

CONSUMPTION, PREFERENCES AND HABITS OF PURCHASING CONSUMERS OF HONEY IN MOROCCO

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Abstract

Given the increasing tendency of honey consumption which is due to their conviction of the benefits of honey as an alternative to a refined sugar, the beekeeping industries has developed and honey has become an important export, and at food purchase, consumer is affected by several factors. The objective of this study was to establish the buying habits and the motives for the consumers of honey in Morocco in term of annual consumption, its frequency and factors affecting consumers at honey purchase.

A questionnaire survey was conducted in December 2017 - March 2018 among Moroccan consumers from eleven regions and it was completed by 200 respondents. Gained results were analyzed by the contingency test (Chi-Square), and correlations have been tested with use of the Cramer's coefficient.

Results show that the major part of customers consumes honey from time to time and not regularly. The important characteristics are the flavor and the floral origin. Most people buy honey from beekeepers (45%), special markets were named on the second place (22%), and markets on the third place (11%). The main motivations for consuming honey are the satisfaction of the taste (70%), to use it as a treatment (15%), as a sweetener (9%), or for other uses (6%), and the breakfast seems to be the most favorable time to consume honey (84%). The preferences of these consumers are based on creamy, but spreadable honey packaged in glass jars. Most of people surveyed do not know about other apiary products such as bee propolis (only 2%). Statistically tested dependencies between the consumption frequency of honey and demographic

factors (gender, economic activity, age and family situation), showed that the economic activity and the family situation of the respondents had statistically significant influence on consumer's consumption of honey. The information provided in this article makes clear the need of Moroccan consumer for knowing the several benefits of honey like its health prevention ability in order to increase his consumption.

Key words: Honey, Consumption, Purchase, Preferences, Behavior, Morocco.

1. Introduction

Honey is one of the most important global natural products. It comes in the first order of these products, since it has a lot of benefits as a medicine, a food and a curative product for many centuries, and it is considered as a principal source of energy.

It is a great source of all the necessary elements for the development and the growth of our organism as it contain different: amino acids, carbohydrates, minerals, vitamins, essential oils proteins, pollen, polyphenols, enzymes, organic acids, etc. [1].

The geographical origin and the climatic conditions as well as plant species on the site has an impact on the quality of honey [2]. Some reports mentioned that honey contains more than 200 components [3]. We can find three forms of honey: granulated, liquid, and partially crystallized [4].

During religious and traditional occasions, especially during Ramadan, Moroccan families increase their consumption of honey because more meals are prepared by it. The Coran even dedicates an entire chapter entitled "The Bee" to honey and its benefits (Surat Al Nahl).

Three races of bees that live in Morocco [5] are: *Apis mellifera intermissa* present in most regions, *Apis mellifera major* [6] in the Rif mountains in the north, and it is considered as an ecotype not differing from *Apis mellifera intermissa* in behavior and its taxonomic status, and *Apis mellifera sahariensis* [7] in the Moroccan south.

Since 2008, the Moroccan State has started with the Green Morocco Plan relies on two pillars [8]. The first one focuses on accelerating the development of a competitive and intensive agriculture through accomplishment of high added value projects in both agro-food and productions. The second pillar related to the strengthening of the position of small farmers through enhancing their incomes especially those with insecure job [8]. Bee-keeping is part of the last pillar, with the aim to achieve 16,000 tons of production by 2020 [9].

Despite this plan, the annual honey production has varied, ranging between 2,500 and 3,800 tons with a Stagnation and even falls over the last five years [10].

Quantities of honey are imported especially during the month of Ramadan due to insufficient local production to cover the needs of the internal market. An average of 1,300 tons per year reaches the Moroccan mainly from: China, India, Egypt, Spain, and Argentina [11]. It should be noted that the price of imported honey is much lower than that produced locally by 20 to 30% [12]. It should be recalled that the Moroccan labeling regulations do not require the mention of the place of production, but rather the place of conditioning [13].

