



Oriental Strawberry Metabolites: LC-MS Profiling, Antioxidant Potential and Postharvest Changes of *Fragaria orientalis* Fruits

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Table S1. *Fragaria* fruit sample description.

No	Collection Place	Collection Date	Coordinates	Voucher Specimens No	Samples weight, g
<i>Fragaria orientalis</i> wild samples					
YW-01	Yakutia Republic, Namskii Ulus, Zhatai, Tuimaada valley	15.VII.2015	62°20'38.9"N 129°29'59.0"E	YAK/ROS-0715/12-095	80; 85; 85; 110; 120
YW-02	Yakutia Republic, Gornii Ulus, Berdigestyakh	17.VII.2016	62°00'31.5"N 126°45'21.9"E	YAK/ROS-0716/18-014	70; 95; 120; 120; 140
YW-03	Yakutia Republic, Kobyaiskii Ulus, Kobyai	18.VII.2016	63°28'28.0"N 126°31'15.3"E	YAK/ROS-0716/18-027	100; 145; 150; 160; 175
YW-04	Yakutia Republic, Vilyiskii Ulus, Lyokyochoyon	10.VII.2017	63°01'39.2"N 123°43'30.0"E	YAK/ROS-0717/23-108	85; 90; 105; 110; 140
YW-05	Yakutia Republic, Vilyiskii Ulus, Khampa	12.VII.2017	63°46'34.5"N 123°10'34.6"E	YAK/ROS-0717/23-112	30; 55; 60; 60; 70
YW-06	Yakutia Republic, Vilyiskii Ulus, Kysyl-Syr	15.VII.2017	64°00'22.4"N 122°47'50.6"E	YAK/ROS-0717/23-114	50; 50; 65; 70; 85
YW-07	Yakutia Republic, Vekhnevilyiskii Ulus, Lippe-Atakh	11.VII.2018	63°44'50.5"N 120°16'33.0"E	YAK/ROS-0718/09-072	35; 50; 70; 75; 80
YW-08	Yakutia Republic, Vekhnevilyiskii Ulus, Kubyainde	17.VII.2018	64°32'41.7"N 119°57'44.2"E	YAK/ROS-0718/09-093	60; 70; 100; 110; 110
YW-09	Yakutia Republic, Megino-Kangalasskii Ulus, Maia	14.VII.2019	61°37'54.8"N 130°22'48.1"E	YAK/ROS-0719/27-108	120; 145; 150; 160; 160
YW-10	Yakutia Republic, Megino-Kangalasskii Ulus, Khorobut	12.VII.2020	61°54'00.6"N 130°44'42.5"E	YAK/ROS-0720/14-073	90; 90; 110; 110; 150
BW-01	Buryatia Republic, Pribaikalskii District, Ilyinka	10.VII.2015	52°04'24.8"N 107°19'06.0"E	BUR/ROS-0715/21-106	140; 150; 170; 180; 180
BW-02	Buryatia Republic, Pribaikalskii District, Turuntaevo	14.VII.2015	52°17'08.7"N 107°37'53.2"E	BUR/ROS-0715/22-115	180; 210; 220; 250; 260
BW-03	Buryatia Republic, Kabanskii District, Sukhaya	17.VII.2016	52°27'48.6"N 107°06'34.5"E	BUR/ROS-0716/18-076	75; 80; 95; 95; 100
BW-04	Buryatia Republic, Barguzinskii District, Maximikha	14.VII.2017	53°14'11.1"N 108°49'04.7"E	BUR/ROS-0717/27-063	90; 100; 105; 120; 120
BW-05	Buryatia Republic, Kabanskii District, Tankhoy	18.VII.2018	51°29'20.5"N 105°03'18.5"E	BUR/ROS-0718/37-114	110; 140; 160; 180; 190
BW-06	Buryatia Republic, Tarbagataiskii District, Tarbagatai	14.VII.2019	51°35'04.9"N 107°36'53.9"E	BUR/ROS-0719/14-051	50; 60; 60; 75; 90
BW-07	Buryatia Republic, Mukhorshibirskii District, Mukhorshibir	17.VII.2020	51°01'04.9"N 107°53'22.6"E	BUR/ROS-0720/27-083	140; 160; 180; 210; 240
BW-08	Buryatia Republic, Mukhorshibirskii District, Podlopatki	20.VII.2020	50°54'13.9"N 107°09'12.7"E	BUR/ROS-0720/29-087	100; 120; 140; 140; 150
BW-09	Buryatia Republic, Bichurskii District, Elan	16.VII.2021	50°29'35.8"N 107°22'04.0"E	BUR/ROS-0721/08-016	140; 160; 190; 200; 210
BW-10	Buryatia Republic, Mukhorshibirskii District, Nikolsk	14.VII.2022	51°07'17.7"N 108°22'22.9"E	BUR/ROS-0722/11-073	60; 70; 80; 80; 90
<i>Fragaria orientalis</i> cultivated samples					
BC-01	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 1	1.VII.2016	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0716/07-012	5 × 100; for post-harvest storage experiments 10 × 200 (storage of cold and room temp.); 8 × 500 (storage of frozen fruits); 4 × 1000 (storage of freeze dried fruits)

