New analytical food composition data in Central Europe and Asia

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FAO/INFOODS project: Collection and compilation of analytical food composition data in the region of Europe and Central Asia

Rationale of the project

In Belarus, Moldova, Kazakhstan and Ukraine official national food composition databases (FCDB) do not exist.

These countries have to use other foreign sources of FCD for national purposes.

In other countries such as Bulgaria, Croatia, Hungary, Russia, Slovakia and Turkey, official FCT/FCDB are developed.

Number of analytical food composition data in these databases are limited and/or usually not traceable or updated.

Most of countries participated in the project lacking activities on the collection of relevant FCD and compilation of a national food composition database (FCDB).

Status of FCT/FCDB in Central Europe and Central Asia

	BY Belarus	BG Bulgaria	HR Croatia	HU Hungary	KZ Kazakhstan	MD Moldova	RU Russia	SK Slovakia	TR Turkey	UA Ukraine
Food composition tables (FCT)	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗
No. of foods		1100	500	850	47		1169	875	1172	
Year of publication		1975	1990	2005			2002	1997-2001		
Online FCDB	✗	✗	✗	✗	✗	✗	✓	✓	✓	✗
Last update							2014	2013	2014	
Actualisation of FCT/FCDB	✗	✗	✗	✓	✗	✗	✗	✗	✓	✗
Training - Food Comp Course	✓	✓	✓	✗	✗	✓	✗	✓	✓	✓

FAO/INFOODS project: Collection and compilation of analytical food composition data in the region of Europe and Central Asia

Aim of the project:	Produce a dataset of high quality analytical food composition data from selected countries from the region of Europe and Central Asia
FAO Responsible Officer:	Eleonora Dupouy
FAO/INFOODS:	Barbara Stadlmayr
Coordinator:	National Agricultural and Food Centre - Food Research Institute, Slovakia
Participated countries:	Belarus, Bulgaria, Croatia, Hungary, Kazakhstan, Moldova, Slovakia, Russia, Turkey and Ukraine
Period:	01/2016 – 03/2017

Timeline of the project

- Call to countries
- FAO/INFOODS e-learning on food composition data
- Workshop on data collection and checking
- Data collection (5 food lines)
- 1st data checking + data correction
- Data collection (100 food lines)
- 2nd data checking
- Preparing final dataset (harmonisation of collected data)
- Submission of dataset to FAO

Workshop on data collection and checking

FAO together with the Food Research Institute of the National Agricultural and Food Centre of Slovakia, organized a workshop, where participants from Belarus, Bulgaria, Croatia, Hungary, Kazakhstan, Moldova, Slovakia, Russia, Turkey and Ukraine were trained to collect data from analytical data sources and to compile them.

Workshop on data collection and checking

The workshop was the inception element of a regional FAO project, which aims to collect and compile good quality, reliable, traceable, properly documented analytical food composition data.

The workshop was held 12th-15th April 2016 at the Food Research Institute in Bratislava, Slovakia.

The workshop provided training to the data collectors from the participating countries, which covered each aspect of the data collection process.

The objective was to ensure the quality and reliability of the compiled FCD based on FAO INFOODS recommendations.

Data collection process

- Data collection in participating countries between April - August 2016
- Solely analytical food composition data to be collected
- Minimum 100 items (food lines) from each country
- Data sources (references) documented in Bibliography worksheet
- Scanned original references of the collected datasets delivered in electronic format to coordinator
- Data had to be expressed in a specified format of FAO/INFOODS Compilation Tool (CT)

Requirements for the analytical data to be collected

Only analytical food composition data generated by analytical laboratories, universities, control state authorities and journal articles.

The data from food labels or from unknown origin/author are not acceptable.

The data cannot be compiled from already published food composition tables or datasets.

Preference is for up to date food composition data, analyzed by accredited methods.

It was recommended and requested that food composition data are collected for local foods.

Data on foods produced by or frequently consumed in the participating country were preferred.

FCD on foods that are raw materials, processed foods, industrial commercialized food products or traditional dishes were accepted.

Foods with full nutritional profile (protein, amino acids, fat, fatty acids, carbohydrates, starch sugars, dietary fibre, water, alcohol, ash, minerals and vitamins) were preferred.