Exports of Moroccan honey are very low, not exceeding a few tons per year in the form of samples of honeys of terraces intended mainly for fairs and exhibitions in some countries of the Near East and Europe [14, 15]. Morocco is currently in the process of preparing the access of Moroccan honeys to the European market through its.

One of the major problems is the incomplete understanding of habits, needs and motives of Moroccan consumers and the lack of accurate knowledge of marketing and therefore the failure to establish an effective and proactive marketing strategy and marketing program, which would enable them to increase market share in both national and international markets.

Considering the above, this paper tries to investigate the Moroccan consumer preferences for honey also the impact of some variables on these choices.

2. Materials and Methods

The methodology used is an investigation with a questionnaire accurately created for this survey. The survey was completed between December 2016 and March 2017.

This study was conducted on 200 respondents from the following eleven regions of Morocco: Fès-Meknès, Rabat-salé-kénitra, L'oriental, Casablanca-Settat, marrakech-Safi, Guelmim-Oued Noun, Draa-Taafilalt, Laayoune-Sakia El Hamra, Tanger-Tetouan-EL Hoceima, Beni Mellal-Khénifra, and Souss-Massa.

The questions were organized as follows: questions about socio-economic factors, questions concerning consumer characteristics and consumption behavior, and questions to evaluate the level of comprehension concerning the other hive products and the state of honey.

Statistical testing of results was performed by the contingency test (Chi-Square), correlations have been tested with use of the Cramer's coefficient.

3. Results and Discussion

From the outcome of our investigation, it was found that women consume honey with a higher frequency (75%) than men (25%).

The population with 40 - 60 years of age has the largest representation. Population above 60 years is represented by only 3% and it is considered as the less represented, while the population aged between 25 and 40 years is merely represented by 34%. The results shows also that purchasing honey's decision is influenced by parent/spouse, while other respondents make independent decisions. By economic activity the studied group consisted of 69% employee, 21% students and 10% retirees.

The respondents came from: Fes-Meknès (33%), Casablanca-Settat (22%), l'Oriental (12%), Rabat-salé-kénitra (11%), Marrakech-Safi (7%), Laayoune-Sakia El Hamra (4%), Tanger-Tétouan-El Hoceima (3%), Beni Mellal-Khénifra (3%), Draa-Taafilalt (2%), Souss-Massa (2%) et Guelmim-Oued noun (1%).

Figure1 shows the frequency of annual consumption and we can see that the majority of Moroccan consumers 34% (n = 69) eat honey occasionally: 1.5 kg to 2.5 kg, while those who consume more than 4 kg are less represented 18% (n = 35).

Guziy *et al.*, [16], obtained the same results of their survey about the consumer behavior toward honey in two countries: Slovakia and Russia and they found that the majority of consumers in both countries consume from 2 to 5 kg annually and the only significant dependence was confirmed in case of respondent's age. The annual consumption of young generation is lower in comparison to older generations.

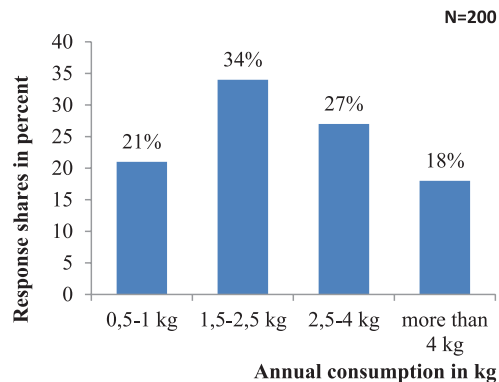


Figure 1. The frequency of annual consumption ($p < 0.001$)

A previous research connected with honey consumption was conducted in Algeria in 2015 [17], shows that more than two-thirds of the interviewees (69.4%) do not actually consume more than one kilogram of honey per year.

Consumer behavior involves several factors, which can influence consumer's purchasing decisions. In case of honey purchase, it can be factors such as: price, brand, taste, packaging size, country of origin, packaging design, place of selling, type, and quality.

