

Supplements

Supplementary Table 1. FODMAP content of food items eaten in the largest quantity, presented as mean intake of the estimated four-day food records (n=117). Added FODMAP values for each FODMAP given in g/day with reference in parenthesis. The ten food items contributing the most to the intake of each FODMAP are listed, a few food items containing several types of FODMAPs are listed more than once.

Food items	Mean intake of food item g/day	Fructose (g/100g)	Glucose (g/100 g)	Fructose in excess of glucose (g/100 g)	Fructan (g/100g)	Lactose (g/100g)	GOS (g/100 g)	Polyol (g/100 g)	Total FODMAP content (g/100 g)	Analytical method	Comments
Fructose											
Orange juice	94	2.8 (1)	3.4 (1)	0	0	0	0	0	0	GC	
Potato	38	0.4 (2)	0.4 (2)	0	0	0	0	0	0	GC	
Banana	35	2.6 (3, 4)	4.4 (4)	0	0.5 (5)	0	0	0	0.5	Enzymes, HPLC with ELSD, ion Chromatographic	Mean value ripe and firm
Cola drinks	33	3.4 (6)	3.5 (6)	0	0	0	0	0	0		McCance & Widdowson's The composition of foods. 1994
Tomato	27	1.4 (2)	1.4 (2)	0	0.09 (4)	0	0	0	0.09	GC, HPLC with ELSD	Fructose, mean value of cherry tomato, tomato cultivated in mars, tomatoes cultivated in august. Fructan, mean of

											common and Roma tomatoes.
Apple	25	4.56 (3, 4)	1.24 (3, 4)	3.32	0.01 (5)	0	0	0.77 (4)	4.10	Enzymatic analyses and HPLC and ELSD	
Cordial fruit drink red	20	0.8 (6)	0.7 (6)	0.1	0	0	0	0	0.1		
Cucumber	18	0.8 (2)	2.33	0	0	0	0	0	0	GC	
Soft drink non-carbonized	17	0.4 (6)	0.3 (6)	0.1	0	0	0	0	0.1		Fructose value counted by raw material and recipe by THL
Whole grain ryebread 7 % fiber (Kornelle)	15	1.22 (2)	0.94 (2)	0.28	1 (7)	0	0.33 (8)	0.16 (8)	1.87	GC, Enzymatic, HPLC	Fructan, mean of bread types M to T in ref. 7
Fructan											
Banana	35	2.6 (3, 4)	4.4 (4)	0	0.5 (5)	0	0	0	0.5	Enzymes, HPLC with ELSD, ion chromatographic	Mean value ripe and firm
Wheat pasta	29	0.01 (2)	0	0	0.34 (8)	0	0	0	0.34	Enzymatic	
Tomato	27	1.4 (2)	1.4 (2)	0	0.09 (4)	0	0	0	0.09	GC, HPLC with ELSD	Mean value of common and Roma tomatoes.
Whole grain rye bread 7 % fiber (Kornelle)	15	1.22 (2)	0.94 (2)	0.28	1 (7)	0	0.33 (8)	0.16 (8)	1.87	Enzymatic, HPLC	Fructan, mean of bread types M to T in ref. 7
Orange	14	2.29 (3, 4)	3.28	0	0.03 (5)	0	0	0	0.03	Ion Chromatography	