FAO/INFOODS Compilation Tool

worksheets

Copyright

CODES provide

Archival database per_100g EP

Archival database per_100g DM

Archival Amino Acids (mg_ 100gEP)

Archival Fatty Acids as % FA

Archival Fatty Acids (g_100gEP)

Sampling sheet

Bibliography sheet

Calculation sheet

Components-archival

Archival database

Archival database provides information about food composition expressed per 100 g of edible portion on fresh weight basis

Archival database contains information about:

- food group
- food code
- food name in English and national language
- scientific name if relevant
- food composition data described by using INFOODS Tagnames for common identification of components
- link to bibliography source via source/reference code
- may contain links to other worksheets of the Compilation Tool via codes: sampling code links to Sampling sheet, code “A” links to Archival Amino acids sheet and code “F” links to Archival Fatty acids sheets.

Example of Archival database per 100 g EP and links between codes and sheets of the Compilation Tool

Food group	Food code	Country /region	Foodname in English	Foodname in own language	*Scientific name*	Description of food	Processing of food	Sampling Code	n	Comments on analytical	Comments on value reca	Source/ biblioid	Compiler ID	match 1 = ex	fdnumber of so	food name of	Amino acid or fatty acid data?	WATER(g)		DM(g)		XN		NT(g)	
See 'codes' tab.	2 options (AB) A:	What country did the	Please include all descriptors		*Control with: http://ww*	Additional description to identify	r: fresh raw	Please enter the sampling	number of indep	If you assig	Any assu mpti	Include all sources	Please include your	For ref	Where	Where	Is there amino acid or	Water		Dry matter		conversion fact		Nitrogen, to	
																		Mean	±SD or	Mean	±SD or	Mean	±SD or	Mean	±SD
07	MD07035	Republic o	Pork meat, mu	Carne de por	*Suidae, mus*	physico-chem	r	MDS57				MD0009	lc					71,31							
07	MD07033	Republic o	Pork meat, mu	Carne de por	*Suidae, mus*	physico-chem	r	MDS55				MD0009	lc					76,41							
07	MD07034	Republic o	Pork meat, mu	Carne de por	*Suidae, mus*	physico-chem	r	MDS56				MD0009	lc					73,26							
07	BY07006	Belarus, M	Pork meat, ne	Полуфабрикат натуральный свиной, о			r	BYS33				BY016	EF									6,25			
07	HR07010	Croatia	Pork meat, ne	Dimljena vratina		Smoked, cure	o	HRS26	1			HR0022	ds									6,25			
07	HR07009	Croatia	Prosciutto, Da	Dalmatinski pršut		Smoked, dural	o	HRS25	1			HR0021	ds									6,25			
07	HR07025	Croatia	Prosciutto, Da	Dalmatinski pršut		Smoked, cure	o	HRS76	3			HR0067	ds				F	34,5	0,72						
