

Focus on black tea bags

Report on comprehensive quality research
in four European markets



This report is the result of the European Commission-funded project “The same but different – is food in Baltic region different from what consumers eat in Western Europe?”. The project is implemented by a consortium coordinated by the Foundation of Consumers’ from Poland and including the following consumer organisations: National Consumer Confederation from Lithuania, Latvian National Association for Consumer Protection from Latvia and the Institute of Horticulture – National Research Institute from Poland. In May 2021, we conducted comprehensive laboratory and sensory testing of black tea bags and ground coffee purchased in four markets: Polish, Lithuanian, Latvian and German. We checked for the issues of dual quality between the countries in which the tested coffees and teas were purchased.

The research results are available to consumers on our websites in the form of the coffee and tea quality reports.

Please send any comments on the report to: testy@konsumenci.org

Warsaw, Vilnius, Riga, December 2021.

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Design: Piotr Świderek

Typesetting: Magda Warszawa



Fundacja Konsumentów
[Foundation of Consumers, FK]
www.konsumenci.org



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[National Consumer Confederation, NVK]
www.vartotojai.eu



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Aizstāvības Asociācija
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www.pateretajs.lv



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Introduction

We invite you to read the report prepared by consumer organisations: Consumers' Foundation from Poland (project leader), Nacionaline Vartotoju Konfederacija from Lithuania and Latvijas Pateretaju Interesu Aizstavibas Asociacija from Latvia, in cooperation with Institute of Horticulture – National Research Institute from Skierniewice.

In this report, we present the test results of 20 different brands of black tea bags bought in Lithuania, Latvia, Poland and Germany.

What is their quality? Do they contain pesticide or heavy metal residues? Which tea has more caffeine and other desirable phenolic compounds? The answers to these questions can be found in the first part of our report.

And if you want to know whether the tea you buy in Germany is different from the one you buy in Latvia, or whether the tea you buy in Poland is different from the one you buy in Lithuania, be sure to take a look at the second part, in which we discuss the subject of dual quality of the tested tea.

We test food products because we want to know their quality and whether they are safe. We also want to check whether manufacturers and retailers fairly promote their products and provide us with reliable information.

By publishing the research results, we want to encourage producers to raise their standards and to make it easier for consumers to make informed choices.

This report is also a call for a tightening of the food control system along the entire supply chain (from field to plate) in Europe. We have the right to food that is uncontaminated with heavy metals, glyphosate or other dangerous substances. Let us get to know the quality of the food that ends up on our tables.

1. Products Tested

Consumers in our countries most often compare the products they buy to products of the same brand available in the German market. For this reason, the products for the study were selected after checking which teas are available in stores in Lithuania, Latvia, Poland (i.e. in the countries where our organisations operate) and Germany.

All products were purchased in stores (stationary or online) as part of typical consumer purchases, in the same quantity in each market studied. Then the secured and coded samples were sent to the laboratory.

We selected the most popular teas as well as those sold as 'eco', 'bio' or 'organic' to check if their quality was comparable to that of popular brands.

For the study, we tested 20 different brands of black tea bags, and since most of them were available in several countries, a total of 41 products (samples) were tested.

Five of them were available in all four markets covered by the study. Some can be purchased in three, two or only one market (these are mainly 'organic' teas).



Which products were tested

	D	LT	LV	PL
APSARA English Breakfast				
APSARA Earl Grey				
AHMAD English Tea No.1				
AHMAD English Breakfast				
CUPPER Organic English Breakfast Tea				
Dary Natury				
DILMAH Ceylon Gold				
DILMAH Premium Tea				
ENGLISH TEA SHOP English Breakfast				
GREENFIELD Golden Ceylon				
ICA I LOVE ECO Ekologiskt svart te med smak				

	D	LT	LV	PL
LIPTON Black Tea BIO				
LIPTON Yellow Label				
LIPTON Gold Tea				
LORD NELSON				
MOZUMS Indian black tea				
TEEKANNE English Breakfast				
TETLEY Intensive Black Tea				
TWININGS English Breakfast				
YOGI Tea Black Chai				

2. Quality Ranking

What and how did we check?

- We first checked the actual weight of all 41 products in order to verify the accuracy of the manufacturers' label declarations.
- We then carried out two types of tests in the laboratory: chemical tests and sensory tests (expert evaluation).
- Chemical tests were carried out using accredited methods in accordance with the relevant standards and guidelines of the EU Reference Laboratories. We checked whether the black tea bags contained residues of pesticides (one of 502 compounds, including glyphosate) or heavy metals (one of four: arsenic, lead, cadmium and mercury) that could threaten our safety.
- We also determined the content of desirable polyphenolic compounds and caffeine in tea.
- As part of the sensory testing, the tea was evaluated in the laboratory by a group of expert panellists, and an ISO-compliant sensory profiling method (QDA) was used for the sensory evaluation of each of the 41 black tea bags we tested.
- The results of all tests were described for each sample in a separate report with high accuracy and including data such as place and date of purchase, batch number and date of the test.

How did we assess the quality of the tea?

First of all, as consumers, we know that tea must have a good taste and aroma. That is why the tea infusions were evaluated using a sensory profiling method by 24 experts who used 13 parameters to evaluate the teas, such as taste (e.g. intense, astringent, sour or bitter), aroma (e.g. pleasant, fruity, floral, herbal) and appearance of each sample (e.g. colour). The average of their scores on a scale from 0 to 10 is the overall sensory score. Coded samples of brew were served to the panelists in random order in porcelain cups. We believe that good taste and aroma enhance the quality of tea.

Sensory evaluation	We rated tea quality as 5 (★★★★★) if its sensory evaluation was higher than 7.
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Contribution to the final score: 50%	The higher the score, the better ***** ≥ 7.0 **** ≥ 6.5 *** ≥ 5.5 ** ≥ 4.5 * > 4.0
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Secondly, the quality of tea is assessed mainly by its content of caffeine and other phenolic compounds, especially from the catechin group (e.g. epigallocatechin gallate), which have antioxidant properties as well as anti-inflammatory, anti-cancer, anti-diabetic and generally heart-beneficial effects. It is thanks to the content of these special phenolic compounds that tea is an excellent and easily accessible preventive measure to support the proper functioning of the human body.