BC-02	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 1	2.VII.2017	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0717/04-014	5 × 100
BC-03	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 2	4.VII.2017	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0717/04-016	5 × 100
BC-04	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 1	2.VII.2018	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0718/07-021	5 × 100
BC-05	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 2	3.VII.2018	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0718/07-022	5 × 100
BC-06	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 1	3.VII.2019	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0719/05-020	5 × 100
BC-07	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 2	5.VII.2019	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0719/05-025	5 × 100
BC-08	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 2	1.VII.2020	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0720/14-021	5 × 100
BC-09	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 2	2.VII.2021	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0721/10-018	5 × 100
BC-10	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 3	1.VII.2021	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0722/14-009	5 × 100
<i>Fragaria viridis</i> wild samples					
IV-01	Irkutsk Region, Sludyanskii District, Kultuk	15.VII.2018	51°42'21.5"N 103°36'05.5"E	IRK/ROS-0718/03-011	50; 80; 80; 90; 90
IV-02	Irkutsk Region, Irkutskii District, Nikola	20.VII.2019	51°56'00.5"N 104°54'51.8"E	IRK/ROS-0719/07-017	110; 120; 120; 140; 140
IV-03	Irkutsk Region, Irkutskii District, Goloustnoye	22.VII.2019	52°01'53.7"N 105°19'15.2"E	IRK/ROS-0719/07-019	70; 70; 80; 90; 90
IV-04	Irkutsk Region, Bratskii District, Vikhorevka	25.VII.2020	56°20'36.1"N 100°57'13.7"E	IRK/ROS-0720/14-077	50; 50; 60; 70; 70
IV-05	Irkutsk Region, Bratskii District, Kezhemskii	27.VII.2020	56°31'32.1"N 102°21'36.2"E	IRK/ROS-0720/14-081	100; 110; 110; 120; 120
IV-06	Irkutsk Region, Chunkskii District, Pitaeva	25.VII.2021	55°57'28.2"N 99°39'26.8"E	IRK/ROS-0721/09-053	70; 70; 80; 90; 100
<i>Fragaria vesca</i> wild samples					
IE-01	Irkutsk Region, Kazachinsko-Lenskii District, Korotkovo	20.VII.2020	56°39'53.0"N 107°59'06.2"E	IRK/ROS-0720/14-014	100; 110; 110; 115; 120
IE-02	Irkutsk Region, Ust-Kutskii District, Ust-Kut	25.VII.2020	56°43'08.4"N 105°47'55.6"E	IRK/ROS-0720/14-019	70; 80; 80; 90; 90
IE-03	Irkutsk Region, Ust-Kutskii District, Mingan	29.VII.2020	56°59'00.0"N 105°50'33.8"E	IRK/ROS-0720/14-023	110; 110; 140; 140; 150
IE-04	Irkutsk Region, Ust-Udinskii District, Vidim	20.VII.2021	56°16'34.8"N 103°12'21.7"E	IRK/ROS-0721/18-072	50; 60; 60; 70; 70
IE-05	Irkutsk Region, Bratskii District, Bratsk	27.VII.2021	56°27'10.1"N 101°24'15.3"E	IRK/ROS-0721/20-096	100; 120; 120; 125; 125
BE-01	Buryatia Republic, Kyakhtinskii District, Kyakhta	18.VII.2020	50°26'46.9"N 106°16'16.3"E	BUR/ROS-0720/18-021	90; 90; 100; 100; 110
BE-02	Buryatia Republic, Tunkinskii District, Mondy	21.VII.2021	51°38'28.5"N 101°07'46.6"E	BUR/ROS-0721/12-035	80; 90; 110; 115; 120
BE-03	Buryatia Republic, Okinskii District, Sorok	25.VII.2022	52°17'19.1"N 100°11'50.5"E	BUR/ROS-0722/22-071	100; 110; 110; 140; 140
<i>Fragaria ananassa</i> cultivated samples					
BA-01	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 6	7.VII.2019	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0719/09-020	5 × 100
BA-02	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 6	10.VII.2020	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0720/08-028	5 × 100
BA-03	Buryatia Republic, Buryat Fruit and Plant Nursery, Field 6	5.VII.2021	51°52'01.1"N 107°40'38.6"E	BUR-C/ROS-0721/11-022	5 × 100

Table S2. Reference standards used for the qualitative and quantitative analysis by HPLC-DAD-ESI-tQ-MS assays.