Onion	11	1 (2)	1.95 (2)	0	6.3 (10)	0	0	0	6.3	GC, enzymatic	Onion bulb. that is most common used in Sweden
Pizza Capricciosa	8	1.03	0.93	0.1	0.33	0	0	0.29	0.72		Calculated by recipe from National Swedish Food Agency
Lasagna	8	0.05	0.1	0	0.28	2.1	0	0	2.38		Calculated by recipe from National Swedish Food Agency
Whole grain rye bread 9 % (Rallarhalvor)	8	1.22 (2)	0.94 (2)	0.28	1.14 (9)	0	0.33 (8)	0.16 (8)	1.91	GC, enzymatic, HPLC with ELSD	
Clementine	7	2.29 (3, 4)	3.28	0	0.03 (5)	0	0	0	0.03	Ion Chromatography	Values for orange
Lactose											
Medium fat milk 1.5 %	90	0	0	0	0	4.9 (10)	0	0	4.9	Chromatographic	
Sour milk fat 3%	34	0	0	0	0	3.8 (10)	0	0	3.8	Chromatographic	
Milk fat 3% Skim milk fat 0.5%	23	0	0	0	0	4.9 (10)	0	0	4.9	Chromatographic	
Enriched with vitamin A and D.	17	0	0	0	0	5 (10)	0	0	5	Chromatographic	
Plain yoghurt fat 3%	15	0	0	0	0	2.7 (10)	0	0	2.7	Chromatographic	

Fruit yoghurt 2 %	11	1.1 (2)	1.2 (2)	0	0	4.1 (10)	0	0	4.1	GC, Chromatographic	
Medium fat sour milk 1.5%	11	0	0	0	0	3.8 (10)	0	0	3.8	Chromatographic	
Low fat fruit yoghurt 0.5 %	9	1.1 (2)	1.2 (2)	0	0	2.2 (10)	0	0	2.2	GC, Chromatographic	
Lasagna	8	0.05	0.1	0	0.28	2.1	0	0	2.38		Calculated by recipe from SNFA
Mashed potatoes homemade	7	0.13	0.18	0	0	1.14	0	0	1.14		Calculated by recipe from SFNA
GOS											
Whole grain rye bread 7 % fiber (Kornelle)	15	1.22 (2)	0.94 (2)	0.28	1.14 (9)	0	0.33 (8)	0.16 (8)	1.91	GC, Enzymatic and HPLC with ELSD	
Onions	11	1.38 (2)	1.95 (2)	0	6.3 (3)	0	0	0	6.3	GC, enzymatic	
Whole grain rye bread 9% fiber (Rallarhalvor)	5	1.22 (2)	0.94 (2)	0.28	1.14 (9)	0	0.33 (8)	0.16 (8)	1.91	GC, enzymatic and HPLC with ELSD	
Pancakes homemade	5	0	0	0	0.51	2.4	0	0	2.91		Calculated by recipe from SNFA
White bread fiber 5 %	5	0.27 (2)	0	0.27	1.02 (11)	0	0.2 (8)	0	1.49	GC, enzymatic HPLC with ELSD	
Whole grain rye bread 6% fiber (Lingongrova,	4	4.44 (2)	3.42 (2)	1.02	1 (7)	0	0.33 (8)	0.16 (8)	2.61	Enzymatic and HPLC	Fructan, mean of bread types M to T in ref. 7

Skördeglädje, Gott gräddat)												
Hamburger bread	4	0.27 (2)	0	0.27	1.02 (11)	0	0.2 (8)	0	1.49			
Whole meal white bread										GC, enzymatic and HPLC with ELSD	Mean of bread whole meal sliced, pitta whole meal ref. 11 and wheat whole meal and wheat whole grain from ref. 8	
baguette sourdough 4.4% fiber. Bake off.	4	0.27 (2)	0	0.27	0.79 (8, 11)	0	0.57 (8)	0	1.63			
Wheat whole meal bread 6% fiber	4	0.27 (2)	0	0.27	0.79 (8, 11)	0	0.57 (8)	0	1.63	GC, enzymatic and HPLC with ELSD	Mean of bread whole meal sliced, pitta whole meal ref. 11 and wheat whole meal and wheat whole grain from ref. 8	
Yellow split pea soup	4	0.04			0.73	0	0.73	0	0.73		Calculated by recipe from SNFA	
Polyols												
Apple	25	4.56 (3, 4))	1.24 (4)	3.32	0.01 (5)	0	0	0.77 (4)	4.1	Enzymatic and HPLC with ELSD	Five types of apples, peeled and unpeeled	
Whole grain rye bread fiber 7 % (Kornelle)	15	1.22 (2)	0.94 (2)	0.28	1 (7)	0	0.33 (8)	0.16 (8)	1.87	Enzymatic and HPLC	Fructan, mean of bread types M to T in ref. 7	
Pear	10	6.36 (3, 4)	2.73 (4)	3.63	0	0	0	4.1 (4)	7.73	Enzymatic and HPLC with ELSD	Two types of pear, mean ripe and firm	