07	MD07001	Republic o	Rabbit meat, (	Carne de iepu	*Oryctolagus*	Rabbit meat, s	r	MDS23	4			MD0008	lc					76,8	0,2			6,25			
07	MD07002	Republic o	Rabbit meat, (	Carne de iepu	*Oryctolagus*	Rabbit meat, s	r	MDS24	4			MD0008	lc					75,58	0,4			6,25			
07	MD07003		Rabbit meat, (	Carne de iepu	*Oryctolagus*	Rabbit meat, s	r	MDS25	4			MD0008	lc					68,24	1,77			6,25			
07	4115003-(	Slovakia	Rabbit meat, f	Mäso králičie		M. longissimu	r	SKS62	3		Amino	P000424	lb				A	75,97	0,15						
07	RU07005	Russia/ Ya	Reindeer, bloo	Оленина, кро	*Rangifer tarandus*		o	RUS201-RUS	1		Value	RU0004	mm				F					6,25			
07	RU07003	Russia/ Ya	Reindeer, kidn	Оленина,поч	*Rangifer tarandus*		o	RUS191-RUS	1			RU0004	mm				F					6,25			
07	RU07002	Russia/ Ya	Reindeer, liver	Оленина, пе	*Rangifer tarandus*		o	RUS186-RUS	1	Vitamin C w		RU0004	mm				F					6,25			
07	RU07001	Russia/ Ya	Reindeer, neck	Оленина, ше	*Rangifer tarandus*		o	RUS181-RUS	1			RU0004	mm				F					6,25			
07	RU07004	Russia/ Ya	Reindeer, ribs,	Оленина, мя	*Rangifer tar*	Ribs meat was	o	RUS196-RUS	1			RU0004	mm				F					6,25			
07	HR07033	Croatia	Ribs, smoked	Dimljena rebra		Smoked	o	HRS101	1			HR0065	ds					40,92	2,34						
07	HR07026	Croatia	Salami, homen	Domaća salama		Smoked	o	HRS78				HR0065	ds					27,68	2,50						
07	4162009-(	Slovakia	Salami, Maloka	Saláma, Malokarpatská		Fermented me	o	SKS11	3			P000207	ag					35,2		64,8	0,65				
07	4162009-(	Slovakia	Salami, Maloka	Saláma, Malokarpatská		Fermented me	o	SKS12	3			P000207	ag					38,6		61,4	0,53				
07	4163001-(	Slovakia	Salami, Nitran	Saláma, Nitran		whole stick	o	SKS43				P000414	ag				A	35,06	0,55			6,25			
07	4163001-(	Slovakia	Salami, Nitran,	Saláma, Nitran, krájaná		slices packed	o	SKS44				P000414	ag				A	31,33	0,91			6,25			
07	KZ07037	Kazakhstar	Salami, Vienne	Салями по-венски, Мясс		additional info	o	KZS120		Protein-Kjel		KZ0002	gb					50							
07	KZ07034	Kazakhstar	Sausage, beef	Колбаса, говяжья, полу		producer: Ast	o	KZS117		Protein-Kjel		KZ0002	gb					59,4							
07	KZ07024	Kazakhstar	Sausage, boile	Колбаса, вареная, Астан		additional info	o	KZS107		Protein-Kjel		KZ0002	gb					61,3							
07	KZ07029	Kazakhstar	Sausage, boile	Колбаса вареная, Докто		additional info	o	KZS112		Protein-Kjel		KZ0002	gb					63,6							
07	KZ07032	Kazakhstar	Sausage, Bolo	Колбаса, Болоньская, Ра		additional info	o	KZS115		Protein-Kjel		KZ0002	gb					38,6							
07	HR07014	Croatia	Sausage, Carr	Kranjska kobasica		Semi-durable	o	HRS30	1			HR0026	ds									6,25			