Phenolic compounds	We rated tea quality as 5 (★★★★★) if the phenolic compound content of the sample was greater than 200 mg/100 ml of tea brew.
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Contribution to the final score: 30%	The higher the content, the higher the score ***** ≥ 200 mg/100ml **** ≥ 170 mg/100ml *** ≥ 140 mg/100ml ** ≥ 110 mg/100 ml * ≥ 80 mg/100 ml
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Thirdly, we have adopted the principle that, although no maximum permissible levels have been set for heavy metal residues in tea, their presence reduces the quality of the product. The teas we tested contained trace amounts of arsenic, cadmium and mercury. However, the lead content was higher, and the tested samples varied in its amount. Although lead content is not illegal, we believe that consumers have the

right to know which tea has more and which has less lead, as this could be one of the consumer choice criteria.

We rated tea quality as 5 (★★★★★) if the lead residue in the sample was less than 0.1 mg/kg of tea.	Lead residue
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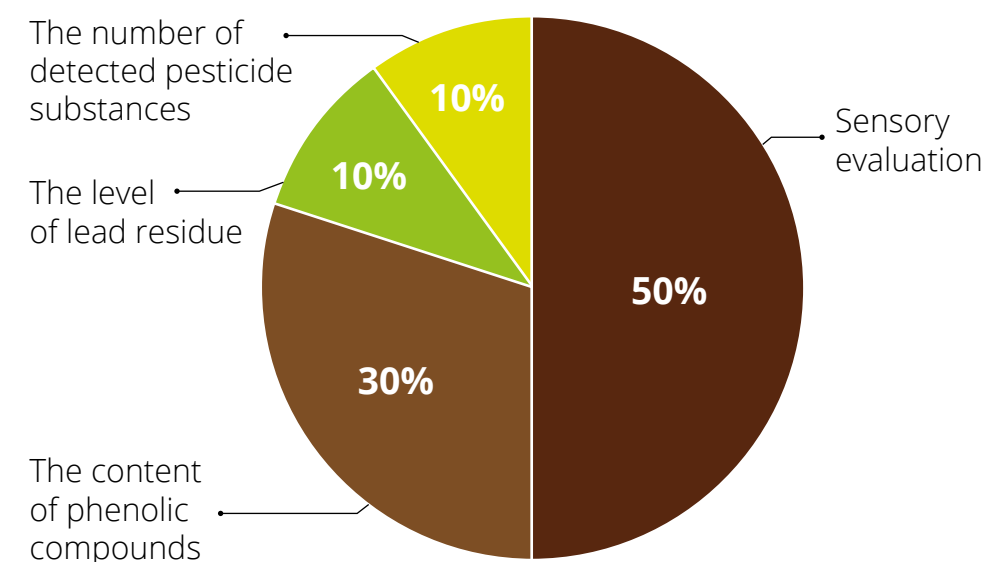
The less the residue, the higher the score ***** ≤ 0,1 mg/kg **** ≤ 0,2 mg/kg *** ≤ 0,3 mg/kg ** ≤ 0,4 mg/kg * ≤ 0,5 mg/kg	Contribution to the final score: 10%
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Fourthly, we have adopted the principle that an exceeded pesticide content eliminates a product from further testing. Pesticide residues found in the teas (with the exception of an inconclusive result for TMS – as described in the next section) did not exceed the maximum levels. However, we believe that the greater the number of different pesticides in a tea, the poorer its quality.

We rated tea quality as 5 (★★★★★) if the sample contained no more than one pesticide.	pesticide substances
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The lower the pesticide content, the higher the score ***** = 1 **** = 2 *** = 3 ** = 4 * = 5	Contribution to the final score: 10%
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Contribution to the final score of tea quality



Fifthly, we do not comment on the research results for which there is no clear expert opinion or established standards. At the same time, having the results of independent tests, we are obliged to make them available to consumers, who can then assess them for themselves.

In the report, this principle applies to the detection of residual **tri-methylsulfonium cation (TMS)** in all teas tested at levels exceeding the maximum level of 0.05 mg/kg. However, please note that the legal maximum level of TMS residue only applies to teas that have been grown with the use of glyphosate trimesium. Whether this was the case with the products we tested – we do not know. If so, all samples should have been disqualified as non-compliant. We also do not know whether the detected amounts of cation pose a direct threat to the health of consumers. However, recognising that the presence of pesticides in tea reduces its quality, we provide data on TMS and glyphosate residues in the ranking table.

We have covered the presence of the TMS content in the tested teas available in Poland in a separate report published in July this year, which we encourage you to read (the report is available only in Polish at www.testy.konsumenci.org).



Study Conclusions

ADVANTAGES

- 1 The weighing of the tested teas ended with a positive result. A comparison of the weight of the teas tested with the weight declared on the labels was carried out by weighing at least 200 g of each product. There were no differences between the declared weight and the actual weight of the samples.
- 2 Positive results were obtained when examining the residues of three of the four heavy metals tested: arsenic, cadmium and mercury. Mercury appeared in trace amounts in the teas tested. Also the detected amounts of arsenic and cadmium can be ignored in the quality assessment. These are quantities that do not affect our health.
- 3 No residues of pesticides other than trimethylsulphonium cation (more on this in the next section) were detected in the six teas tested, which were sold as “eco”, “bio” or “organic”. The same result was achieved by four other samples, i.e. LIPTON Yellow Label (from the Lithuanian and Latvian markets), TETLEY Intensive Black Tea (from the Polish market) and AHMAD English Tea No. 1 (from the Lithuanian market).
- 4 In the sensory profiling study (QDA), the panellists rated the taste and aroma profile of the teas. The final evaluation took into account 13 parameters characterising the tea infusion, such as taste, aroma and appearance of the sample. Each sample was given a quality rating which was higher than 5 for all samples and even higher than 6 for almost 90% of the samples. In sensory tests, that is considered to be very good quality.
- 5 According to the criteria used in the study, the maximum final quality score for tea is five (5), consisting of: 50% sensory evaluation, 30% phenolic compounds content evaluation, 10% lead residue evaluation and 10% pesticide detection. With the exception of 3 samples, all the teas tested achieved a score equal to or greater than half of the maximum score, which indicates