Pizza Capricciosa	8	1.03	0.93	0.1	0.33	0	0	0.29	0.72		Calculated by recipe from SNFA
Whole grain rye bread fiber 9 % (Rallarhalvor)	8	1.22 (2)	0.94 (2)	0.28	1.14 (9)	0	0.33 (8)	0.16 (8)	1.91	GC, enzymatic and HPLC with ELSD	
Bell peppers yellow, green, red	7	2.8 (4)	4.33 (4)	0	0	0	0	0.37 (4)	0.37	Enzymatic and HPLC with ELSD	
Avocado	6	0.15(4)	0.69 (4)	0	0	0	0	0.65 (4)	0.65	HPLC with ELSD	
Corn. canned without juice	5	0.18 (4)	0.79 (4)	0	0	0	0	0.45 (4)	0.45	HPLC with ELSD	
Whole grain rye bread fiber 6 % (Lingongrova)	4	4.44 (2)	3.42 (2)	1.02	1 (7)	0	0.33 (8)	0.16 (8)	2.61	GC, enzymatic and HPLC with ELSD	Fructan, mean of bread types M to T in ref. 7
Nectarines	4	0.62 (4)	1.49 (4)	0	0.59 (4)	0		1.01 (4)	1.6	HPLC with ELSD	

Galacto- oligosaccharides GOS

Gas-chromatography (GC)

National Institute for Health and Welfare in Finland (THL).

High performance Liquid Chromatography (HPLC)

Evaporative light scattering detection (ELSD)

Swedish National Food Agency (SNFA)

Supplementary Table 2. Lists present the 20 food items with the highest content of fructose in g per 100 g food item from the extended database.

Fructose in excess of glucose is 0 if glucose content is higher than the fructose content.

Food items	Fructose/100g food item	Glucose/100g food item	Excess fructose/100 g food item	Analytical method	Reference	Comment
Honey	38.5	32	6.5	Chromatographic analyze	(1)	
Raisins	29	29.5	0	Chromatographic analyze	(1)	
Figs dried	26.5	30	0	Chromatographic analyze	(1)	
Dates dried	21.6	27.2	0	Chromatographic analyze	(1)	
Wafers filled biscuits	21.1	22.2	0	HPLC with ELSD	(8)	
Biscuits Singoalla type	21.1	22.2	0	HPLC with ELSD	(8)	
Filled biscuits	21.1	22.2	0	HPLC with ELSD	(8)	
Cereals gluten free with fruit	16.8	19	0	HPLC with ELSD	(8)	
Preserve, orange	15.3	16.3	0	Chromatographic analyze	(1)	
Preserve, apricot, strawberry and blackberry	14.7	12.9	1.8		(6)	Value counted from similar food item, by THL.
Prunes dried	14.6	14.4	0.2	GC	(1)	
Dried fruit and dried papaya	13	13.8	0		(6)	Value counted from similar food item, by THL.

Apple purée (light in sugar)	12.7	9	3.7	Chromatography	(1)	
Apple purée	12.7	9	3.7	Chromatographic analyze	(1)	
Sundried tomatoes	12.6	10.3	2.3	GC	(2)	
Muesli whole grain including fruit/berries/nuts	12.6	16.1	0	HPLC with ELSD	(8)	
Lingon berry jam	11.5	11.6	0	Chromatographic analyze	(1)	
Deep fried onion	11	11.7	0		(6)	Transferred value from similar food item by THL.
Cereals whole grain, seeds and raisins	9.5	9.6	0	GC	(2)	
Fruit cocktail	9	7.4	1.6	Chromatographic analyze	(1)	

Gas-chromatography (GC)

High performance liquid chromatography (HPLC)

Evaporative light scattering detection (ELSD)

National Institute for Health and Welfare in Finland (THL)

Supplementary Table 3. Lists present the 20 food items with the highest content of fructan in g per 100 g food item from the extended database.