... | CODES | archival database_per100gEP | archival database_per 100gDM | archival, AminoAcid(mg_100gEP) | archival, Fatty Acids as % FA) | archival, FattyAcids (g_100gEP) | Sampling sheet | bibliography

Component identification

- Compilation Tool uses **INFOODS Tagnames**
- INFOODS Tagnames available at: http://www.fao.org/infoods/infoods/standards-guidelines/food-component-identifiers-tagnames/en/
- **Each Tagname has preferred unit**, e.g. g, mg, µg **and analytical method** for those components of which amount significantly depends on analytical method and instrument used
- **Recalculations of values to get required expression** per 100g of edible portion and measure unit as defined in a Tagname (e.g. recalculation of nutrients in preferred unit format (g, mg, µg)
- FAO/INFOODS Guidelines for Converting Units, Denominators and Expressions Version 1.0 (2012) available at: http://www.fao.org/3/a-ap809e.pdf
- FAO/INFOODS Density Database - Version (2012) available at: http://www.fao.org/docrep/017/ap815e/ap815e.pdf

Archival database per 100 g EP

Food group	Food code	Country/region	Foodname in English	Foodname in own language	*Scientific name*	Description of food	Processing of food	Sampling Code	n	Comments on analytical methods	Comments on value recacluations	Source/biblioid	Compiler ID
See 'codes' tab.	2 options (AB) A: Country	What country did the sample	Please include all descriptors		*Control with: http://ww*	Additional description to identify	r: fresh raw food, c:	Please enter the sampling	number of	If you assigned any component a tagname with a dash	Any assumptions (e.g.assume	Include all sources in the	Please include your
07	HR07021	Croatia	Chicken breast (m. pectoralis), without skin, raw	Meso pilića kokoši Hrvatica, prsa, bez kože		Organic farming, fresh raw meat	r	HRS72	18			HR0066	ds
07	HR07022	Croatia	Chicken breast (m. pectoralis), without skin, raw	Meso pilića kokoši Hrvatica, prsa, bez kože		Conventional farming, fresh raw meat	r	HRS73	18			HR0066	ds
07	BG07003	Bulgaria	Chicken fillet, roasted	Пилешко филе, печено		Fillet, low fat content	o	BGS79	2			BG0040	dg
07	BG07004	Bulgaria	Chicken fillet, roasted	Пилешко филе, печено		Fillet, low fat content	o	BGS80	3			BG0035	dg
07	KZ07012	Kazakhstan	Chicken fillets, raw, Alel	Куриный филе, Алель			r	KZS95		Protein-Kjeldahl method State standards 25011-81, Fat- Soxhlet method- State standards 23042-86, Moisture-		KZ0002	gb

Archival database per 100 g EP

Food g	Food code	Country	Foodname in English	PROTCNT(g)		PROPLA(g)		PROANI(g)		PROT-(g)	
See 'codes' tab.	2 options (AB) A: Country	What country did the	Please include all descriptors	protein, total; c		protein from pla		protein from an		protein, tot. unk	
				Mean	±SD or	Mean	±SD or	Mean	±SD or	Mean	±SD or
07	HR07021	Croatia	Chicken breast (m. pectoralis), without skin, raw	24,32	0,39						
07	HR07022	Croatia	Chicken breast (m. pectoralis), without skin, raw	23,42	0,69						
07	BG07003	Bulgaria	Chicken fillet, roasted	14,96	0,10						
07	BG07004	Bulgaria	Chicken fillet, roasted								
07	KZ07012	Kazakhsta	Chicken fillets, raw, Alel	17,5							
07	4121012-01	Slovakia	Chicken muscles, breast and leg, without bone and skin, ra							23,21	0,91
07	KZ07021	Kazakhsta	Chicken, breast, raw, Alatau-kus, LLP	19,3							
07	4121004-01	Slovakia	Chicken, breast, without bone and skin, raw							23,83	0,49
07	KZ07017	Kazakhsta	Chicken, broiler, raw, Akpar, Astana - Agroprodukty, LLP	18,9							
07	KZ07019	Kazakhsta	Chicken, broiler, raw, Alatau-kus, LLP	18,7							
07	KZ07018	Kazakhsta	Chicken, broiler, raw, Alel - Agro, JSC	18,5							
07	KZ07016	Kazakhsta	Chicken, broiler, raw, Ardager, Astana - Agroprodukty, LLP	16,6							
07	4121007-01	Slovakia	Chicken, leg, without bone and skin, raw							22,73	0,92
07	KZ07015	Kazakhsta	Chicken, meat, tights/legs (drumsticks), raw, Alel	18,1							
07	KZ07014	Kazakhsta	Chicken, meat, tights/legs (drumsticks), raw, Astana - Agro	18,4							
07	BY07003	Belarus, I	Chicken, mechanically deboned meat, frozen	17,4							
07	BY07004	Belarus, I	Chicken, mechanically deboned meat, frozen	14,5							
07	BY07005	Belarus, I	Chicken, mechanically deboned meat, frozen	15,7							
07	KZ07013	Kazakhsta	Chicken, raw, Alel	19,1							
07	KZ07022	Kazakhst	Chicken, thigh, raw, Alatau-kus, LLP	18,9							

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Archival amino acids per 100 g EP