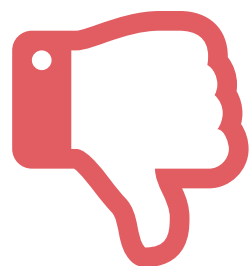


good quality of the tea. Of all the teas tested, TEEKANNE English Breakfast (final score 4.5) and CUPPER Organic English Breakfast Tea (4.1) both from the Lithuanian market were rated highest, as well as TWININGS English Breakfast from the Polish market (4.1) and MOZUMS Indian Black Tea from the Latvian market (4.0).



QUESTION MARKS

- 1 Trimethylsulfonium cation (TMS) was found in all tea samples. The maximum residue level for TMS is 0.05 mg/kg, provided that glyphosate trimesium (MRL in accordance with Commission Regulation (EC) No 396/2005) has been used on the crops. If this was the case, then the confirmed significant (more than twice) exceeding of the maximum level of TMS residues in 38 tea samples would mean that the regulations in force are being violated on a large scale. However, it is impossible to assess this result without additional tests to show whether glyphosate trimesium (a herbicide dangerous to health) was used on tea crops, as this is the only situation to which this provision applies. For this reason, when assessing the quality of teas, we do not take into account their TMS cation content. Instead, we report the detected levels of TMS residues in the table.



DISADVANTAGES

- 1 Glyphosate residues were detected in almost half of the samples (20 out of 41 samples). Detected glyphosate residues ranged from 0.040 to 0.83 mg/kg of tea and therefore did not exceed the maximum residue level of 2 mg/kg. However, what scientists know today about glyphosate is enough to conclude that its use on crops should be completely banned and its residues in food should be unacceptable. Therefore, information on the detected glyphosate residues in samples is provided in the ranking table.

- 2 Other pesticide substances detected in teas include: fungicides (dithiocarbamates, Folpet), insecticides (chlorfenapyr, cypermethrin, etofenprox, fenazaquin, imidacloprid, monocrotophos, thiacloprid, thiamethoxam), herbicides (2,4-D, diuron, MCPA and MCPB) and repellents (anthraquinone). Most of them are banned in the EU, and although their residue levels were within the legal limits, from a consumer point of view, this reduces the quality of the tea. Half of the samples tested contained at least three substances from the pesticide group, with a record number of pesticides in LIPTON Gold Tea from Lithuania (8 pesticides) and Latvia (7). Such an accumulation of even small amounts of many harmful substances reduces the quality of the tea.
- 3 The tested teas also contained lead residues. The lead content of all tested tea products was significantly higher than the content of other heavy metals. Although the legislation setting maximum levels for certain contaminants in food products does not say anything about the maximum levels of lead in tea, its presence is no good news from the consumers' perspective. The presence of lead should be monitored because we introduce it into the body unknowingly from many sources – it is present in our environment (air, water, soil). And it is definitely harmful to our health.
- 4 We considered a final score equal to or greater than half of the maximum score to be an indicator of positive tea quality. The final score of three products is below this level. These are: TEEKANNE English Breakfast (final score 2.3) from the Polish market and ASPARA Earl Grey (2.3) and YOGI Tea Black (2.3) from the Latvian market – all with a low content of phenolic compounds.

Tea quality ranking

Products from the Polish market

		Name, manufacturer, package weight	Packaging price / price per kg of coffee in euro	Sensory evaluation of the quality profile	Phenolic compounds in total	Lead residues	Number of pesticides	Pesticides – TMS cation mg/kg / glyphosate Y/N	Final quality rate
				50% of the final rate	30% of the final rate	10% of the final rate	10% of the final rate		
1		TWININGS English Breakfast, R. Twining and Company Sp. z o.o., 50g	7.99 PLN / 34.4 euro	*****	***	***	****	0.13 / N	4.1
2		AHMAD English Breakfast, Ahmad Tea FZ - LLC, 200g	21.99 PLN / 23.65 euro	****	***	****	****	0.24 / N	3.7
3		DARY NATURY, Mirosław Angielczyk Dary Natury, 37,5g	5.99 PLN / 34.4 euro	****	****	—	*****	0.22 / N	3.7
4		AHMAD English Tea No.1, Ahmad Tea FZ - LLC, 200g	23.99 PLN / 25.8 euro	****	***	****	***	0.21 / N	3.6
5		GREENFIELD Golden Ceylon, ORIMI LLC, 200g	16.99 PLN / 18.25 euro	****	***	**	**	0.17 / Y	3.3
6		DILMAH Ceylon Gold, Dilmah Ceylon Tea Company PLC, 200g	23.99 PLN / 25.8 euro	****	***	—	***	0.14 / Y	3.2
7		TETLEY Intensive Black Tea, Tetley® Tea, 200g	15.99 PLN / 17.2 euro	***	***	***	*****	0.40 / N	3.2
8		LIPTON Gold Tea, Unilever PLC - Londyn, 150g	18.69 PLN / 26.8 euro	*****	**	—	—	0.11 / Y	3.1
9		LORD NELSON, Lidl Polska Sklepy Spożywcze Sp. z o. o., 150g	5.99 PLN / 8.6 euro	****	***	—	**	0.12 / Y	3.1
10		LIPTON Yellow Label, Unilever PLC - Londyn, 200g	11.49 PLN / 12.35 euro	***	***	**	**	0.24 / N	2.8
11		DILMAH Premium Tea, Dilmah Ceylon Tea Company PLC, 200g	19.99 PLN / 21.5 euro	***	***	—	**	0.16 / Y	2.6
12		LIPTON Black Tea BIO, Unilever PLC - Londyn, 36g	10.79 PLN / 64.44 euro	***	*	**	*****	0.27 / N	2.5
13		TEEKANNE English Breakfast, Teekanne GmbH & CO KG, 175g	13.99 PLN / 17.2 euro	***	*	**	***	0.11 / Y	2.3