Food items	Fructan /100 g food item	Analytical method	Reference	Comment
Garlic	17.40	Enzymatic analysis	(3)	
Jerusalem artichoke puré and boiled	12.20	Enzymatic analysis	(3)	
Jerusalem artichoke	12.20	Enzymatic analysis	(3)	
Onion	6.30	Enzymatic analysis	(3)	Bulb
Filled biscuits, Wafers	4.61	Enzymatic analysis	(8)	
Onion powder	4.50	HPLC	(5)	Value for onion powder. Only fructo-oligosaccharides with DP2, DP3, DP4
Rye crisp bread (air-leavened), non-yeast	4.27	Enzymatic analysis	(9)	
Leek	3.80	Enzymatic analysis	(3)	Mean value leek whole and leek bulb
Wheat bran	3.70	Enzymatic analysis	(12)	
Whole meal rye and crushed rye	3.52	Enzymatic analysis	(9)	
Crisp Bread (yeast, sourdough)	3.20	Enzymatic analysis	(9)	
Müsli, fiber, Energy bars e.g. Start, Allbran, Special K	2.53	Enzymatic analysis	(8)	
Whole grain Cereals	2.35	Enzymatic analysis	(8)	
Semolina	2.25	Enzymatic analysis	(12)	
Wheat germ	2.25	Enzymatic analysis	(12)	
Broken Wheat	2.16	Enzymatic analysis	(12)	
Cereals Weetabix type	2.05	Enzymatic analysis	(8)	
Bulgur	2.00	Enzymatic analysis	(8)	Value for couscous
Grahams flour	1.72	Enzymatic analysis	(12)	
Whole meal rye bread	1.14	Enzymatic analysis	(9)	

High performance liquid chromatography (HPLC)
Degree of polymerization (DP)

Supplementary Table 4. Lists present the 20 food items with the highest content of lactose in g per 100 g food item from the extended database.

Food items	Lactose /100 g food item	Analytical method	Reference	Comment
Whey cheese 49 % fat	48	HPLC	(13)	
Whey cheese butter type 5% fat	49	HPLC	(13)	Original whey cheese
Chocolate white	10	Chromatographic analyze	(1)	
Milk chocolate with and without added sugar	10	Chromatographic analyze	(1)	
Hollandaise sauce	7.70		(6)	Counted by THL on raw material of the recipe
Milk chocolate with nuts	7.7		(6)	Counted by THL on raw material of the recipe
Chocolate cream	7.50	Chromatographic analyze	(1)	
Ice cream 8,10,12 % fat	6.10	Chromatographic analyze	(1)	
Dip	5.80		(6)	Counted by THL on raw material of the recipe.
Chocolate pudding, mousse	5.70		(6)	Counted by THL on raw material of the recipe
Chocolate pudding, mousse				
Ice loll (cream based)	5.20		(6)	Counted by THL on raw material of the recipe.
Skim milk < 0.1% fat	5	Chromatographic analyze	(10)	
Skim milk 0.5% fat	5	Chromatographic analyze	(10)	
Gratin, stew sauce	4.9		(6)	Counted by THL on raw material of the recipe
Rice pudding (milk based)	4.9		(6)	Counted by THL on raw material of the recipe
Milk 3 %	4.9	Chromatographic analyze	(10)	

Medium fat milk 1.5%	4.9	Chromatographic analyze	(10)	Calculated by recipe from Swedish National Food Agency
Chocolate milk drink (3 % fat)	4.9			
Vanilla sauce	4.6		(6)	Counted by THL on raw material of the recipe.

High performance liquid chromatography (HPLC)
National Institute for Health and Welfare in Finland (THL)

Supplementary Table 5. Lists present the 20 food items with the highest content of GOS in g per 100 g food item from the extended database.

