

STUDY ON THE ASSESSMENT OF SOME BEVERAGES AND FOODS BY THE iTQi AT WORLD LEVEL

Cecilia POP, Gabriela FRUNZĂ

University of Agricultural Sciences and Veterinary Medicine Iasi, Romania

Corresponding author email: frunza.gabriela27@gmail.com

Abstract

The paper aims carrying out an analysis of the results of the evaluation of beverages and food products by the International Institute for Taste and Quality (iTQi) worldwide. Similar to the 'Michelin Red Guide' authority, iTQi does not organize a competition, but rewards each product for its psychosensory characteristics. Methodological, were analyzed, hierarchized and synthesized information collected from the iTQi database. The data processed in the study covers the period 2015-2017 and refers to the distribution of the distinctions obtained by the evaluated products, by category of prizes (the Diamond Taste Award - DTA, the Crystal Taste Award - CTA and the Superior Taste Award - STA) and geographical areas. The conclusions of the study reveals the increasing trend in the number of distinctions granted by iTQi, from 1243 in 2015 (1194 STA, 41 CTA and 8 DTA) to 1553 in 2017 (1513 STA, 30 CTA and 11 DTA). Romania occupies 14th place in Europe with 36 STA obtained during the analyzed period, a situation that should be improved through measures of stimulation of a more active participation and targeting the higher categories of distinctions, DTA and CTA.

Key words: quality, taste, awards, food products.

INTRODUCTION

Food products are characterized through an ensemble of specific and variable psycho-sensorial properties as number and intensity. These properties are very important to consumers, being one of the important criteria for accepting or rejecting a product and implicitly for adopting the purchasing decision.

In the literature it is appreciated that these properties participate with a weight of about 60% in the whole characteristics who compete to achieving the overall quality of a food product (Necula V., 2010).

The assessment of these properties is accomplished through sensory organs, which transmit central nervous system information; the latter compares those with the information already stored in its database, which implies a high degree of subjectivity.

For this reason, research done in the last decades have targeted the elaboration of some methods of sensory analysis with a very high degree of objectivity of the results.

With the improvement of sensory analysis methods and specialized institutions for the evaluation of beverages and food products have appeared, one of these being the International Taste and Quality Institute (iTQi).

Headquartered in Brussels, Belgium, iTQi has been active since 2005 and is evaluating any beverage or food product available in retail (Rodrigues Do Carmo 2013, Zanca, 2016). Like the "Michelin Red Guide" authority, iTQi does not organize a competition but rewards each product for its psycho-sensory characteristics after a "blind" assessment. These awards have been awarded since 2005 and represent a special international recognition (Lee et al 2015, Montse Vázquez, et al 2013, Rodrigues Do Carmo 2013, Zanca, 2016) centered on the unbiased judgment of 140 sommeliers and Chefs (specialists of different nationalities) trained in the application of the sensory analysis methodology of food. They have practiced their profession in Europe, but also in North American, Central and South American countries as well as in Japan, China, Thailand, Australia.

The iTQi jury is unique in the world because it is selected through its exclusive partnership with 15 prestigious associations of professional sommelier and chefs from Europe.

Members of the jury are recognized by authorities such as Michelin Red Guide, Gault Millau Guide being selected for exceptional expertise in objective appreciation of the psychosensory properties of beverages and

food products as well as for the ability to suggest potential improvements as a result of the sensory analysis performed.

The iTQi is an independent organization dedicated to certifying the taste of food and beverages around the world; the validity of the distinctions granted is authorized for a period of three years.

To ensure that the products tested have the same quality as well as those that reach consumers, iTQi has the right to evaluate in the accredited laboratories the physico-chemical characteristics of the samples received. The products are presented to the jury prepared, heated or cooked in conformity with the instructions of producer.

Based on the sensory analysis methodology and depending on the intensity of satisfaction felt at tasting, the jury gives each product a maximum of 100 points, targeting the following criteria: first impression, appearance, smell, texture, taste and aftertaste (retro-olfaction).

DTA is the highest distinction granted by iTQi (the product analyzed obtaining over 90 points, seven times in the last 10 years), followed by CTA (product achieving over 90 points, three years in a row). All products with a minimum score of 70 points are valued as STA and awarded as follows: a gold star for products with "Notable taste" (70-79 points), two gold stars for "Remarkable" products (80-90 points) and three gold stars for "Exceptional" products (over 90 points) [7, 8, 9, 10].

MATERIALS AND METHODS

There have been processed, analyzed and synthesized the information obtained after studying the database managed by iTQi. The iTQi database includes drinks and food products proposed for evaluation by their manufacturers. The data introduced and processed in the study targeted the entire period for which there are records (2015-2017).