Products from the Lithuanian market

		Name, manufacturer, package weight	Packaging price / price per kg of coffee in euro	Sensory evaluation of the quality profile	Phenolic compounds in total	Lead residues	Number of pesticides	Pesticides – TMS cation mg/kg / glyphosate Y/N	Final quality rate
				50% of the final rate	30% of the final rate	10% of the final rate	10% of the final rate		
1		TEEKANNE English Breakfast, Teekanne GmbH & CO KG, 80g	18.93 euro / 236.63 euro	*****	*****	***	**	0.25 / Y	4.5
2		CUPPER Organic English Breakfast Tea, Allos Hof-Manufaktur GmbH, 50g	1.89 euro / 37.8 euro	****	*****	*	*****	0.11 / N	4.1
3		AHMAD English Tea No. 1, Ahmad Tea FZ - LLC, 200g	5.72 euro / 28.6 euro	****	***	****	*****	0.27 / N	3.8
4		DILMAH Ceylon Gold, Dilmah Ceylon Tea Company PLC, 200g	10.5 euro / 52.5 euro	*****	***	—	****	0.12 / Y	3.8
5		ENGLISH TEA SHOP English Breakfast, English Tea Shop (UK) Ltd., 50g	2.89 euro / 57.8 euro	****	***	**	*****	0.15 / N	3.6
6		TWININGS English Breakfast, R. Twining and Company Sp. z o.o., 50g	3.79 euro / 75.8 euro	****	***	***	****	0.13 / N	3.6
7		LIPTON Gold Tea, Unilever PLC - Londyn, 37,5g	1.89 euro / 50.4 euro	*****	***	—	—	0.12 / Y	3.4
8		DILMAH Premium Tea, Dilmah Ceylon Tea Company PLC, 200g	4.49 euro / 22.45 euro	****	***	—	****	0.11 / Y	3.3
9		LIPTON Yellow Label, Unilever PLC – Londyn, 200g	5.49 euro / 27.45 euro	***	***	****	*****	0.18 / N	3.3
10		AHMAD English Breakfast, Ahmad Tea FZ - LLC, 50g	2.5 euro / 50 euro	***	***	****	***	0.28 / Y	3.1
11		GREENFIELD GOLDEN CEYLON, ORIMI LLC, 200G	6.99 euro / 34.95 euro	***	***	***	****	0.22 / N	3.1

Products from the Latvian market

	Name, manufacturer, package weight	Packaging price / price per kg of coffee in euro	Sensory evaluation of the quality profile	Phenolic compounds in total	Lead residues	Number of pesticides	Pesticides – TMS cation mg/kg / glyphosate Y/N	Final quality rate
			50% of the final rate	30% of the final rate	10% of the final rate	10% of the final rate		
1	 MOZUMS Indian black tea, SIA „INTEKA”, 30g	0.53 euro / 17.67 euro	*****	****	—	***	0.18 / Y	4.0
2	 AHMAD English Tea No.1, Ahmad Tea FZ - LLC, 50g	1.54 euro / 30.8 euro	*****	**	****	**	0.28 / N	3.7
3	 ICA I LOVE ECO Ekologiskt svart te med smak, ICA AB, 40g	1.65 euro / 41.25 euro	****	**	****	*****	0.14 / N	3.5
4	 GREENFIELD Golden Ceylon, ORIMI LLC, 50g	1.75 euro / 35 euro	****	***	***	**	0.17 / Y	3.4
5	 APSARA English Breakfast, BARGI LTD, 40g	1.56 euro / 39 euro	***	****	**	***	0.12 / N	3.2
6	 LIPTON Gold Tea, Unilever PLC - Londyn, 150g	5.29 euro / 35.27 euro	*****	**	—	—	0.11 / Y	3.1
7	 AHMAD English Breakfast, Ahmad Tea FZ - LLC, 80g	1.95 euro / 24.38 euro	***	***	****	**	0.27 / N	3.0
8	 DILMAH Premium Tea, Dilmah Ceylon Tea Company PLC, 100g	2.99 euro / 29.9 euro	****	**	—	****	0.090 / Y	3.0
9	 LIPTON Yellow Label, Unilever PLC - Londyn, 50g	1.55 euro / 31 euro	**	**	****	*****	0.21 / N	2.5
10	 APSARA Earl Grey, BARGI LTD, 40g	1.59 euro / 39.75 euro	***	*	**	***	0.13 / N	2.3
11	 YOGI Tea Black Chai, YOGI TEA GmbH, 37,4g	3.75 euro / 100.27 euro	***	—	***	*****	0.080 / N	2.3

Products from the German market

	Name, manufacturer, package weight	Packaging price / price per kg of coffee in euro	Sensory evaluation of the quality profile	Phenolic compounds in total	Lead residues	Number of pesticides	Pesticides – TMS cation mg/kg / glyphosate Y/N	Final quality rate
			50% of the final rate	30% of the final rate	10% of the final rate	10% of the final rate		
1	 AHMAD English Tea No.1, Ahmad Tea FZ - LLC, 200g	5.49 euro / 27.45 euro	****	***	****	**	0.24 / Y	3.5
2	 TETLEY Intensive Black Tea, Tetley® Tea, 250g	5.98 euro / 23.92 euro	***	****	****	****	0.16 / Y	3.5
3	 TWININGS English Breakfast, R. Twining and Company Sp. z o.o., 50g	2.99 euro / 59.8 euro	****	**	***	****	0.10 / N	3.3
4	 AHMAD English Breakfast, Ahmad Tea FZ - LLC, 200g	4.87 euro / 24.35 euro	****	**	***	**	0.27 / Y	3.1
5	 TEEKANNE English Breakfast, Teekanne GmbH & CO KG, 175g	9.94 euro / 56.8 euro	***	***	**	**	0.17 / Y	2.8
6	 LIPTON Yellow Label, Unilever PLC - Londyn, 150g	7.99 euro / 53.27 euro	***	**	****	****	0.18 / Y	2.9



Bonus – how much caffeine is in our tea?