This survey shows that creamy honey is more popular among consumers surveyed. They seem to think that creamy honey is more expensive than liquid honey 29% ($n = 58$) versus 19% ($n = 38$). As good flavor and taste were the characteristics most liked by respondents about honey, they are looking at its package to ensure a good quality. For this reason, most of respondents preferred to purchase honey packaged in glass jars 66% ($n = 133$), those who prefer plastic jar and squeeze bottle are less represented 12% ($n = 23$), and 10% ($n = 20$). Multifloral honey is consumed by 56% ($n = 112$) of participants, and monofloral honey by 37% ($n = 74$).

In Hungary, a study has been done in 2009 [4], with the objective to develop a strategy for Hungarian honey sales based on the consumer's purchase habits. The research demonstrates that there are several types of honey produced in Hungary, but people don't know too much about them, they consume and purchase only few of them. The results show that older people take into consideration mainly the price, name of the producer and size of packaging. It was also found that most of consumers purchase honey only a few times per year, or monthly and mainly in hypermarkets or directly from producer.

While investigating consumer behavior in Saudi Arabia [18], the authors analyzed the major factors influencing consumption; expenditure patterns and demand for honey, found the major motivation for consuming honey are its medicinal and nutritional values. Likewise, in a study conducted to determine the fac-

tors that will influence consumer's purchase intention of honey related products such as royal jelly, honey drinks and bee pollen, they affirmed that medical conditions, quality of the product, brand reputation and pricing have a significant relationship with Asian consumer's purchasing behavior [19].

Based on the responses to the question, we deduced that the price of honey is a secondary criterion as it is positioned in second place 38% ($n = 75$), and as they are conscious of honey adulteration related to the imported honey of unknown origin, for them the origin of the honey is the most important factor of purchase 56% ($n = 111$).

In a study conducted in Hungary, It was found the same results as ours; Hungarian people are looking first at the quality and price of honey purchased, followed by the quality of packaging, while other criteria such as name of producer, flavor and colour are less important [4].

The majority of respondents 45% ($n = 89$), purchase honey directly from beekeepers, given the fact that consumers build up relationships of trust and confidence with them and as it is difficult to check the quality of honey. Other factor that influences their decision such as price, which is lower when honey is purchased from beekeepers than it is purchased from supermarkets or other stores (Figure 2).

Results of previous study done in Vojvodina, Serbia, in 2015 present finding that a significant portion of respondents (40.6%) opts to purchase honey directly from beekeepers for the same reasons that are confidence and lower price [20].

In addition, we statistically tested the dependencies between the consumption frequency of honey and demographic factors (gender, economic activity, age and family situation) (Table 1).

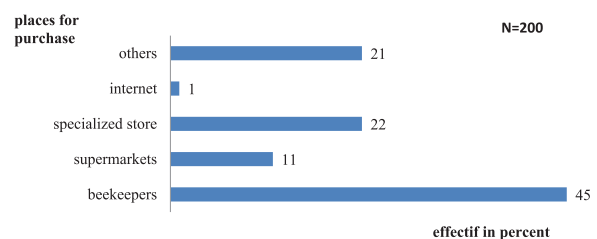


Figure 2. Places for purchasing honey ($p < 0.001$)

Table 1. Results of statistical analysis of consumption frequency of honey

Parameters	p-value	Correlation	Cramer's V coefficient
Gender	0,643	no	0,091
Economic activity	0,003	yes	0,354
Age	0,075	no	0,280
Family situation	0,01	yes	0,287

It was confirmed statistically significant correlation on economic activity and family situation of the respondents. By the Cramer's coefficient we can state that the highest correlation (0.35) was determined at economic activity, followed by family situation (0.28). In terms of gender, the most commonly is consumed honey by women occasionally. The same frequency of honey consumption (occasionally) dominates in the categories of student and employee.

Moreover, we examined the influence of age on honey consumption per year and we find that older generation has higher consumption of honey than younger generation (Figure 3).