Food item	GOS/ 100g food item	Analytical method	Reference	Comment
Green peas	1.88	HPLC with ELSD	(8)	
Brown beans	1.44	HPLC with ELSD	(8)	Value for kidney beans, same plant family
Kidney beans, red beans	1.44	HPLC with ELSD	(8)	
White beans	1.44	HPLC with ELSD	(8)	Value for kidney beans, same plant family
Cereals whole grain 4 types (All bran type)	1.32	HPLC with ELSD	(8)	
Soy flour	0.79	HPLC with ELSD	(8)	Value for soy bean
Soy bean	0.79	HPLC with ELSD	(8)	
Vegetarian soya beef	0.79	HPLC with ELSD	(8)	Calculated by recipe using value for soy been
Miso	0.79	HPLC with ELSD	(8)	Calculated by recipe using value for soy been
Pea soup	0.73	HPLC with ELSD	(8)	Calculated by recipe using recipe from Swedish National Food Agency
Vegetarian minced soy protein	0.67	HPLC with ELSD	(8)	Calculated by recipe using value for soy been
Crisp bread wheat and rye based	0.59	HPLC with ELSD	(8)	Value for whole grain bread, wheat based bread, added rye flour and kibbled grain
Sweet almond	0.58	HPLC with ELSD	(8)	Value for LSA mix
Sunflower seeds	0.58	HPLC with ELSD	(8)	Value for LSA mix
Linseed	0.58	HPLC with ELSD	(8)	Value for LSA mix
Whole meal wheat bread fiber 6%	0.57	HPLC with ELSD	(8)	
Whole meal wheat bread fiber 13%	0.57	HPLC with ELSD	(8)	
Lentils red boiled	0.46	HPLC with ELSD	(8)	

Lentils green boiled	0.46	HPLC with ELSD	(8)
White dried beans, boiled	0.42	HPLC with ELSD	(8)

High performance liquid chromatography (HPLC)

Evaporative light scattering detection (ELSD)

Linseed, almond, sunflower mix (LSA)

Supplementary Table 6. Lists present the 20 food items with the highest content of polyols in g per 100 g food item from the extended database.

Food items	Polyols/100 g food item	Analytical method	Reference	Comment
Cough drops sugar free	97		(14)	Isomalt. Calculated by recipe
Chewing gum	41.90	HPLC with ELSD	(15)	Sorbitol
Prunes	10.80	HPLC with ELSD	(15)	Sorbitol
Dried apricot	6.0	HPLC with ELSD	(15)	Sorbitol
Blackberry fresh and frozen	4.76	HPLC with ELSD	(4)	Sorbitol
Pear	4.10	HPLC with ELSD	(4)	Sorbitol. Mean value firm and ripe
Pear nectar	3.40		(16)	Calculated using Australian analytical values for raw, unpeeled pear. (1986) Composition of Australian foods.
Cauliflower	2.96	HPLC with ELSD	(4)	Mannitol
Mushrooms	2.74	HPLC with ELSD	(4)	Sorbitol and mannitol
Plum	2.40	HPLC with ELSD	(15)	Sorbitol
Apples dried	1.90	HPLC with ELSD	(15)	Sorbitol
Celery	1.50	HPLC with ELSD	(15)	Mannitol
Apricot	1.20	HPLC with ELSD	(15)	Sorbitol
Canned apricot	1.20	HPLC with ELSD	(15)	Sorbitol. Value for apricot
Crepes with mushroom	1.20			Calculated by recipe from Swedish National Food Agency
Snow peas	1.16	HPLC with ELSD	(4)	Mannitol
Peach	1.03	HPLC with ELSD	(4)	Sorbitol and Mannitol. Mean of tree kinds of peaches
Nectarine	1.01	HPLC with ELSD	(4)	Sorbitol
Cherries canned in syrup	1		(16)	Sorbitol
				These data were derived using a recipe approach
Muesli gluten free	0.89	HPLC with ELSD	(8)	Sorbitol

High Performance Liquid Chromatography (HPLC)
Evaporative Light Scattering Detection (ELSD)

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