Black tea contains ingredients that have significant health benefits. These include caffeine, which can be comparably or even more abundant in a tea infusion than in a coffee infusion. In addition to its stimulating effect, caffeine has, among others, anti-inflammatory properties and has an inhibitory effect on cancer cells.

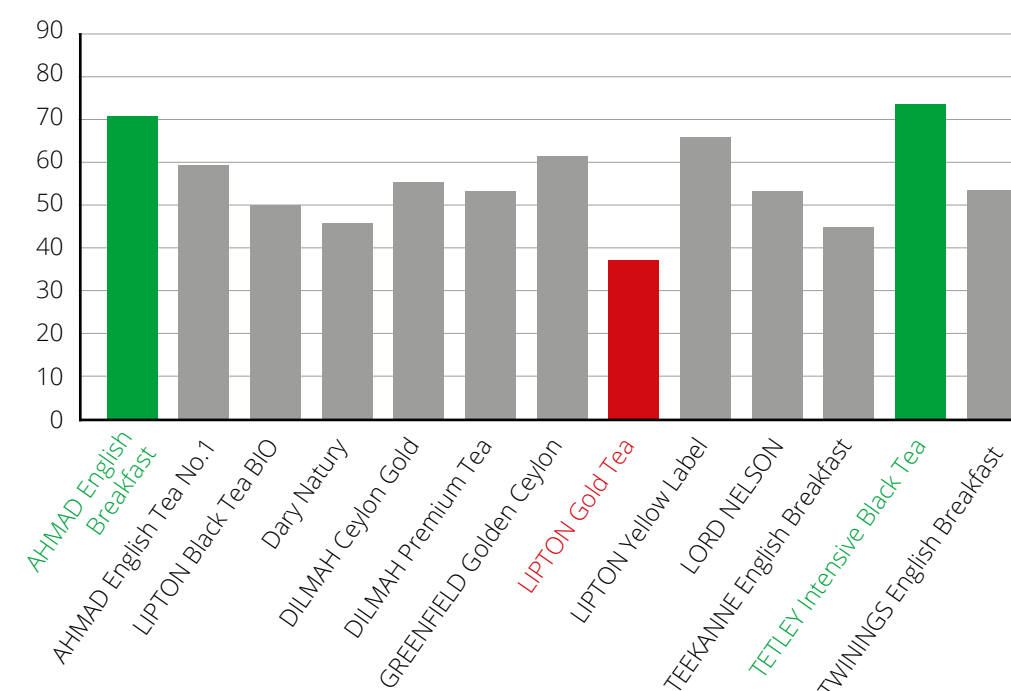
In addition, tea is an excellent source of strong antioxidants, such as catechins which effectively prevent the formation of oxygen free radicals, which are the cause of many diseases. Numerous studies have demonstrated the effect of tea catechins in inhibiting inflammatory and cancerous processes, as well as anti-diabetic effects, counteracting cardiovascular disease and neurodegenerative diseases. Thanks to the content of these particular phenolic compounds, tea is an excellent and easily accessible preventive measure to support the proper functioning of the human body.

We tested the caffeine content by preparing an infusion of one tea bag in 100 ml of water, no matter what the weight of the bag was. When brewing tea at home or at work, we simply put the teabag in the cup, so from the consumer point of view, what matters is the caffeine content in the cup.

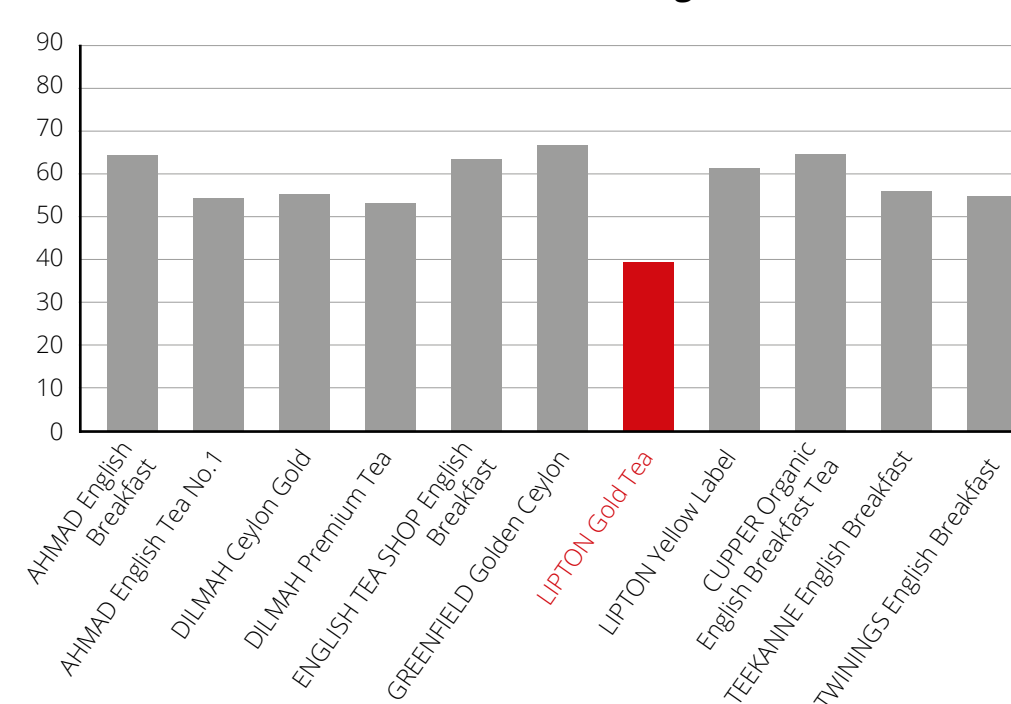
You can check the caffeine content of the teas we tested in the chart.