No ^a	Compound	Standard ^a	Purity, (≥) %	Manufacturer (Cat. no) ^b
1	Hexosyl-hexose	Sucrose ^A	99	Sigma (S7903)
2	Hexose	Glucose ^A	99	Sigma (47739)
3	Citric acid	Citric acid ^A	99	Sigma (251275)
4	Malic acid	Malic acid ^A	99	Sigma (W265501)
5	Tartaric acid	Tartaric acid ^A	99	Sigma (W304401)
6	Fumaric acid	Fumaric acid ^A	99	Sigma (47910)
7	Ascorbic acid	Ascorbic acid ^{A,B}	99	Sigma (255564)
8	1-O-Galloyl glucose	1-O-Galloyl glucose ^A	90	Sigma (69288)
9	Galloyl hexose	1-O-Galloyl glucose ^A	90	Sigma (69288)
10	Gallic acid	Gallic acid ^{A,B}	97	Sigma (G7384)
11	Pedunculagin	Pedunculagin ^A	95	Toronto (P354070)
12	4-O-Caffeoylquinic acid	4-O-Caffeoylquinic acid ^A	98	Sigma (65969)
13	Strictinin	Strictinin ^{A,B}	98	Funakoshi (NH026102)
14	Procyanidin B2	Procyanidin B2 ^{A,B}	90	Sigma (PHL89552)
15	Pedunculagin isomer	Pedunculagin ^A	95	Toronto (P354070)
16	5-O-Caffeoylquinic acid	5-O-Caffeoylquinic acid ^A	95	Sigma (C3878)
17	Procyanidin B4	Procyanidin B4 ^A	98	ChemFaces (CFN91171)
18	Strictinin isomer	Strictinin ^A	98	Funakoshi (NH026102)
19	Catechin	Catechin ^{A,B}	95	Sigma (PHL89172)
20	Epicatechin	Epicatechin ^{A,B}	98	Sigma (E4018)
21	Pedunculagin isomer	Pedunculagin ^A	95	Toronto (P354070)
22	Procyanidin trimer (catechin/epicatechin trimer)	literature data ^A	-	-
23	Castalagin	Castalagin ^A	95	Sigma (61221)
24	Procyanidin C2	Procyanidin C2 ^A	95	TransMIT (C6201-P045)
25	Castalagin isomer	Castalagin ^A	95	Sigma (61221)
26	Sanguin H2	Sanguin H2 ^A	92	Lab collection
27	Cyanidin 3-O-glucoside	Cyanidin 3-O-glucoside ^{A,B}	98	Sigma (94099)
28	Pelargonidin 3-O-glucoside	Pelargonidin 3-O-glucoside ^{A,B}	98	ChemFaces (CFN92134)
29	Peonidin 3-O-glucoside	Peonidin 3-O-glucoside ^A	95	Sigma (40796)
30	Cyanidin 3-O-(6''-O-malonyl)-glucoside	Cyanidin 3-O-(6''-O-malonyl)-glucoside ^A	90	Sigma (PHL85728)
31	Pelargonidin O-malonyl-hexoside	literature data ^A	-	-
32	Peonidin O-malonyl-hexoside	literature data ^A	-	-
33	Cyanidin di-O-malonyl-hexoside	literature data ^A	-	-
34	Pelargonidin di-O-malonyl-hexoside	literature data ^A	-	-
35	Quercetin 3-O-sophoroside	Quercetin 3-O-sophoroside ^A	98	ChemFaces (CFN90630)
36	Quercetin 3-O-glucoside	Quercetin 3-O-glucoside ^A	98	Sigma (16654)
37	Quercetin 3-O-glucuronide	Quercetin 3-O-glucuronide ^A	90	Sigma (90733)
38	Sanguin H6	Sanguin H6 ^A	92	Lab collection
39	Sanguin H10	Sanguin H10 ^A	92	Lab collection
40	Lambertianin C	Lambertianin C ^A Pedunculagin ^B	92 95	Lab collection Toronto (P354070)
41	Kaempferol 3-O-rutinoside	Kaempferol 3-O-rutinoside ^{A,B}	98	Sigma (90242)
42	Kaempferol 3-O-glucoside	Kaempferol 3-O-glucoside ^{A,B}	97	Sigma (79851)
43	Kaempferol 3-O-glucuronide	Kaempferol 3-O-glucuronide ^A	98	ChemFaces (CFN90359)
44	Quercetin 3-O-arabinside	Quercetin 3-O-arabinside ^{A,B}	95	Sigma (75759)
45	Agrimoniin	Agrimoniin ^{A,B}	95	Lab collection
46	Fragariin A	literature data ^A	-	-
47	Kaempferol 3-O-rhamnoside	Afzelin ^A	98	Sigma (PHL83864)
48	1-O-Ellagoyl gentiobiose	1-O-Ellagoyl gentiobiose ^A Ellagic acid ^B	92 98	Lab collection ChemFaces (CFN98716)
49	1-O-Ellagoyl glucose	1-O-Ellagoyl glucose ^A Ellagic acid ^B	92 98	Lab collection ChemFaces (CFN98716)
50	Ellagic acid	Ellagic acid ^{A,B}	98	ChemFaces (CFN98716)
51	Quercetin 3-O-(6''-O-p-coumaroyl)-glucoside	Helichrysoside ^A	98	BioCrick (BCN9477)
52	Quercetin 3-O-(6''-O-acetyl)-glucoside	Quercetin 3-O-(6''-O-acetyl)-glucoside ^{A,B}	85	Extrasynthese (1099)