The hierarchy, processing and synthesizing data has been achieved according to geographical regions of which the products originate (Asia, North America, Central America and South America, Africa, Oceania and Europe) and according to the distinctions obtained by beverages and food products assessed by the iTQi jury: DTA (over 90 points, seven times in the last 10 years), CTA (over 90 points, three

years in a row) and STA ("Notable taste", 70-79 points, "Remarkable" products, 80-90 points, and "Exceptional" products, over 90 points).

The expression of results was made in absolute and relative values to be able to be compared, analyzed and interpreted more easily. The interpretation of data has been completed with an analysis of the results of iTQi's evaluation of beverages and food products worldwide. This analysis led to formulation some conclusions and recommendations to improve the level of participation of countries to these types of assessments, accessing to a larger extent and the higher categories of distinctions, PDG and PCG.

RESULTS AND DISCUSSIONS

Sensory analysis applied correctly and scientifically is part of the assembly of modern analytical methods which allows the realization of a real and complete assessment of food products quality, which could not be achieved using only physicochemical and microbiological methods. Through its work, iTQi highlights the sensory value of the analyzed products, decisive value in the purchasing behaviour of consumers. Thereby, during the study period, iTQi has granted worldwide **4174** distinctions for beverages and food products evaluated: 1242 (29.8% of the total period) in 2015, 1383 (33.1%) in 2016 and 1549 (37.1%) in 2017. Of these, only 0.7% (28) were DTA and 2.9% (119) had CTA; the majority share was represented by STA, respectively 86.4% (4027).

Depending on the geographic regions of the world, Europe holds 58.03% from awards (with 36 participating countries), followed by Asia, 30.47% (with 25 participating countries), by North, Central and South America, 10.21% of awards (with 19 participating countries), by Africa, 0.67% (with nine participating countries) and Oceania, 0.60% (with three participating countries). In European countries, iTQi has granted 2429 awards (58.03% of total), respectively 797 awards in 2015, 799 awards in 2016 and 833 in 2017 (Table 1 and table 2). First place, of 91 participating countries, there was **Japan**, she amassing 778 awards (214 in 2015, 257 in 2016 and 307 in

2017), holding a share of 18.60% of the total. From these 778 products awarded, 50.77% obtained between 80 and 90 points, 29.82%

obtained over 90 points and 13.75% obtained between 70 and 80 points. Only 4.11% obtained CTA and 1.54% obtained DTA.