Caffeine content in the teas from Polish market (mg/100 ml)



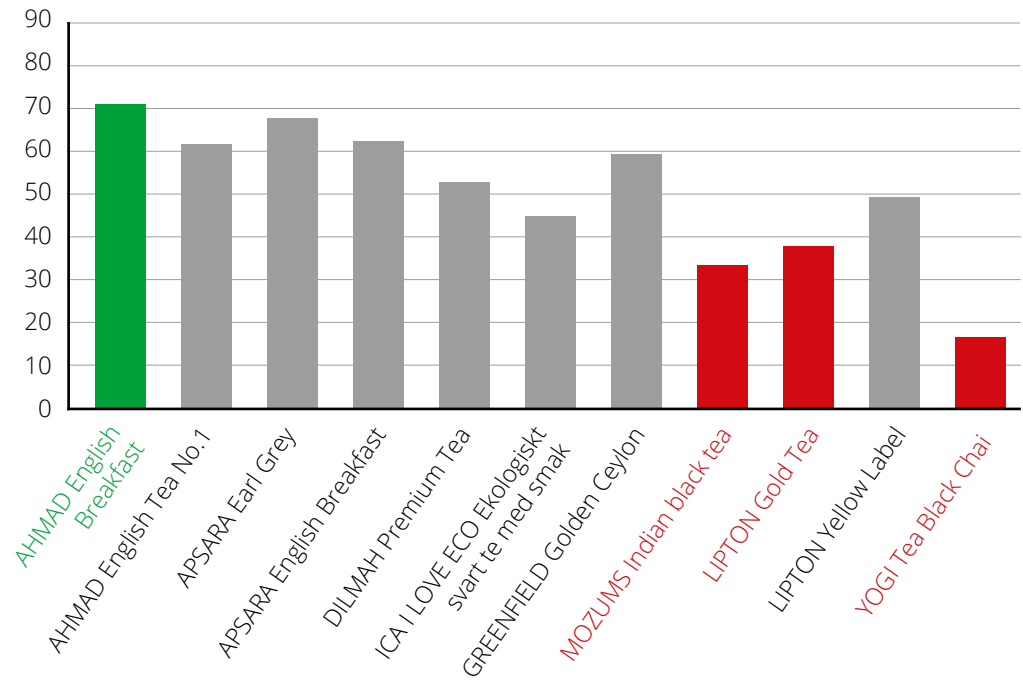
Caffeine content in the teas from Lithuanian market (mg/100 ml)



■ caffeine content above 70 mg per cup

■ caffeine content below 40 mg per cup

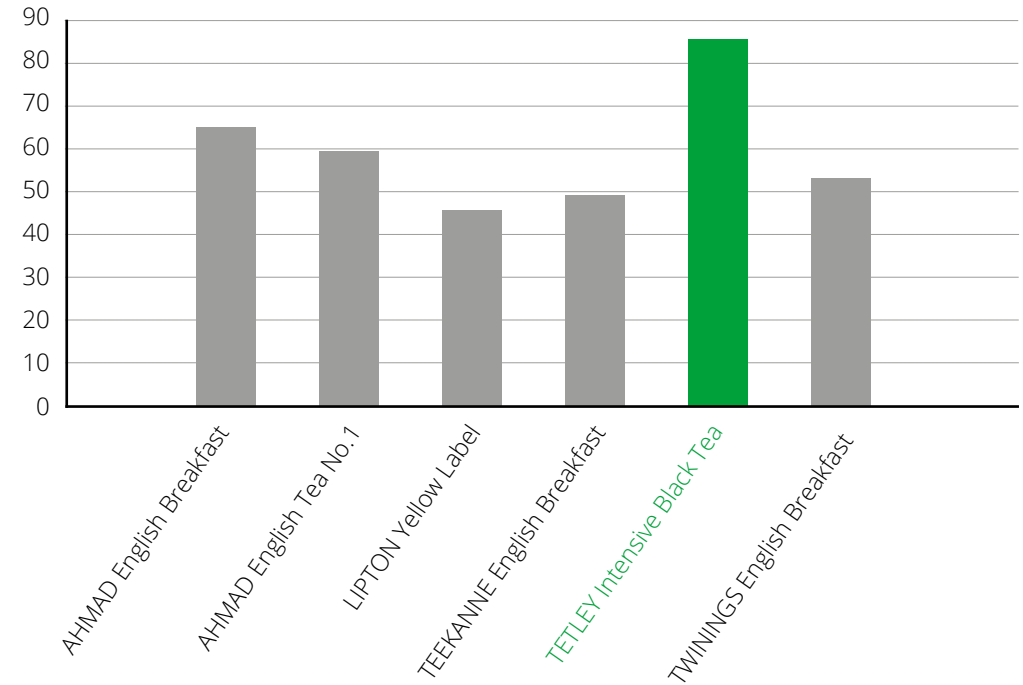
Caffeine content in the teas from Latvian market (mg/100 ml)



■ caffeine content above 70 mg per cup

■ caffeine content below 40 mg per cup

Caffeine content in the teas from German market (mg/100 ml)



3. Dual Quality

Many people in the new Member States of the European Union are convinced that global corporations supply our markets with lower quality goods. To ensure that the issue of dual quality of goods in different European markets ceases to be only a topic of private conversation between us, consumers, we examined whether the dual quality issue concerns tea.

Products tested

In the common European market, many products are sold under the same brand/name. If the name and packaging look the same, the consumer can expect to find in the packaging exactly the same product as they know from another market and make a purchase decision on that basis.

Consumers in Lithuania, Latvia and Poland most often compare the products they buy to products of the same brand available in the German market. For this reason, the products for the study were selected after checking which teas were most popular and available in Germany and in the countries where our consumer organisations operate.

Among 20 brands of tested black tea bags, five were available on the reference German market, which was the benchmark for checking the double quality issue, and on at least two of the Lithuanian, Latvian and Polish markets. These are: AHMAD English Tea No. 1, AHMAD English Breakfast, LIPTON Yellow Label, TEEKANNE English Breakfast oraz TWININGS English Breakfast.