Food grou	Internal code	Country	Foodname in English	ALA (mg)	ARG (mg)	ASN (mg)	ASP (mg)	CYS (mg)	CYSTE (mg)	GLN (mg)	GLU (mg)	GLY (mg)	HIS (mg)
See 'codes' tab.		What country did the sample come from?	Please include all descriptors	alanine	arginine	asparagine	aspartic acid	cystine	cysteine	glutamine	glutamic acid	glycine	histidine
05	UA05005	Ukraine	Apples, raw		10			5			42		
07	BY07001	Belarus, Mi	Beef, meat, without bones, fortified with folic acid, raw	1115	1217		1758		269		3161	958	685
07	BY07002	Belarus, Mi	Beef, meat, without bones, fortified with folic acid, raw	1176	1284		1946		273		3445	1010	667
01	UA01002	Ukraine	Bread, rye-wheat, Borodynskyj	100	640		190		240		650	96	
04	UA04006	Ukraine	Cabbage, white, raw		85			20			275		
04	UA04003	Ukraine	Courgette, raw		58			10			341		
04	UA04002	Ukraine	Cucumbers, raw		45			7			140		
08	BY08002	Belarus, So	Egg, quail, whole, raw	713	737		1056		264		1504	397	289
06	4421008-01	Slovakia	Flaxseeds, brown, dried, raw	926	2244		1318	299			4217	1244	477
06	4421008-02	Slovakia	Flaxseeds, gold, dried, raw	842	1915		1045	259			3663	1110	444
01	UA01007	Ukraine	Flour, spelt, wholemeal	614	987		1026		389	3545		700	537
01	UA01006	Ukraine	Flour, wheat, wholemeal	464	709		779		261	3060		634	378
06	TR060002	Turkey-East	Hazelnut, kernels, variety Çakıldak, dried, raw	724	1864		1462				2689	513	521
06	TR060001	Turkey-East	Hazelnut, kernels, variety Cavcava, dried, raw	662	1763		[489]				2196	571	385
06	TR060003	Turkey-East	Hazelnut, kernels, variety Foşa, dried, raw	762	2306		1648				3147	658	393
06	TR060004	Turkey-East	Hazelnut, kernels, variety İncekara, dried, raw	631	2265		1678				3215	648	512
06	TR060006	Turkey-East	Hazelnut, kernels, variety Kann, dried, raw	718	2178		1578				2941	715	367
06	TR060007	Turkey-East	Hazelnut, kernels, variety Karafındık, dried, raw	748	1979		1697				2715	516	413
06	TR060008	Turkey-East	Hazelnut, kernels, variety Kargalak, dried, raw	731	2184		1697				2697	686	389
06	TR060009	Turkey-East	Hazelnut, kernels, variety Kus, dried, raw	741	1187		[615]				2815	625	392

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Archival fatty acids as % FA

Food group	Internal code	Country	Foodname in English	Check: sum of fatty acids	F4D0 (% total FA)	F5D0(% total FA)	F6D0 (% total FA)	F7D0 (% total FA)	F8D0 (% total FA)	F9D0 (% total FA)	F10D0 (% total FA)	F11D0 (% total FA)	F12D0 (% total FA)	F13D0 (% total FA)
See 'codes' tab.		What country did the sample come from?	Please include all descriptors		C 4:0	C 5:0	C 6:0	C 7:0	C 8:0	C 9:0	C 10:0	C 11:0	C 12:0	C 13:0
11	KZ11005	Kazakhstan	Butter, 77,5 % fat, Tulkubas	100			0,736		1,036		2,940		3,572	
11	KZ11007	Kazakhstan	Butter, 79 % fat, Talgar	100	0,673		0,759		0,487		1,112		1,419	
11	KZ11004	Kazakhstan	Butter, 82 % fat, Uzunagash	100			0,625		0,751		1,882		3,549	
01	RU01004	Russia/ Mos	Cereal bar, apple, with vitamins, brand EGO	100									0,08	
01	RU01005	Russia/ Mos	Cereal bar, green tea, with vitamins, brand EGO	100					0,16		0,14		0,22	
13	RU13026	Croatia	Cereal porridge, for infants, mixture of oat-whea	100	0,11		0,07		0,08		0,13		0,39	
10	KZ10003	Kazakhstan	Cream, dairy, 10 % fat, Food Master Aseptic, LLP	100	4,143		2,655		1,538		3,092		3,318	
10	KZ10031	Kazakhstan	Curd, 10 % fat, Merke	100	0,770		1,688		1,523		3,622		4,459	
10	KZ10030	Kazakhstan	Curd, 4 % fat, Adal, LLP, JSC AIC	100	2,803		2,122		1,241		2,551		2,868	
10	KZ10033	Kazakhstan	Curd, 5 % fat, Talgar	100			4,138				6,228		3,753	
10	KZ10032	Kazakhstan	Curd, 8,5 % fat, Uzunagash	100	0,278		0,595		0,696		2,431		3,509	
06	4421008-	Slovakia	Flaxseeds, brown, dried, raw	100									0,03	
06	4421008-	Slovakia	Flaxseeds, gold, dried, raw	100									0,03	
01	UA01007	Ukraine	Flour, spelt, wholemeal	100							0,045		0,317	
01	UA01006	Ukraine	Flour, wheat, wholemeal	100										
06	TR060017	Turkey -Aeg	Halva with sesame, paste, Tahini halva	91										
06	TR060002	Turkey-East	Hazelnut, kernels, variety Cakildak, dried, raw	100										