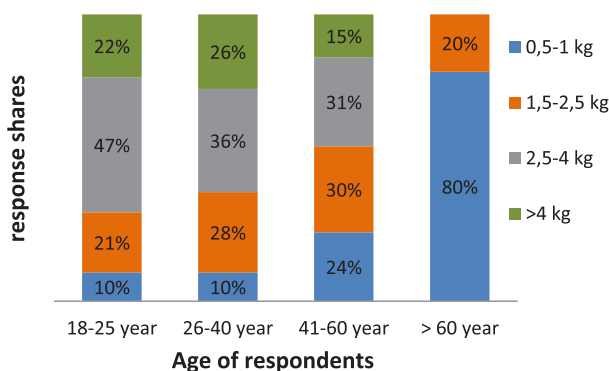


Figure 3. Influence of age on honey consumption per year in Morocco

In order to strengthen our finding, we will provide more results from researches concerning honey consumption. Guziy S. *et al.*, [16] from socio-demographic factors only the age had statistically significant influence on consumer's consumption of honey. Young generation tend to consume less honey per year than older generation. Pocol [21], revealed a certain impact of demographic factors on consumption patterns. The key factors were education and occupation. Schifani *et al.*, [22] states that if we take into consideration socio-demographic aspects, only income had a significant impact on consumer preferences towards local honey.

Note was made in our investigation about limited knowledge concerning apiary products and some misconceptions concerning the state of honey, his storage and crystallization among consumers of honey. Apiary products are considered as a great ally in the fight to defend the organism against external aggressions.

The investigation showed that the most known product was royal jelly 86% (n = 172), and it has been popularized by press, media, internet, sold in chemists, the doctor's advice, through word of mouth. From the other side, propolis remain unknown by the majority of Moroccan consumers 2% (n = 3).

If we compare our results with those of the sustainable Development Plan of apiculture initiated in France in 2013, we found that French people have a good knowledge about royal jelly and propolis through the mass media and Internet while pollen was unrecognized [23].

At evaluation of the level of comprehension concerning the state of honey, his storage and crystallization, the majority of respondents 60% (n = 119) think that honey is a product that keeps well for a long time, and 13% (n = 27) are convinced that a liquid honey is better than the creamy one. In fact, if honey is creamy this doesn't mean it is better than other textures in terms of health benefits or quality. To obtain creamed honey, finely granulated honey and liquid honey are mixed according to a specific ratio, then, to promote rapid granulation and produce a small crystal size, the mixture is placed in a cold storage and these results in a smooth, creamy honey, and the only difference between the two states is the texture and the form.

For Moroccan consumers, the ideal honey profile was the liquid one 48% (n = 96), not taking into consideration that crystallization is a natural phenomenon. In fact, most unheated or pure raw honey has a natural tendency to crystallize over time, and there is no difference in taste or nutritional value of these two states. Our results are in line with the study done in Italy and aims to determine which factors influence consumers' purchase intentions, which stated that crystallization of honey makes it less attractive to the consumer, who prefer it liquid. It could be due to the lack of sufficient information regarding the quality and physical aspects of honey [24].

4. Conclusions

- From the research that has been carried out, it is possible to conclude that honey is considered as popular product in Morocco and buying it from manufacturer of honey - known beekeepers remains the dominant trend. The reasons for the consumption of honey are its medicinal and nutritional values.

- The majority of consumers purchase honey occasionally and not regularly. The highest percentage of respondents prefers to purchase honey packaged in glass jars as it was more convenient and it remains fresh longer. In terms of annual consumption we can state that the majority of respondents consume from 1.5 - 2.5 kg of honey per year. Main factors affecting respondents at honey purchase were the floral origin, price and consistence.

- Furthermore, we statistically tested the dependencies between the consumption frequency of honey and demographic factors (gender, economic activity, age and family situation). Based on the test, we can conclude that the economic activity and the family situation of

the respondents had statistically significant influence on consumer's consumption of honey. Also, given the fact that unheated or pure honey tends to crystallize, so there is no difference in nutritional value or in taste of these two states

- To motivate people to buy more honey, it is recommended to promote a healthy lifestyle and ensure a price reduction

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