53	Kaempferol 3- <i>O</i> -(6''- <i>O</i> - <i>p</i> -coumaroyl)-glucoside	Tiliroside ^B	98	Sigma (79257)
54	Quercetin 3- <i>O</i> -(2''- <i>O</i> -acetyl)-glucoside	Quercetin 3- <i>O</i> -(2''- <i>O</i> -acetyl)-glucoside ^A	92	Lab collection
55	Kaempferol 3- <i>O</i> -(6''- <i>O</i> -acetyl)-glucoside	Kaempferol 3- <i>O</i> -(6''- <i>O</i> -acetyl)-glucoside	92	Lab collection
56	Quercetin <i>O</i> -acetyl- <i>O</i> -malonyl- <i>O</i> -hexoside	Quercetin 3- <i>O</i> -(6''- <i>O</i> -malonyl)-glucoside ^B	- 85	- Sigma (16733)
57	Ellagic acid <i>O</i> -methyl ester- <i>O</i> -desoxyhexoside	literature data ^A	-	-
58	Ellagic acid di- <i>O</i> -methyl ester- <i>O</i> -desoxyhexoside	literature data ^A	-	-
59	Tormentic acid di- <i>O</i> -hexoside	literature data ^A	-	-
60	Pomolic acid di- <i>O</i> -hexoside	literature data ^A	-	-
61	Tormentic acid <i>O</i> -hexoside	literature data ^A	-	-
62	Pomolic acid <i>O</i> -hexoside	literature data ^A	-	-
63	Quercetin 3- <i>O</i> -(2'',6''-di- <i>O</i> -acetyl)-glucoside	Quercetin 3- <i>O</i> -(2'',6''-di- <i>O</i> -acetyl)-glucoside ^A	90	Lab collection
64	Tormentic acid	Tormentic acid ^A	98	ChemFaces (CFN99434)
65	Pomolic acid	Pomolic acid ^A	98	ChemFaces (CFN99433)

^a Standards were used in qualitative (^A) or/and quantitative analysis (^B). ^b Manufacturers list: BioCrick—BioCrick (Chengdu, Sichuan, PRC); ChemFaces—ChemFaces (Wuhan, Hubei, PRC); Extrasynthese—Extrasynthese (Lyon, France); Funakoshi—Funakoshi Co. Ltd. (Tokyo, Japan); Sigma—Sigma-Aldrich (St. Louis, MO, USA); Toronto—Toronto Research Chemicals (North York, ON, Canada); TransMIT—TransMIT GmbH (Gießen, Germany).

Table S3. Regression equations, correlation coefficients (r^2), standard deviation (S_{yx}), limits of detection (LOD), limits of quantification (LOQ) and linear ranges for 17 reference standards.

Compound	Ionization a	CE ^b (eV)	Regression equation ^c		r^2	S_{yx}	LOD/ LOQ ($\mu\text{g/mL}$)	Linear range ($\mu\text{g/mL}$)
			a	$b \cdot 10^6$				
Agrimoniin	N	-35	0.8214	-0.2716	0.9893	$5.37 \cdot 10^{-2}$	0.22/0.65	0.7–100.0
Ascorbic acid	N	-10	0.9214	-0.0373	0.9997	$2.10 \cdot 10^{-2}$	0.07/0.22	0.3–100.0
Catechin	N	-35	0.9562	-0.0521	0.9971	$7.79 \cdot 10^{-2}$	0.27/0.82	0.9–100.0
Cyanidin 3- <i>O</i> -glucoside	P	+10	1.4267	-0.5637	0.9907	$12.72 \cdot 10^{-2}$	0.29/0.89	0.9–100.0
Epicatechin	N	-25	1.4632	-0.0524	0.9953	$8.12 \cdot 10^{-2}$	0.18/0.56	0.6–100.0
Ellagic acid	N	-30	0.9114	-0.6312	0.9887	$6.37 \cdot 10^{-2}$	0.23/0.70	0.7–100.0
Gallic acid	N	-20	2.6538	-0.1376	0.9990	$1.17 \cdot 10^{-2}$	0.01/0.04	0.1–100.0
Kaempferol 3- <i>O</i> -glucoside	N	-20	2.0859	-0.9171	0.9980	$6.18 \cdot 10^{-2}$	0.03/0.09	0.1–100.0
Kaempferol 3- <i>O</i> -rutinoside	N	-30	1.9634	-0.4511	0.9952	$9.18 \cdot 10^{-2}$	0.15/0.46	0.5–100.0
Pedunculagin	N	-35	0.6370	-0.4521	0.9872	$6.11 \cdot 10^{-2}$	0.32/0.96	1.0–100.0
Pelargonidin 3- <i>O</i> -glucoside	P	+10	0.9634	-0.8634	0.9832	$10.37 \cdot 10^{-2}$	0.36/1.07	1.1–100.0
Procyanidin B2	N	-25	1.3620	-0.0820	0.9961	$9.91 \cdot 10^{-2}$	0.21/0.72	0.8–100.0
Quercetin 3- <i>O</i> -arabinoside	N	-20	1.4412	-0.6211	0.9930	$11.25 \cdot 10^{-2}$	0.26/0.78	0.8–100.0
Quercetin 3- <i>O</i> -(6''- <i>O</i> -acetyl)-glucoside	N	-20	1.1103	-0.9217	0.9901	$14.33 \cdot 10^{-2}$	0.42/1.29	1.5–100.0
Quercetin 3- <i>O</i> -(6''- <i>O</i> -malonyl)-glucoside	N	-20	1.2703	-0.7911	0.9814	$15.26 \cdot 10^{-2}$	0.40/1.20	1.5–100.0
Strictinin	N	-35	0.9634	-0.3518	0.9804	$7.34 \cdot 10^{-2}$	0.25/0.76	0.8–100.0
Tiliroside	N	-30	2.3312	-0.4563	0.9803	$14.92 \cdot 10^{-2}$	0.21/0.64	0.7–100.0

^a Ionization mode : N—negative, P—positive. ^b CE—collision energy. ^c Regression equation: $y = a \cdot x + b$.