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Sampling sheet

sampleid	fooditemid	sampplan	sampdate	sampdesc	sampcol	sampfdnr	sampwgh	sampann	sampanre	samphan	samparri	sam
Sample code created by compiler. Each code indicates a different sample code for a given food. If no sample	**Original food code** or **name** in source. One original food can have several samples.	Brief description of **sampling method**, if available. Indicate if nationally representative, proportional etc.	**Date of sample collection** of the food, if available. The format of this field must be one of YYYY-MM-DD, YYYY-MM, YYYY or YYYY-YYYY (for year ranges,	Description of the food sampled, e.g. agronomic conditions - growing conditions, farming practices.	**Place(s)** where the food sample(s) was obtained, purchased, harvested, etc.	**Number of food samples** collected to construct composite sample.	**Weights** of food samples as collected in gram.	**Number of independent analytical samples.**	**Number of analytical replicates per sample.**	Food specific **handling of sample before** arrival at laboratory, e.g. sample transport.	Sample **handling when the sample arrives** at the laboratory.	**Stor cond** the l befo of th analy proc temp
BYS60	Spread from cream and vegetable		2016-05-30		Belarus, M	1	1620					
BYS61	Spread from cream and vegetable		2016-05-30		Belarus, M	1	1620					
BYS62	Flour, soy		2011-10-13		Belarus, M	1	1000					
HRS1	Slavonska	The sample was	2015-11-20	Slavonian	Croatia,	1		1	1			
HRS2	Tekući jogurt	The sample was	2016-01-18	Yoghurt from	Croatia	1	1000	1	1			Store
HRS3	Voćni jogurt od	The sample was	2015-07-15	Made from cow	Croatia	1		1	1			
HRS4	Bučino ulje	The sample was	2016-01-20		Croatia	1	459,75	1	1			
HRS5	Komarča (orada)	Fish are caught	2012	Cultivated	Croatia	15		30	2	Placed in	Removed	
HRS6	Komarča (orada)	Fish are caught	2012	Wild	Croatia,	15		30	2	Placed in	Removed	
HRS7	Lubin	Fish are caught	2012	Cultivated	Croatia	15		30	2	Placed in	Removed	
HRS8	Lubin	Fish are caught	2012	Wild	Croatia,	15		30	2	Placed in	Removed	
HRS9	Graham kruh s	The sample was	2015-07-22	Integral wheat b	Croatia	1	700	1	1			
HRS10	Kruščić sa	The sample was	2015-10-23	Bread with 7,3%	Croatia	1	150	1	1			
HRS11	Kukuruzno	The sample was	2015-09-10	Frozen	Croatia	1		1	1			
HRS12	Kukuruz šećerac	The sample was	2015-06-12	Canned, sterilize	Croatia	5	240	5	1			