Due to the great popularity in Poland, TETLEY Intensive Black tea, also available on the German market, was additionally included in the double-quality test.

Finally, as part of the study, we tested six different brands of black tea bags for dual quality (a total of 20 samples were tested).

What and how did we check?

The quality tests described in the previous section of the report were complemented by the following tests:

- A panel of experts evaluated the packaging of the teas tested and the way the brand was presented. The aim was to check whether teas sold under the same name in different markets had the same packaging and label design.
- Taking part in a multiple comparison test, the experts also compared the appearance and smell of dry tea bags of the same brand from different markets.
- We complemented the laboratory chemical tests with an analysis of differences in the detected pesticide and heavy metal content depending on the country of purchase.
- By determining the content of polyphenolic compounds in the tea, we tested whether there were differences in the detected content of these substances depending on the country of purchase.
- The sensory results were also compared for each brand by country of tea purchase.

Test results

Experts judged that there was no single market for which tea packaging always differed from other markets. Despite slight differences in packaging design, from a consumer point of view, products of the same brand sold in different markets can be treated as the same product. As a consequence, consumers can expect identical contents of the tested products regardless of the country in which they are purchased.

It is therefore justified to check if the dual quality issue concerns the selected products.

Evidence of dual quality of products sold in different markets under the same brand could include:

- a significantly different/lower quality of the products bought in Lithuania, Latvia and Poland compared to those bought in the reference German market, or
- different quality of products of the same brand sold in different markets with a clear trend of lower (or higher) quality in the selected market(s) – other than the reference market.

Dry tea aroma

Within a single brand, the intensity of aroma of most teas varied depending on the market in which it was purchased. The exception was Ahmad English Tea No. 1, whose aroma was rated the same for samples from all four markets.

Although we found differences in the aroma intensity of the teas depending on the market of purchase, the tests did not reveal any particular trend that could indicate the issue of dual quality.

Lead residues

We pay attention to lead because it is taken into our bodies from various sources (air, water, food), it is deposited in the body and can cause many dangerous diseases. The lead content of all the tested tea products was significantly higher than the content of other heavy metals.

Tea samples of the same brand from different countries differed in lead residue content, with the exception of TWININGS English Breakfast and Ahmad English Tea No. 1, where the differences were minimal. However, no trend indicating a higher or lower level of lead residues in a given market was detected. For example, AHMAD English Breakfast tea from Germany was found to contain 20% more lead than the same teas purchased in Lithuania, Latvia or Poland, and LIPTON Yellow Label tea

bought in Poland was found to contain almost twice as much lead as samples from other markets – not only Germany.

Pesticide residues

Trimethylsulfonium cation (TMS) was found in all tea samples. With the exception of AHMAD and TWININGS teas, different levels of TMS residues were detected in samples of the same brand from different markets, but the differences within a single brand were usually not in one but in two or three markets. For example, LIPTON Yellow Label tea had the same, lower residue levels in samples from Germany and Lithuania, and higher levels in samples from Latvia and Poland. In the case of TEEKANNE English Breakfast, tea purchased in Germany had an average level of TMS residues, with the lowest level for tea purchased in Poland and the highest for tea purchased in Lithuania.

The results were similar for residues of other detected pesticides. Glyphosate was detected in five out of six teas from the German market and in only four samples from other markets.

We did not find any trends in these differences that would indicate a dual quality issue.

Phenolic compound content

When comparing products of the same brand purchased in different markets, we found no significant differences in the content of phenolic compounds that would indicate dual quality.

Sensory quality assessment

The sensory evaluation of the tea concerned the aroma, colour, texture and taste of the tested samples. Most of the teas were of high quality and sensory appeal, and the differences were mainly observed between tea brands (e.g. in aroma notes) rather than between teas of a particular brand bought in different markets.

The same tea different? Final quality rate

Product brand		Final quality rate			
		Products from the Lithuanian market	Products from the Latvian market	Products from the Polish market	Products from the German market
	AHMAD English Tea No. 1	3.8	3.7	3.6	3.5
	AHMAD English Breakfast	3.1	3.0	3.7	3.1
	LIPTON Yellow Label	3.3	2.5	2.8	2.9
	TEEKANNE English Breakfast	4.5	—	2.3	2.8
	TETLEY Intensive Black Tea	—	—	3.2	3.5
	TWININGS English Breakfast	3.6	—	4.1	3.3

■ tea with the highest quality rate within given brand

■ tea with the lowest quality rate within given brand

Let us summarise

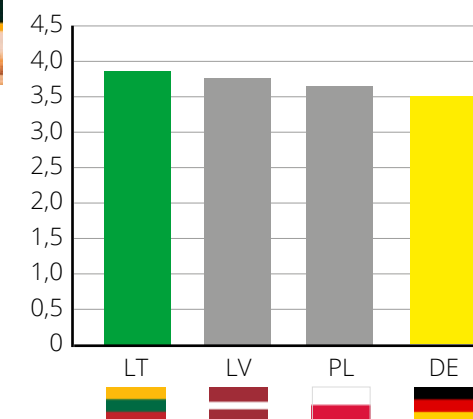
- AHMAD English Tea No. 1 – the final score of the quality of this brand's tea is similar in all the markets covered by the study.
- AHMAD English Breakfast – in view of all the criteria, tea from the Polish market was rated higher than other teas of this brand.
- LIPTON Yellow Label – products of this brand sold in the German and Latvian markets received similar scores; tea from the Lithuanian market was rated higher (mainly due to the higher content of phenols).
- TEEKANNE English Breakfast – the difference between the very low-rated sample from the Polish market and the highest-rated sample from the Lithuanian market is mainly due to the difference in the content of phenolic compounds. The sample purchased in Germany contained more of these compounds than the sample bought in Poland, but it also had more pesticide and lead residues – hence the lower final score.
- TETLEY Intensive Black Tea – both tested tea samples of this brand were evaluated at a similar level; less pesticides were detected in the sample from the Polish market, but the evaluation of other criteria was slightly lower compared to the sample from the German market.
- TWININGS English Breakfast – the lower score of the tea from the German market is due to the lower content of phenolic compounds in the sample.