Table S4. Nutritional and chemical composition of wild and cultivated samples of *F. orientalis* fruits.

Parameter	YW-01	YW-02	YW-03	YW-04	YW-05	YW-06	YW-07	YW-08	YW-09	YW-10
Dry matter, g/100 g	17.2	17.6	17.0	16.3	18.1	17.0	16.7	16.0	18.3	17.5
Ash, g/100 g	0.9	0.9	0.8	0.9	0.7	0.9	0.6	0.7	0.8	0.8
Protein, g/100 g	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.4
Lipids, g/100 g	1.0	1.1	1.0	0.9	1.0	1.1	0.8	0.9	1.1	1.0
Carbohydrates, g/100 g	10.3	10.0	9.7	10.4	9.5	9.7	9.0	10.4	9.2	9.1
Fructose, g/100 g	1.8	1.5	2.2	1.6	1.7	1.9	2.0	2.1	2.1	1.5
Glucose, g/100 g	1.6	1.5	2.0	1.5	1.6	1.8	2.0	2.0	1.9	1.4
Sucrose, g/100 g	1.5	2.0	1.6	1.8	2.0	1.4	1.5	1.9	1.8	2.0
Total dietary fibers, g/100 g	5.1	5.2	5.0	4.8	5.2	5.3	5.0	4.6	5.1	5.0
Soluble dietary fibers, g/100 g	4.4	4.4	4.2	4.1	4.5	4.5	4.3	4.1	4.4	4.2
Insoluble dietary fibers, g/100 g	0.7	0.8	0.8	0.7	0.7	0.8	0.7	0.5	0.7	0.8
Titrateable acids, g/100 g	1.1	1.0	0.8	1.2	1.4	1.0	0.9	0.9	1.0	0.9
Ascorbic acid, mg/100 g	124.0	141.4	129.1	89.8	92.1	108.4	149.6	120.1	155.0	96.4
Anthocyanins, mg/100 g	8.5	12.4	15.0	9.1	7.3	10.2	10.7	11.4	9.2	11.0
Ellagic acid free, mg/100 g	15.3	14.1	10.7	10.5	12.3	11.3	8.6	10.3	12.8	10.3
Ellagic acid total, mg/100 g	281.3	252.0	231.6	220.6	269.2	240.4	209.9	197.2	233.3	214.3
Catechins, mg/100 g	3.4	4.3	4.4	3.5	5.0	2.6	3.4	3.9	4.4	4.2
Procyanidins, mg/100 g	6.0	7.6	7.8	6.2	7.3	5.9	6.0	5.3	5.2	6.0
Flavonoids, mg/100 g	5.1	4.2	2.2	4.3	4.2	5.1	6.1	4.3	4.1	5.4
Total phenolics, mg/100 g	855.5	929.1	1053.0	714.0	972.9	856.6	760.1	853.1	1125.8	1063.2
Parameter	BW-01	BW-02	BW-03	BW-04	BW-05	BW-06	BW-07	BW-08	BW-09	BW-10
Dry matter, g/100 g	19.7	19.3	22.1	20.6	18.6	19.1	23.1	22.0	20.6	19.9
Ash, g/100 g	0.9	1.0	1.2	1.4	0.9	1.0	1.1	1.0	1.0	0.9
Protein, g/100 g	0.5	0.5	0.4	0.6	0.6	0.5	0.6	0.6	0.5	0.5
Lipids, g/100 g	1.2	1.4	1.2	1.0	1.4	1.4	1.1	1.0	1.0	1.2
Carbohydrates, g/100 g	12.5	12.0	11.6	14.0	12.9	12.0	11.0	11.5	14.0	12.8
Fructose, g/100 g	2.1	2.2	2.0	2.3	1.9	1.8	2.0	2.1	2.0	2.0
Glucose, g/100 g	1.8	1.9	1.8	2.0	1.9	1.7	1.9	2.0	1.8	1.9
Sucrose, g/100 g	1.9	1.8	2.0	1.8	1.8	2.0	1.9	2.1	2.1	2.0
Total dietary fibers, g/100 g	5.6	5.3	6.0	6.1	6.0	5.8	5.8	5.7	5.6	6.0
Soluble dietary fibers, g/100 g	4.6	4.4	5.0	5.0	5.2	5.0	4.9	5.1	4.8	5.1
Insoluble dietary fibers, g/100 g	1.0	0.9	1.0	1.1	0.8	0.8	0.9	0.6	0.8	0.9
Titrateable acids, g/100 g	1.0	1.0	0.9	1.0	1.1	0.8	0.9	0.8	1.0	1.0
Ascorbic acid, mg/100 g	146.0	159.2	150.1	140.8	128.6	120.3	167.1	143.0	128.9	150.2
Anthocyanins, mg/100 g	9.3	9.5	10.8	11.3	14.2	11.2	9.8	8.2	10.7	11.5
Ellagic acid free, mg/100 g	17.5	22.3	25.9	14.6	12.9	25.6	28.7	20.6	16.3	20.5
Ellagic acid total, mg/100 g	360.4	322.8	394.3	352.6	389.2	364.0	406.6	346.1	327.8	359.0
Catechins, mg/100 g	4.0	4.2	3.8	3.8	4.0	4.1	4.3	4.0	4.0	3.2
Procyanidins, mg/100 g	5.3	5.0	6.1	5.2	5.0	6.7	4.8	4.7	4.5	5.6
Flavonoids, mg/100 g	3.1	3.3	3.6	4.2	3.2	3.8	3.5	3.0	4.0	4.0
Total phenolics, mg/100 g	926.1	853.9	1001.4	1242.2	1463.1	1269.0	967.7	866.3	973.2	980.4
Parameter	BC-01	BC-02	BC-03	BC-04	BC-05	BC-06	BC-07	BC-08	BC-09	BC-10
Dry matter, g/100 g	17.8	19.3	20.2	20.0	19.3	18.9	20.7	20.3	20.5	20.0
Ash, g/100 g	0.8	0.7	0.8	0.9	0.8	0.8	0.8	0.7	0.7	0.8
Protein, g/100 g	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.6	0.5
Lipids, g/100 g	0.9	1.0	0.9	1.1	1.0	1.0	0.9	0.8	0.9	0.8
Carbohydrates, g/100 g	10.3	11.2	11.0	10.8	10.5	10.3	11.8	10.6	10.5	10.0
Fructose, g/100 g	2.0	1.9	1.8	2.0	1.9	1.9	2.0	1.9	2.0	2.0
Glucose, g/100 g	1.8	1.8	1.7	1.8	1.7	1.7	1.8	1.6	1.8	1.8
Sucrose, g/100 g	1.9	1.7	1.6	1.7	1.9	1.9	2.0	1.6	1.7	1.7
Total dietary fibers, g/100 g	5.6	5.8	5.7	5.6	5.5	5.5	5.4	5.6	5.8	5.9
Soluble dietary fibers, g/100 g	5.0	5.2	5.0	5.0	4.9	4.8	4.7	5.0	5.0	5.1

