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Information and Preference of Consumers at Yalova/Turkey on Probiotic Table Olive

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Abstract

This research aimed to determine probiotic olive preference of consumers from Yalova/Turkey as well as provide some information about probiotic olive awareness and an idea about consumption habit of consumers. This study can especially be useful for table olive producers who are willing to increase probiotic olive production. For this purpose, 497 questionnaire forms were prepared. Results of this study showed that beneficial effects of probiotic food were not known well (76% of participants never heard). Taste and price were major affecting factors in terms of purchasing and consuming of probiotic olives. 97% of participants were willing to consume probiotic olive rather than ordinary olive. Black (38%) and green stuffed olive (38%) were determined as the most preferred types of probiotic olives.

Keywords: Probiotic consumption; Probiotic bacteria; Nutrition; Probiotic taste

Introduction

Turkey is ranking first in the world for producing black olives [1]. There are new olive plantations at huge areas in Turkey but table olive consumptions are still not on the satisfied level. The main reason for the low table olive consumption was considered as the increases in interest of the corn flakes and fast food consumption instead of breakfast and homemade food [2,3]. Probiotic table olive production was thought as an alternative and healthy product to increase total consumption of olives [4,5]. Olive is already a functional product and its fermentation with probiotic cultures will increase beneficial effect and marketing capacity. Thus, this research was focused on determining knowledge and ideas on probiotic table olives of participants from Yalova/Turkey in order to develop decision tools for table olive producers who are also willing to produce probiotic table olives among with their other olive products. Probiotics have beneficial health effects such as antimicrobial and anti-tumorigenic activities [5,6] as well as cholesterol reduction properties [7]. Different probiotic bacteria were researched to obtain living probiotics for production of probiotic olive as a new probiotic food in literature [8,9]. Production of probiotic table olive was studied on olives of Bella di Cerignola cultivar [6], Greek cultivars [9], Italian cultivar Nocellara Etnea [10].

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Materials and Methods

Face to face interacted consumer surveys conducted at the city center of Yalova/ Turkey. Questionnaire forms were filled by one person from each family. This study carried out between 1 October 2013 - 24 December 2013. Group of the study was selected from participants whose age varying between 24 and 58 years old in order to measure the perceptions to probiotic table olive. Survey forms according to research objectives and contents were prepared. As a result of grading and sorting of survey, 497 surveys have been recognized as the ultimate material.

Results and Discussion

Socioeconomic and demographic factors such as age, gender, education and income were reported as affected factors on probiotic table olive perceptions of consumers [11,12]. Demographic characteristics of 497 participants of this study were given in Table 1.

Gender	Number of participants	%
Female	223	44,87
Male	274	55,13
Age	**Number of participants**	**%**
24-35	128	25,75
36-45	193	38,83
46-58	176	35,41
Family income per month	**Number of family**	**%**
(Turkish Lira)		
<1500	32	6,44
1500-3000	247	49,70
3000<	218	43,86
Education time of parent (year)	**Number of participant**	**%**
<2000	130	26,16
2000-3500	194	39,03
3500<	173	34,81

Table 1: Demographic characteristics of participants who responded to the survey.

Olive is one of the main components of breakfast culture [12]. Percentage distribution of responses to the question for "Do you know beneficial effect of probiotics?" was shown in Figure 1. In this study, people's knowledge about beneficial effects of probiotics was evaluated as 16 %. This result indicates us a need to disseminate health benefits of probiotics to establish healthy nutrition habit of people and consumer acceptance studies were thought as essential for the introduction of the probiotic olives into the market. Increases in interest of the corn flakes and fast food consumption instead of Mediterranean traditional breakfast may cause a decline in table olive [3,13]. In this study, 8% of participants had no idea on beneficial effects of probiotics whereas 76% of participants never heard of the beneficial effects of probiotics. In the light of this study, promotions and testing stands to inform the consumers about the probiotic olive may be an effective way to increase probiotic product consumption.