Considering the number of teas with the highest rating within a single brand, teas purchased in the Lithuanian market were the best (three with the highest rating within the brand); none of them received the lowest score within their brand.

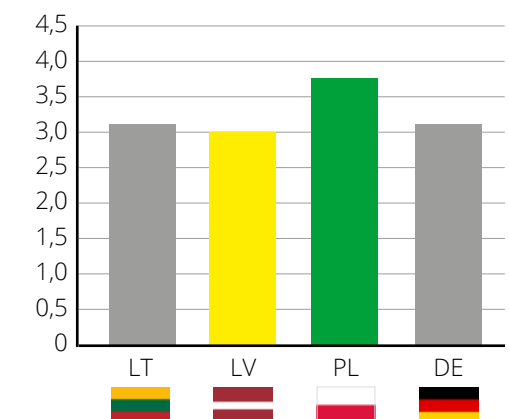
The situation in the Latvian market is the opposite. Two teas were rated the lowest within the brand and none received the highest score.



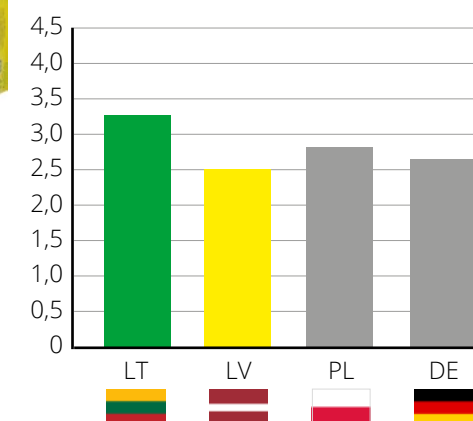
AHMAD English Tea No 1



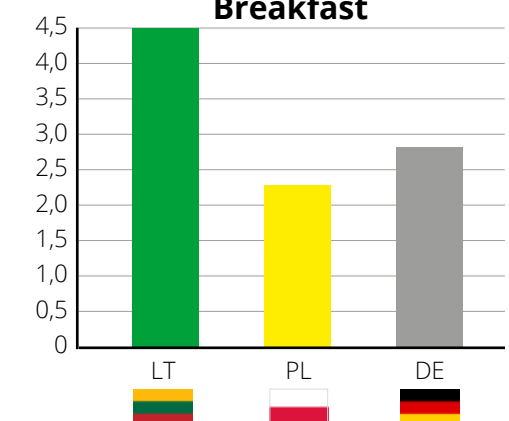
AHMAD English Breakfast



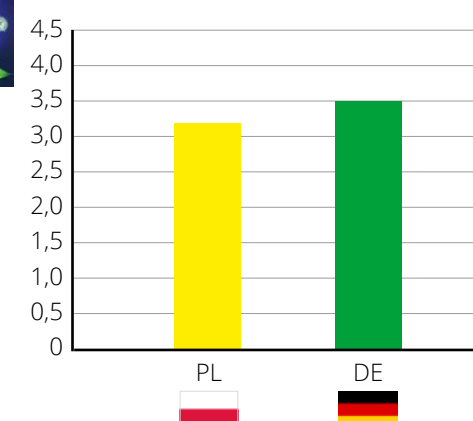
LIPTON Yellow Label



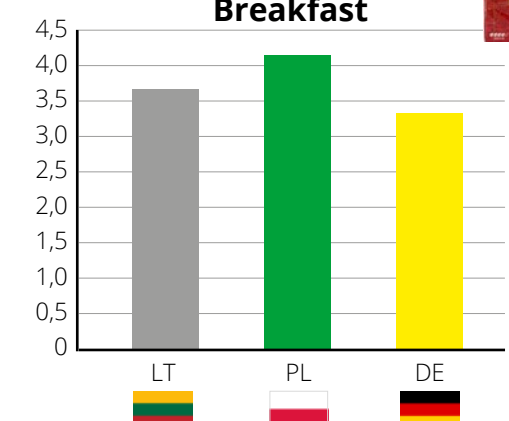
TEEKANNE English Breakfast



TETLEY Intensive Black Tea



TWININGS English Breakfast



The producer of TEEKANNE tea may be suspected of favouring the Lithuanian market at the expense of the Polish and German markets as well as of using double quality. The tea bought in Lithuania received significantly higher expert ratings in the sensory quality assessment, which is probably related to the higher content of phenolic compounds than in the other two teas from the Polish and German markets.



Authors of the Report

The Foundation of Consumers is a dynamically developing non-governmental organisation that was established in 2013 and in just a few years has grown into one of the main consumer organisations in the country. We are a group of people who care about helping consumers. Our series “Consumers test”, presents the results of independent product tests and aims to help consumers make informed choices of goods (you can find it at testy.konsumenci.org). The website porady.konsumenci.org allows you to find answers to problems related to the purchased goods in just a few minutes. For entrepreneurs, we have prepared a course on consumer law (szkolenia.konsumenci.org). The Foundation is the leader of the “Same or different” project.



Lithuanian National Consumer Confederation, founded in 2003, dealing with consultation and advocacy for consumer rights in various policies (electricity, heat, gas, climate change/environment protection, sustainable consumption, sustainable development, eco-label, e-commerce), consumer education and information.



Latvian National Association for Consumer Protection, founded in 1999, coordinates the network of 10 regional organizations; main activities: alternative dispute resolution, consumer education and information. LPIAA is a member of BEUC and ANEC and represented in the ECCG and EESC.



Research Institute of Horticulture in Skierniewice, Poland is a governmental R&D organization. Several Institute's laboratories has ISO/IEC 17025 and/or GLP certificates and perform analysis (pesticide residues, heavy metals, nitrites and nitrates and mycotoxins).





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