Insoluble dietary fibers, g/100 g	0.6	0.6	0.7	0.6	0.6	0.7	0.7	0.6	0.8	0.8
Titrateable acids, g/100 g	0.9	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.8	0.8
Ascorbic acid, mg/100 g	126.4	125.0	125.9	118.6	134.2	120.7	109.6	112.7	120.8	127.3
Anthocyanins, mg/100 g	12.7	14.9	15.2	14.7	15.9	17.2	16.3	10.8	14.6	14.0
Ellagic acid free, mg/100 g	10.3	10.9	11.2	10.5	10.6	11.8	10.8	10.8	14.2	12.7
Ellagic acid total, mg/100 g	320.6	315.7	306.8	326.3	318.9	329.4	340.8	330.9	314.7	308.2
Catechins, mg/100 g	4.2	4.0	4.6	4.2	4.0	3.8	4.0	3.9	4.3	4.2
Procyanidins, mg/100 g	6.2	6.1	6.0	5.2	5.8	6.3	6.2	6.0	6.1	6.1
Flavonoids, mg/100 g	4.1	4.0	4.3	4.0	3.8	3.6	3.8	4.0	4.1	4.1
Total phenolics, mg/100 g	823.6	879.2	714.6	782.6	825.1	817.3	893.2	852.4	822.0	814.3

Table S5. Demographic information of participants of *Fragaria* fruits sensory evaluation.

Index	Percentage (n)
Gender	
male	50 (30)
female	50 (30)
Age	
18–30	32 (53)
30–40	20 (33)
> 40	8 (14)

Table S6. Sensory evaluation data of *Fragaria* fruits.

Index	<i>F. orientalis</i> wild Yakutia	<i>F. orientalis</i> wild Buryatia	<i>F. orientalis</i> culti- vated Buryatia	<i>F. ananassa</i> culti- vated Buryatia
Color acceptability	9.0 ± 0.7	9.1 ± 0.7	9.4 ± 0.2	9.5 ± 0.4
Flavor acceptability	8.6 ± 0.6	8.8 ± 0.6	9.2 ± 0.4	9.7 ± 0.2
Saltiness	9.2 ± 0.7	9.1 ± 0.7	9.2 ± 0.6	9.5 ± 0.4
Bitterness	9.5 ± 0.4	9.5 ± 0.6	9.6 ± 0.4	9.6 ± 0.2
Sourness	9.0 ± 0.9	9.1 ± 0.9	9.3 ± 0.4	9.6 ± 0.3
Astringency	8.8 ± 1.0	8.9 ± 1.0	9.2 ± 0.6	9.7 ± 0.2
Sweetness	9.0 ± 0.6	9.2 ± 0.6	9.0 ± 0.8	9.8 ± 0.1
Juiciness	9.4 ± 0.3	9.4 ± 0.4	9.5 ± 0.3	9.8 ± 0.1
Overall preferences	9.4 ± 0.5	9.5 ± 0.3	9.5 ± 0.3	10

Preference scale ranged from 0 (greatest imaginary dislike) to 10 (greatest imaginary like).

Table S7. Chromatographic (*t*), ultraviolet (UV) and mass-spectrometric data of compounds **1–65** found in *F. orientalis* fruits.