Table 1. Category of prizes awarded by iTQi over the period 2015-2017 worldwide

Regions	COUNTRY	DTA				CTA				STA				TOTAL AWARDS			
		Year	2015	2016	2017	Total	2015	2106	2017	Total	2015	2016	2017	Total	No.	%DTA	%CTA
Asia	Japan	2	5	5	12	7	14	11	32	205	238	291	734	778	1.5	4.1	94.4
	China	-	-	-	-	1	-	2	3	29	58	104	191	194	-	1.5	98.5
	Thailand	-	-	-	-	-	-	-	-	10	31	44	85	85	-	-	100
	Korea	-	-	-	-	-	-	-	-	5	24	34	63	63	-	-	100
	India	-	-	-	-	-	-	-	-	13	4	9	26	26	-	-	100
	Myanmar	-	-	-	-	-	-	-	-	2	6	13	21	21	-	-	100
	Singapore	-	-	-	-	-	-	-	-	4	9	3	16	16	-	-	100
	Malaysia	-	-	-	-	-	-	-	-	1	5	5	11	11	-	-	100
	Vietnam	-	-	-	-	-	-	-	-	2	5	3	10	10	-	-	100
	Other ¹⁾	-	-	-	-	1	1	-	2	16	31	12	59	61	-	3.2	96.8
Total region		2	5	5	12	9	15	13	37	287	411	518	1216	1265	-	-	-
America	Canada	-	-	-	-	-	-	-	-	16	31	8	55	55	-	-	100
	U.S.A.	-	-	-	-	1	-	-	1	15	10	13	38	39	-	2.6	97.4
	Mexico	-	-	-	-	-	-	1	1	8	4	9	21	22	-	4.6	95.4
	Colombia	-	-	1	1	2	-	-	2	28	27	46	101	104	0.97	1.9	97.1
	Ecuador	-	-	-	-	-	1	-	1	16	14	24	54	55	-	1.8	98.2
	Peru	-	-	-	-	1	-	-	1	11	18	20	49	50	-	2	98.0
	Brazil	-	-	-	-	-	-	-	-	11	14	16	41	41	-	-	100
	Panama	-	-	-	-	-	-	-	-	5	6	4	15	15	-	-	100
Other ²⁾	-	-	-	-	-	1	1	2	16	10	17	43	45	-	4.5	95.5	
Total region		-	-	1	1	4	2	2	8	126	134	157	417	427	-	-	-
Africa³⁾		-	-	-	-	-	-	-	-	7	10	11	28	28	-	-	100
Europe	Germany	2	1	2	5	10	10	1	21	105	120	111	336	362	1.39	5.81	92.8
	Greece	-	-	-	-	1	3	2	6	118	106	119	343	349	-	1.7	98.3
	Spain	1	3	2	6	1	4	3	8	72	91	121	284	298	2.0	2.7	95.3
	Belgium	-	-	-	-	2	3	2	7	100	82	100	282	289	-	2.4	96.6
	Turkey	-	-	-	-	1	1	-	2	42	71	93	206	208	-	0.97	99.0
	Italy	2	-	-	2	4	1	4	9	53	50	68	171	182	1.1	5	93.9
	Netherlands	1	-	-	1	2	-	-	2	39	34	43	116	119	0.8	1.7	97.5
	Croatia	-	-	-	-	-	2	-	2	27	34	23	84	86	-	2.3	97.7
	Un. Kingdom	-	-	-	-	-	-	-	-	26	22	8	56	56	-	-	100
	Portugal	-	-	1	1	-	1	-	1	20	16	16	52	54	1.9	1.9	96.2
	Lithuania	-	-	-	-	1	3	-	4	25	14	6	45	49	-	8.1	91.8
	Poland	-	-	-	-	1	-	1	2	17	19	9	45	47	-	4.3	95.7
	Belarus	-	-	-	-	1	1	-	2	15	15	12	42	44	-	4.6	95.4
	Romania	-	-	-	-	-	-	-	-	7	12	17	36	36	-	-	100
	Russia	-	-	-	-	-	-	-	-	18	0	5	23	23	-	-	100
Austria	-	-	-	-	1	-	-	1	4	10	8	22	23	-	4.4	95.6	
France	-	-	-	-	-	-	1	1	10	8	2	20	21	-	4.8	95.2	
Norway	-	-	-	-	-	-	-	-	9	3	9	21	21	-	-	100	
Other ⁴⁾	-	-	-	-	2	1	1	4	57	58	43	158	162	1.2	2.5	96.3	
Total region		6	4	5	15	27	30	15	72	764	765	813	2342	2429	-	-	-
Oceania	Australia	-	-	-	-	-	-	-	-	5	2	4	11	11	-	-	100
	Fr. Polynesia	-	-	-	-	1	-	-	1	-	-	-	1	2	-	50	50
	Fiji	-	-	-	-	-	-	-	-	3	4	5	12	12	-	-	100
Total region		-	-	-	-	1	-	-	1	8	7	9	24	25	-	-	-
WORLD TOTAL		8	9	11	28	42	47	30	119	1192	1327	1508	4027	4174	0.7	2.9	96.4

¹⁾ Countries with less than 10 products awarded during the analyzed period (Sri Lanka, Philippines, Pakistan, United Arab. Emirates, Iran, Azerbaijan, Kazakhstan, Afganistan, Saudi Arabia, Oman, Palestina, Kuwait, Hong Kong, Nepal)

²⁾ Countries with less than 10 products awarded during the analyzed period (Bolivia, Uruguay, Argentina, Chile, Guatemala, Venezuela, Paraguay, Suriname, Cuba, Saint Lucia, Costa Rica)

³⁾ Countries with less than 10 products awarded during the analyzed period (S. Africa, Cape Verde, Tunisia , Algeria, Togo, Congo, Morocco, Namibia, Reunion)

⁴⁾ Countries with less than 10 products awarded during the analyzed period (Slovenia, Luxembourg, Hungary, Sweden, Switzerland,Finland, Latvia, Serbia,Ukraine, Cyprus, Bosnia Herz., Ireland, Czech , Bulgaria , Liechtenstein, Iceland, Slovakia)

Second place in the world (first place at a share of 8.63%. European level) is occupied by **Germany**, with

Table 2. The total number and % total of prizes awarded by iTQi over the period 2015-2017 worldwide