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Bibliography sheet

biblioid The	Reference in English	Reference in own langauge
This must be unique (it is an abbreviati	**Scientific articles:** Koreňovská, M. - Suhaj, M.: Chemometric study of the contents of minerals and risk elements in some European hard cheeses. Journal of Food and Nutrition Research, 47, 2008, No. 2, pp. 68 - 76. **Report from laboratory**: MIKROLAB, s.r.o. akreditované skúšobné	
BY022	Scientific Practical Centre for Hygiene, accredited laboratory, Academicheskaya 8, Minsk, Belarus, Report on analysis no 0115/912/10-04,	Научно-практический центр гигиены, аккредитованная лаборатория, Академическая 8, Минск, Беларусь. Протокол исследования сортов
BY023	Scientific report "TO RESEARCH TOXICOLOGICAL PROPERTIES OF THE MICROFERTILIZER "NANOPLANT" AND NUTRITION VALUE OF PRODUCTS GROWING UP WITH ITS USE, 30/12/2014, Scientific Practical Centre for	Отчет о научной работе "ИССЛЕДОВАТЬ ТОКСИКОЛОГИЧЕСКИЕ СВОЙСТВА МИКРОУДОБРЕНИЯ «НАНОПЛАНТ» И ПОКАЗАТЕЛИ ПИЩЕВОЙ ЦЕННОСТИ ПРОДУКЦИИ, ВЫРАЩЕННОЙ С ЕГО
BY024	Scientific Practical Centre for Hygiene, accredited laboratory, Academicheskaya 8, Minsk, Belarus, Report on analysis no 0115/5380/10-	Научно-практический центр гигиены, аккредитованная лаборатория, Академическая 8, Минск, Беларусь. Протокол исследования спредов
BY025	Scientific Practical Centre for Hygiene, accredited laboratory, Academicheskaya 8, Minsk, Belarus, Report on analysis no 0115/102340/10-	Научно-практический центр гигиены, аккредитованная лаборатория, Академическая 8, Минск, Беларусь. Протокол исследования verb
HR0001	Food Control Center (CKN) Jagićeva 31, 10000 Zagreb, Croatia; Report on analysis No 6819/15 product Sausage , uncooked, smoked, Slavonian, 2015	Centar za kontrolu namirnica pri Prehrambeno-biotehnološkom fakultetu (CKN) Jagićeva 31, 10000 Zagreb, Hrvatska; Analitičko izvješće broj
HR0002	Food Control Center (CKN) Jagićeva 31, 10000 Zagreb, Croatia; Report on analysis No 0176/16 product Yoghurt, drink, cow, 2,8%, 2016	Centar za kontrolu namirnica pri Prehrambeno-biotehnološkom fakultetu (CKN) Jagićeva 31, 10000 Zagreb, Hrvatska; Analitičko izvješće broj
HR0003	Food Control Center (CKN) Jagićeva 31, 10000 Zagreb, Croatia; Report on analysis No 4356/15 product Yoghurt, cow, with apricot, 2015	Centar za kontrolu namirnica pri Prehrambeno-biotehnološkom fakultetu (CKN) Jagićeva 31, 10000 Zagreb, Hrvatska; Analitičko izvješće broj
HR0004	Food Control Center (CKN) Jagićeva 31, 10000 Zagreb, Croatia; Report on analysis No 0264/16 product Oil, pumpkin seed, 2016	Centar za kontrolu namirnica pri Prehrambeno-biotehnološkom fakultetu (CKN) Jagićeva 31, 10000 Zagreb, Hrvatska; Analitičko izvješće broj
HR0005	Vulić, A. - Bogdanović, T. - Pleadin, J. - Zrnčić, S. - Oraić, D.: Comparison of chemical composition and content of heavy metals in meat of sea bass (Dicentrarchus labrax) and gilt-head sea bream (Sparus aurata). Journal	Vulić, A. - Bogdanović, T. - Pleadin, J. - Zrnčić, S. - Oraić, D.: Usporedba kemijskog sastava i količine teških metala u mesu lubina (*Dicentrarchus labrax*) i komarče (*Sparus aurata*) iz uzgoja i slobodnog ulova. Časopis
HR0006	Food Control Center (CKN) Jagićeva 31, 10000 Zagreb, Croatia; Report on analysis No 4483/15 product Bread, Graham, less salt, 2015	Centar za kontrolu namirnica pri Prehrambeno-biotehnološkom fakultetu (CKN) Jagićeva 31, 10000 Zagreb, Hrvatska; Analitičko izvješće broj
HR0007	Food Control Center (CKN) Jagićeva 31, 10000 Zagreb, Croatia; Report on analysis No 6292/15 product Bread, wheat, with oilseeds, 2015	Centar za kontrolu namirnica pri Prehrambeno-biotehnološkom fakultetu (CKN) Jagićeva 31, 10000 Zagreb, Hrvatska; Analitičko izvješće broj

Data checking

The data was fully checked against the original references.

Data checking was performed by a core team of the Food Research Institute and FAO.

FAO/INFOODS Guidelines for Checking Food Composition Data prior to Publication of a User Table/Database – Version 1.0 (2012) available at: http://www.fao.org/docrep/017/ap810e/ap810e.pdf

Individual approach was needed during data checking.