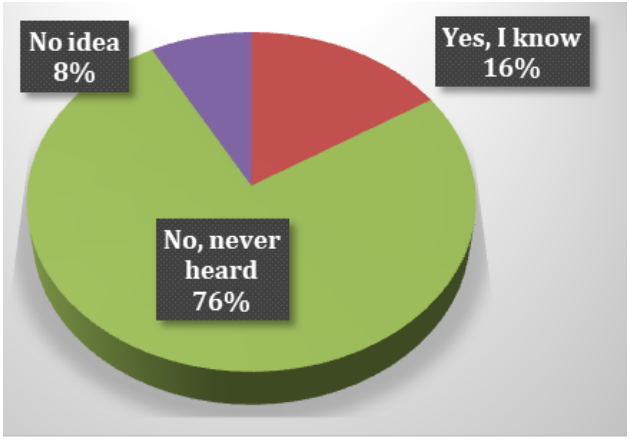

Figure 1: "Do you know beneficial effect of probiotics?" percentage distribution of responses to the question.

Nowadays, number of researchers who develop marketable products which include live probiotic bacteria as an extensive response to the consumer demand for healthy food has increased [14]. Also markets share of probiotic products have considerably increased both for food and drug industry [5]. Percentage distribution of responses to the question for "Would you like to consume probiotic table olive which have more beneficial nutritive values than ordinary olive" was shown in Figure 2. National and international olive councils, olive producer associations support some promotion activities to increase knowledge about beneficial effects of table olive for consumer. Dissemination and informative activities will be effective tool for increase the awareness of probiotic table olive.

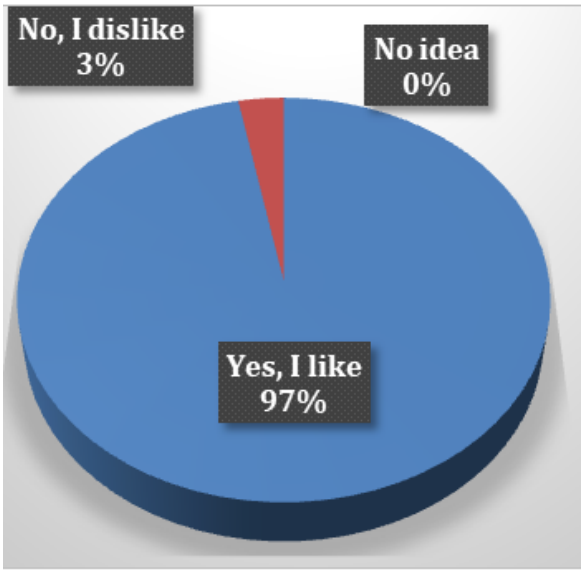

Figure 2: "Would you like to consume probiotic table olives which have more beneficial nutritive values than ordinary olive?" percentage distribution of responses to the question.

Nowadays, people, who want to live a long and healthy life, have understood the importance of this diet and they have begun consuming more olives, which is one of the most important elements belonging to Mediterranean diet [15,16]. Percentage distribution of responses to the question for "Are you willing to buy probiotic olive which have more beneficial nutritive values than ordinary olive?" was shown in Figure 3. Turkey takes place as the fourth in the world in terms of olive consumption, since olives constitute a major part of traditional Turkish breakfast combined with bread, cheese, and black tea [12]. This study showed that 78 % of participants decided to buy probiotic olives according to price. On the other hand, 13 % of participant indicated to be willing to buy probiotic olives regardless. Beside the functional properties of probiotic bacteria use in olive fermentation, it ensures controlled process and standard high quality product; thus, consumers should be informed all of these positive effects. It can attract consumers and affect buying preference.

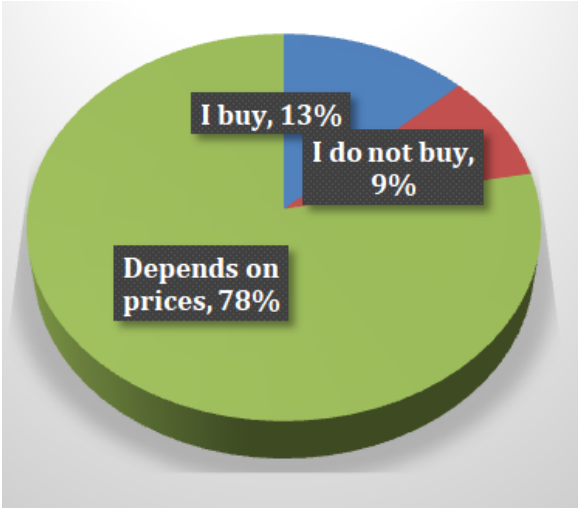

Figure 3: "Are you willing to buy probiotic olives which have more beneficial nutritive values than ordinary olive?" percentage distribution of responses to the question.