Regions	COUNTRY	2015		2016		2017		Total 2015-2017		
		No.	% region	No	% region	No.	% region	No.	% total region	%total worldwide
Asia	Japan	214	71,8	257	59,8	307	57,2	778	61,5	18,6
	China	30	10,1	58	13,5	106	19,7	194	15,3	4,6
	Thailand	10	3,3	31	7,2	44	8,2	85	6,7	2,0
	Korea	5	1,7	24	5,6	34	6,3	63	5,0	1,5
	India	13	4,4	4	0,9	9	1,7	26	2,1	0,6
	Myanmar	2	0,7	6	1,4	13	2,4	21	1,7	0,5
	Singapore	4	1,3	9	2,1	3	0,6	16	1,3	0,4
	Malaysia	1	0,3	5	1,1	5	0,9	11	0,8	0,3
	Vietnam	2	0,7	5	1,2	3	0,6	10	0,8	0,3
	Other ¹⁾	17	5,7	31	7,2	13	2,4	61	4,8	1,5
Total region		298	100	430	100	537	100	1265	100	30,3
America	Canada	16	12,2	31	22,6	8	5,0	55	12,9	1,3
	U.S.A.	16	12,1	10	7,3	13	8,2	39	9,1	0,9
	Mexico	8	6,1	4	2,9	10	6,3	22	5,1	0,5
	Colombia	30	22,9	27	19,7	47	29,6	104	24,4	2,5
	Ecuador	16	12,3	15	10,9	24	15,1	55	12,9	1,3
	Peru	12	9,2	18	13,2	20	12,6	50	11,7	1,2
	Brazil	11	8,4	14	10,2	16	10,0	41	9,6	1,0
	Panama	5	3,8	6	4,4	4	2,5	15	3,5	0,4
	Other ²⁾	16	13,0	11	8,8	18	10,7	46	10,8	1,1
Total region	131	100	137	100	159	100	427	100	10,2	
³⁾ Africa		7	100	10	100	11	100	28	0,67	0,67
Europa	Germany	117	14,7	131	16,4	114	13,7	362	14,9	8,7
	Greece	119	14,9	109	13,6	121	14,5	349	14,4	8,4
	Spain	74	9,3	98	12,3	126	15,2	298	12,3	7,1
	Belgium	102	12,8	85	10,6	102	12,3	289	11,9	6,9
	Turkey	43	5,3	72	9,0	93	11,2	208	8,6	5,0
	Italy	59	7,4	51	6,4	72	8,7	182	7,5	4,4
	Netherlands	42	5,3	34	4,3	43	5,3	119	4,9	2,9
	Croatia	27	3,4	36	4,5	23	2,8	86	3,5	2,1
	Un. Kingdom	26	3,3	22	2,8	8	1,0	56	2,3	1,3
	Portugal	20	2,5	17	2,1	17	2,0	54	2,2	1,3
	Lithuania	26	3,3	17	2,1	6	0,7	49	2,0	1,2
	Poland	18	2,3	19	2,4	10	1,2	47	1,9	1,1
	Belarus	16	2,0	16	2,0	12	1,5	44	1,8	1,0
	Romania	7	0,9	12	1,5	17	2,0	36	1,5	0,9
	Russia	18	2,3	0	0,0	5	0,6	23	0,9	0,6
	Austria	5	0,6	10	1,2	8	1,0	23	1,0	0,5
	France	10	1,3	8	1,0	3	0,4	21	0,9	0,5
	Norway	9	1,1	3	0,4	9	1,1	21	0,8	0,5
	Other ⁴⁾	59	7,3	59	7,4	44	5,3	162	6,7	3,9
Total region	797	100	799	100	833	100	2429	100	58,3	
Oceania	Australia	5	55,6	2	28,6	4	44,4	11	44	0,2
	Fr. Polynesia	1	11,1	1	14,3	0	0,0	2	8	0,1
	Fiji	3	33,3	4	57,1	5	55,6	12	48	0,3
Total region	9	100	7	100	9	100	25	100	0,6	
Total annual worldwide	1242	-	1383	-	1549	-	-	-	-	
Total period worldwide					4174				100	

1) Countries with less than 10 products awarded during the analyzed period (Sri Lanka, Philippines, Pakistan, United Arab. Emirates, Iran, Azerbaijan, Kazakhstan, Afganistan, Saudi Arabia, Oman, Palestina, Kuwait, Hong Kong, Nepal)

2) Countries with less than 10 products awarded during the analyzed period (Bolivia, Uruguay, Argentina, Chile, Guatemala, Venezuela, Paraguay, Suriname, Cuba, Saint Lucia, Costa Rica)

3) Countries with less than 10 products awarded during the analyzed period (S. Africa, Cape Verde, Tunisia , Algeria, Togo, Congo, Morocco, Namibia, Reunion)

4) Countries with less than 10 products awarded during the analyzed period (Slovenia, Luxembourg, Hungary, Sweden, Switzerland,Finland, Latvia, Serbia,Ukraine, Cyprus, Bosnia Herz., Ireland, Czech , Bulgaria , Liechtenstein, Iceland, Slovakia)

It had fewer award-winning products (362) compared to Japan, but has a higher share of the taste quality of the evaluated products, 34.53% being considered exceptional, obtaining between 90 and 100 points (about 5% more than Japan). Also, the awards for the last category of prizes (70-80 points) are fewer for Germany (7.18% versus 13.75%). For the DTA and CTA categories, the two countries have accumulated close values 1.38% versus 1.54 and 5.80% versus 4.11%.

