% over the past 24 months without any corresponding decline in consumption, which is estimated to be between 180,000 metric tons (400,000,000 lbs.) to 225,000 metric tons (500,000,000 lbs.) per year in the U.S. In the industrial realm, honey is widely used to market cereals, breads, and snacks, despite the fact that the percentage of honey in the products is small. This means that the opportunities to increase both retail and industrial consumption of honey are significant. To realize that potential will depend upon the use of creative and sophisticated marketing strategies by both individual companies and national honey organizations.

Honey has the potential to more fully participate in the growth of natural and organic foods. In a very comprehensive way, honey is part of the global movement towards green foods that are environmentally friendly. Indeed, the production of honey is essential to the vitality and health of the global environment.

7. The Future

When we reflect upon the global macro economic and political trends over the past few centuries we witness increased international interdependence, cooperation and integration. The emergence of the European Union, the WTO, the North American Trade Agreement and ASEAN bear witness to this trend towards economic integration. The cumulative future consequences of global economic integration will include an inevitable reduction in tariff trade barriers, non-tariff trade barriers and agricultural subsidies. There will need to be a corresponding strengthening of international law in order to ensure that international trade is conducted with fairness and integrity.

The mathematical theory of geometric fractals is revealing that large scale integration of living organisms and social organizations leads to greater efficiencies in the utilization of energy, i.e. less natural resources are required as inputs to achieve the same or greater outputs. The global trend towards higher levels of integration, interdependence and cooperation is an irreversible historic trend.

As a result of the above considerations, the international honey industry will have to adjust in at least two major ways. Firstly, we need to preserve the incentive to produce and the incentive to consume honey, and keep all segments of the industry, including producers, exporters and importers, packers, manufacturers, retailers and consumers functioning as healthy segments of this large interlaced network. Secondly, the past practice of seeking to attain competitive advantage by erecting barriers to restrict supply must be superseded by effective marketing strategies to increase demand so that it stays ahead of global supply. A creative transformation is essential to achieving both increased demand and increased remuneration for honey, with its intriguing diversity of qualities, its health benefits and its roles in both providing a natural and delicious sweetener and feeding the planet.

The future of the honey industries in all the major consuming countries will depend upon enhanced international exchanges, including on beekeeping practices, the development of the honey and health message, and the marketing of honey in respect to its marvelous diversity and its enduring romance.