No.	<i>t</i> , min	UV spectrum, λ_{max} , nm	Deprotonated ion, <i>m/z</i> ^a	MS ² , <i>m/z</i>	Compound [ref.]	IL _b
Carbohydrates						
1	1.48		341 ^I		Hexosyl-hexose [41]	2
2	1.55		179 ^I		Hexose [41]	2
Organic acids						
3	1.89		191 ^I		Citric acid	1
4	2.18		133 ^I		Malic acid	1
5	2.52		149 ^I		Tartaric acid	1
6	2.94		115 ^I		Fumaric acid	1
7	5.01	265	175 ^I		Ascorbic acid	1
Gallic acid and derivatives						
8	5.38	272	331 ^I	169 (100), 125 (51)	1- <i>O</i> -Galloyl glucose [42]	1
9	5.61	272	331 ^I	169 (100), 125 (42)	Galloyl hexose [42]	2
10	5.94	270	169 ^I		Gallic acid [42]	1
Ellagitannins						
11	6.05	220, 250	783 ^I ; 391 ^{III}	633 (21), 481 (82), 301 (100)	Pedunculagin [43]	1
13	8.08	260	633 ^I	481 (18), 331 (54), 301 (100)	Strictinin [43]	1
15	9.28	220, 250	783 ^I ; 391 ^{III}	633 (18), 481 (78), 301 (100)	Pedunculagin isomer [43]	2
18	10.26	260	633 ^I	481 (14), 331 (57), 301 (100)	Strictinin isomer [43]	2
21	11.62	220, 250	783 ^I ; 391 ^{III}	633, 481, 301	Pedunculagin isomer [43]	2
23	12.41	220	933 ^I ; 466 ^{III}	301	Castalagin [43]	1
25	13.09	220	933 ^I ; 466 ^{III}	301	Castalagin isomer [43]	2
26	13.40	236	1103 ^I ; 551 ^{III}	951 (5), 933 (9), 783 (11), 633 (53), 481 (27), 301 (100)	Sanguiin H2 [43]	1
38	20.43	235	1869 ^I ; 934 ^{III}	1701 (2), 1567 (5), 1265 (3), 1085 (8), 935 (12), 783 (50), 633 (83), 481 (12), 301 (100)	Sanguiin H6 [43]	1
39	20.62	230, 310	1567 ^I ; 783 ^{III}	933 (11), 633 (23), 301 (100)	Sanguiin H10 [43]	1
40	21.02	312	1401 ^{III}	1235 (4), 933 (5), 783 (14), 633 (37), 301 (100)	Lambertianin C [43]	1
45	23.11	235, 354	1869 ^I ; 934 ^{III}	1567 (2), 1265 (4), 1085 (9), 935 (17), 783 (34), 633 (21), 481 (11), 301 (100)	Agrimoniin [43]	1
46	23.51	220, 270	1018 ^{III}	1691 (2), 1567 (3), 1265 (3), 1209 (5), 935 (11), 783 (27), 633 (14), 481 (62), 301 (100)	Fragariin A [45]	2
48	24.60	252, 350	625 ^I	463 (50), 301 (100), 229 (31)	1- <i>O</i> -Ellagoyl gentiobiose [46]	1
49	25.09	250, 353	463 ^I	301 (100), 229 (31)	1- <i>O</i> -Ellagoyl glucose [46]	1
50	25.53	250, 353	301 ^I	229	Ellagic acid [46]	1
57	30.83	250, 353	461 ^I	315 (53), 301 (100)	Ellagic acid <i>O</i> -methyl ester- <i>O</i> -desoxyhexo- side [10,46]	2
58	31.02	250, 353	475 ^I	329 (42), 301 (100)	Ellagic acid di- <i>O</i> -methyl ester- <i>O</i> -desoxyhexoside [10,46]	2
Hydroxycinnamates						
12	6.33	328	353 ^I	191 (28), 179 (100), 173 (94), 135 (21)	4- <i>O</i> -Caffeoylquinic acid [21]	1
16	9.51	328	353 ^I	191 (100), 165 (18)	5- <i>O</i> -Caffeoylquinic acid [21]	1
Procyanidins and catechins						
14	8.93	280	577 ^I	289	Procyanidin B2 [42]	1
17	10.02	280	577 ^I	289	Procyanidin B4 [42]	1
19	10.56	280	289 ^I		Catechin [42]	1
20	11.41	280	289 ^I		Epicatechin [42]	1