On 3rd place in the world it is situated **Greece** with a share of 8.34% of the total, very close to the second place, with 349 products awarded. It is noticed that a share of over 40% of iTQi awards were received by only six European countries: Germany 8.63%, Greece 8.34%, Spain 7.12%, Belgium 6.91%, Turkey 4.97% and Italy 4.35% of the total of 91 participating countries at tasting sessions.

Romania occupies 23rd place in the world (14th place in Europe) receiving a total of 36 awards: seven awards in 2015 (19.4% of the total), 12 awards in 2016 (33.3% of the total) and 17 awards in 2017 (47.3% of the total); most of them were awarded for "remarkable" products (22 products, 61.1%), ten products (27.8%) being appreciated as "exceptional" and four products (11.1%) being considered with "notable taste".

Following the evaluation of the products by the iTQi jury, manufacturers receive:

- a free sensory analysis chart summarizing the opinion of the jury;
- a sensory analysis report that provides information on five main sensory criteria (first impression, vision, smell, texture, taste, aroma) with a total of 12 to 25 sensory subcriteria and includes suggestions for product improvement, if is the case;
- an association report of food with drinks detailing more combination of tastes, customized for tasting products.

The information provided by iTQi helps manufacturers to improve the quality of their products, being used by those involved in the activity of research, development and quality control.

Prizes awarded iTQi stands for promotion tools in marketing campaigns but also for negotiating the sales price of the respective products.

Regional data analysis highlights the first three places: Europe with a share of 58.3% of the total prizes awarded (2429 awards), Asia with 30.3% of the total (1265) and America with 10.2% of the total (427).

This situation reflects the reality of the efforts made by these regions in the direction of quality

improvement. "New European Vision for Quality" cultivates the concept of "**MADE in EUROPE**" with the mission to become the modern emblem of the products and services offered by Europeans to all international trade, a philosophy of quality and respect for the consumer (Pop Cecilia et al, 2013).

At the same time, Europe is also recognized for the most demanding food safety legislation in the world. As for Asia, we mention that Japan obtained 61.5% of the total awards to this region and 18.6% of the world total. Moreover, Japan occupies the world's first place, earning 778 awards followed by Germany with 362 awards; both countries are recognized worldwide for product quality realized.

CONCLUSIONS

The results obtained for the analyzed period (4174 distinctions granted) indicates a worldwide increase of about 25% of the interest shown for participation in such assessments (from 1242 prizes in 2015 to 1549 prizes in 2017). Of these, only 0.7% (28) were DTA and 2.9% (119) CTA; the majority share was represented by STA, respectively 86.4% (4027). These results, reveals in the equal measure, both the rigorousness of the assessment made by the iTQi jury as well as the need to intensify research to improve the sensory quality of beverages and food products.

On first place, of 90 participating countries, was placed Japan, she earning 778 prizes, followed by Germany with 362 awards, Greece with 349 awards, Spain with 298 awards, Belgium with 289 awards and Turkey with 208 awards. China occupies the seventh place worldwide (194 awards), USA 22nd place (39 awards), and Romania ranks 23rd in the world and 14th place in Europe (with 36 STAs in the analyzed period).

Considering the fact that consumer attitude in the buying process is based and the cognitive component (which targets elements such as: informing relating to the characteristics of the product, the extent to which the product it will give him satisfaction, the degree of trust that can be attributed to it) we consider that participation as broad as possible of manufacturers at iTQi ratings should be more supported and encouraged.

This support could be achieved by promoting the benefits of iTQi assessment at the level of Professional Associations of manufacturers and processors. The final results obtained by the iTQi evaluators are confidentially communicated to the participating manufacturers together with an analysis report, comments and additional suggestions about their products, which can help them greatly in the process of improving the sensory quality of foods. At the same time, the iTQi emblem, which can be applied on the packaging/label, constitutes a "trust bulletin" of the product for consumers, which helps to increase the sales and at the same time the visibility of the products on the national and international market.

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