Percentage distribution of responses to the question for "Are you willing to consume probiotic olive except from breakfast?" was shown in Figure 4. Increase of table olive consumption out of breakfast probably an important factor for increasing its total consumption. Result of this research showed that % 33 of participants willing to consume probiotic table olive out of breakfast. Thus, probiotic table olive production can help to increase olive consumption at lunch and dinner. This result showed that producers should be considering the taste of probiotic olive as important criteria to increase olive consumption out of breakfast. As the same direction to our results, probiotic olives were mainly identified as appetizer and as a complement for certain dishes [11,17]. However, according to result of this study, 65% of participants indicated the taste of probiotic olives as decision making tool for consuming it out of breakfast. This result was in agreement with Anonymous [17] which reported that probiotic olives can be commercialized without any trouble if fermentation of olives with probiotic starter cultures did not introduce any changes in the sensory

characteristics of the traditional table olives. Therefore, taste or sensory expectation of participant should be well defined to increase attraction of consumers to probiotic olive, with less salt and acidity formulations should be developed [5,11]. The addition of a high percentage of salt is not well accepted by consumers whereas probiotic bacteria as starters are associated with healthy nutrition [4]. Results showed that only probiotic content may be insufficient to increase buying desire of consumers; therefore, combination of probiotic content may be supported with low level of salt and high level of phenolic contents can present table olive as an attractive product for consumers.

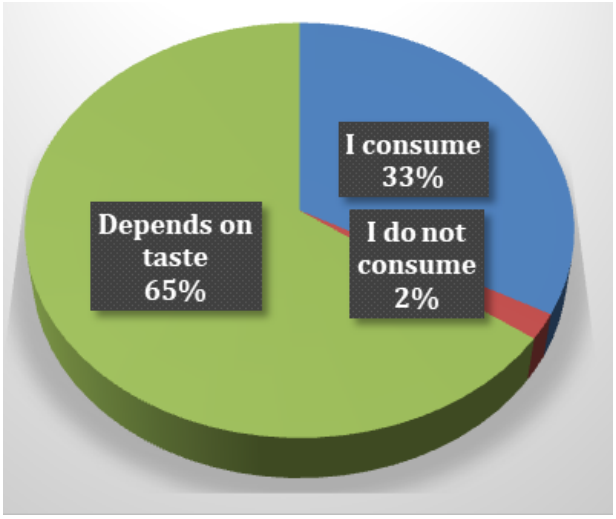

Figure 4: "Are you willing to consume probiotic olive except from breakfast?" percentage distribution of responses to the question.

In this research percentage distribution of responses to the question of "Which form of probiotic table olive would like to consume?" was shown in Figure 5. Olive is an example of a product for which consumption is marked by local culture; it is emblematic of the diet and culture of the Mediterranean region [16]. Sensory characteristics are based on consumers' preference and acceptance; thus, taste of probiotic foods must be as good as conventional foods [18]. Most of the studies concerning this issue conclude probiotic bacterial content less than 10 % of total microbial content is not able to affect sensory characteristic of final product [19,20]. In this research, ratio of participants who like to consume black and green stuffed olives were ranked first and second with 38 and 24 % respective ratios.

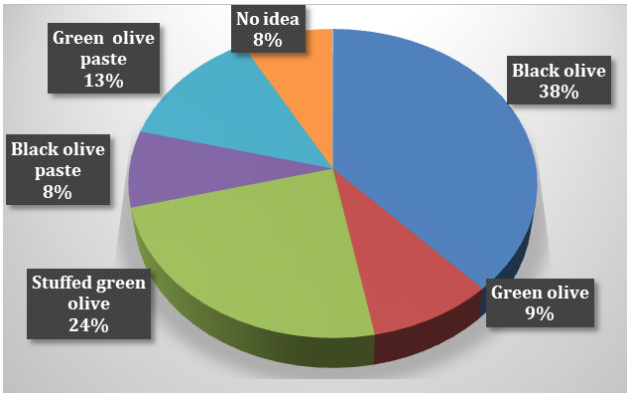

Figure 5: "Which form of probiotic table olive would like to consume?" percentage distribution of responses to the question.

Consumers are expected to enjoy inherently ingesting medicinal additives via food stuffs rather than the drugs [21]. New taste and flavor are the motivation factors to produce new probiotic products [22,23] and development process of a new probiotic product would be challenging either scientific or applied research [24]. Comparing literature with our results showed that there is high potential for commercialization of probiotic olives. In this study, marketing potential of black and stuffed green olives were determined higher than olive paste and green olives.

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