Reviewers contacted compilers to clarify information regarding food name, composition, used analytical methods, etc.

Communication between compilers and reviewers was via e-mail.

Preparing final dataset

- Reclassification of some foods to different food groups.
- Harmonization of English food name structure and unification of all food names in common format.
- Checking of food name with processing code and water content in food.
- Sum of proximate, where possible (foods not in range 95-105 were deleted from the dataset).
- Checking/comparison of food composition data with foreign FCD.
- Comparison of values for foods at food group level.

Preparing final dataset

- Checking of suspicious values between same foods in the dataset and/or between foreign FCD e.g. USDA, Danish FCDB or Slovak FCDB.
- Comparison of fat content in food name and given value of analysed fat.
- Sum of individual minerals and ash value.
- Sum of fatty acids and total fat content.
- Checking energy value if it is identical with similar foods.
- Finding explanation for outliers (e.g. fortification).

Submission of final dataset to FAO

Overview of the used sources of food composition data (references)

Reference type /Country	BY	BG	HR	HU	KZ	MD	RU	SK	TR	UA	Total
Report from in-house laboratory	✓	✓	✓				✓	✓	✓		
Report from laboratory			✓	✓				✓			
Scientific article		✓				✓		✓	✓	✓	
Research work					✓					✓	
Thesis			✓			✓					
Total	25	81	71	100	3	13	38	32	39	13	415

Overview of number of foods per food groups collected by countries

No. of foods per food group and country	BY	BG	HR	HU	KZ	MD	RU	SK	TR	UA	Total
Cereals and their products	11	51	7	3		6	6	6	2	7	**99**
Starchy roots, tubers and their products	21	1		2							**24**
Legumes and their products	1		2	1		9		15	2		**30**
Vegetables and their products	72	6	9	53					40	5	**185**
Fruits and their products	4	5	3	25			14		48	1	**100**
Nuts, seeds and their products	5	13	2			4		27	18		**69**
Meat, poultry and their products	7	14	33		37	35	5	9	2		**142**
Eggs and their products	2										**2**
Fish and their products	3		6				7		5	5	**26**
Milk and their products	13	18	22		70	13	39	15	4	88	**282**
Fat and oils	2		3		11	16	19	6	1	4	**62**
Beverages	5	13	1			43	2	8	2	4	**78**
Miscellaneous		19	14	16		3	18	14	25		**109**
Total	**146**	**140**	**102**	**100**	**118**	**129**	**110**	**100**	**149**	**114**	**1208**

Number of collected foods in CT depending on food processing

Processing of food	Code	No. of collected foods in the CT	No. of collected foods in the CT (%)
raw foods	r	375	31 %
cooked foods	c	7	0,6 %
dried foods	d	48	4 %
other	o	775	64 %
unknown	u	3	0,3 %
Total		1208	100 %

Strengths of new analytical FC dataset

Solely analytical food composition data.

Traceability of food composition data (Bibliography database).

Good overview of food composition data collected from 10 different countries.

Possible to compare composition of the same foods within country or within countries, e.g. from milk, meat, vegetable group.

Food composition of different varieties and breeds.

First FCD from developed countries.

Weaknesses of new analytical FC dataset

Limited number of foods provided in the dataset and limited number of foods in some food groups (only milk and meat group)

Collection of foods with limited amount of components (only 3 components)

Analytical protocols sometimes missed information about water content of food or methods how carbohydrate or energy value was calculated

Analytical laboratories were not allowed to provide all information about analysed products, such as name of producer or brand name

Sometimes missing information about used analytical method

Dataset is archival database and does not contain full nutritional profiles of foods

Conclusions

All countries involved in the project get training, knowledge and gained some experience in collection of analytical food composition data in the archival database of the FAO/INFOODS Compilation Tool.

Good overview of FCD was collected from different countries from Europe and Central Asia.

Collected FCD within this project could be used as basis for building national FCD in developed countries and/or updating of existing national FCDB in the developed countries.

Contribution to capacity building activities especially in developed countries.

It is challenge for countries to find further resources from national authorities to be able to continue in ongoing activities.

Thanks for cooperation

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Thank you for your attention

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