22	11.99	280	865 ^I	577, 289	Procyanidin trimer (catechin/epicatechin trimer) [42]	2
24	12.76	280	865 ^I	577, 289	Procyanidin C2 [42]	1
Anthocyanins						
27	13.62	515	447 ^{II}	285	Cyanidin 3- <i>O</i> -glucoside [44]	1
28	13.82	503	431 ^{II}	269	Pelargonidin 3- <i>O</i> -glucoside [44]	1
29	14.05	520	461 ^{II}	299	Peonidin 3- <i>O</i> -glucoside [44]	1
30	14.48	515	533 ^{II}	447 (31), 285 (100)	Cyanidin 3- <i>O</i> -(6''- <i>O</i> -malonyl)-glucoside [44]	1
31	14.98	502	517 ^{II}	431 (22), 285 (100)	Pelargonidin <i>O</i> -malonyl-hexoside [44]	2
32	15.14	520	547 ^{II}	461 (35), 299 (100)	Peonidin <i>O</i> -malonyl-hexoside [44]	2
33	15.54	515	619 ^{II}	533 (5), 447 (31), 285 (100)	Cyanidin di- <i>O</i> -malonyl-hexoside [44]	2
34	16.10	502	603 ^{II}	517 (3), 431 (22), 285 (100)	Pelargonidin di- <i>O</i> -malonyl-hexoside [44]	2
Flavonol glycosides						
35	17.58	256, 264, 355	625 ^I	463 (52), 301 (100)	Quercetin 3- <i>O</i> -sophoroside [40,41]	1
36	19.53	256, 266, 355	463 ^I	301	Quercetin 3- <i>O</i> -glucoside [40,41]	1
37	19.97	256, 266, 355	477 ^I	301	Quercetin 3- <i>O</i> -glucuronide [40,41]	1
41	21.43	265, 350	593 ^I	447 (14), 285 (100)	Kaempferol 3- <i>O</i> -rutinoside [40,41]	1
42	21.71	265, 350	447 ^I	285	Kaempferol 3- <i>O</i> -glucoside [40,41]	1
43	21.97	265, 350	461 ^I	285	Kaempferol 3- <i>O</i> -glucuronide [40,41]	1
44	22.88	255, 264, 354	433 ^I	301	Quercetin 3- <i>O</i> -arabinoside [40,41]	1
47	23.98	265, 350	431 ^I	285	Kaempferol 3- <i>O</i> -rhamnoside [40,41]	1
51	26.42	255, 264, 354	609 ^I	463 (22), 301 (100)	Quercetin 3- <i>O</i> -(6''- <i>O</i> - <i>p</i> -coumaroyl)-glucoside [47]	1
52	26.83	255, 264, 354	505 ^I	463 (20), 301 (100)	Quercetin 3- <i>O</i> -(6''- <i>O</i> -acetyl)-glucoside [48]	1
53	27.43	265, 350	593 ^I	447 (29), 285 (100)	Kaempferol 3- <i>O</i> -(6''- <i>O</i> - <i>p</i> -coumaroyl)-glucoside [47]	1
54	27.91	255, 264, 354	505 ^I	463 (8), 301 (100)	Quercetin 3- <i>O</i> -(2''- <i>O</i> -acetyl)-glucoside [48]	1
55	28.40	255, 264, 354	505 ^I	463 (11), 301 (100)	Quercetin 3- <i>O</i> -(6''- <i>O</i> -acetyl)-glucoside [48]	1
56	30.26	255, 264, 354	591 ^I	549 (24), 505 (73), 463 (21), 301 (100)	Quercetin <i>O</i> -acetyl- <i>O</i> -malonyl- <i>O</i> -hexoside [10]	2
63	34.02	255, 264, 354	547 ^I	505 (64), 463 (22), 301 (100)	Quercetin 3- <i>O</i> -(2'',6''-di- <i>O</i> -acetyl)-glucoside [48]	1
Triterpenes						
59	31.63		811 ^I	649 (5), 487 (100)	Tormentic acid di- <i>O</i> -hexoside [10]	2
60	31.93		795 ^I	633 (11), 471 (100)	Pomolic acid di- <i>O</i> -hexoside [10]	2
61	32.44		649 ^I	487	Tormentic acid <i>O</i> -hexoside [10]	2
62	32.68		633 ^I	471	Pomolic acid <i>O</i> -hexoside [10]	2
64	34.38		487 ^I		Tormentic acid [10]	1
65	34.52		471 ^I		Pomolic acid [10]	1

^a Deprotonated ions: ^I [M-H][−], ^{II} [M-2H][−], ^{III} [M-2H]^{2−}. ^b Identification levels: (1) identified compounds after comparison of UV, mass-spectral data, and retention time with reference standards; (2) putatively annotated compounds after comparison of UV and mass-spectral data with literature data.

Table S8. Quantitative content of 21 compounds in *Fragaria* fruits, mg/100 g fresh weight.

Plant No	Compound No																				
	7	10	13	14	19	20	27	28	31	34	40	41	42	44	45	48	49	50	52	53	56
YW-01	124	53	109	5	2	2	1	8	3	4	15	1	1	2	152	3	3	15	3	4	2
YW-02	108	50	114	3	2	1	1	9	4	3	10	2	2	1	170	3	2	18	3	5	1
YW-03	139	61	127	4	1	3	2	7	4	5	8	2	1	2	141	4	2	11	2	5	1
YW-04	101	54	134	7	1	2	1	11	5	5	9	2	2	2	175	3	2	19	3	4	2
YW-05	108	42	108	2	2	1	2	10	4	6	12	3	2	4	193	1	1	22	1	3	2
YW-06	153	73	111	3	2	1	2	7	1	7	11	1	1	1	154	5	2	25	1	2	1
YW-07	111	89	114	4	1	1	1	9	2	10	8	1	1	1	170	3	2	14	3	3	1
YW-08	132	56	123	4	1	1	1	9	2	11	11	1	2	1	160	2	1	18	2	3	1
YW-09	109	50	139	5	2	3	1	7	4	8	10	2	1	1	141	7	3	17	2	3	1
YW-10	108	53	120	3	3	2	1	8	1	2	7	2	1	2	140	2	1	15	2	2	1
BW-01	152	64	115	3	1	2	1	10	3	2	18	1	2	2	193	4	2	17	2	1	2
BW-02	161	75	125	4	2	2	2	11	2	3	21	2	2	3	146	5	4	18	1	2	3
BW-03	160	89	133	8	2	3	2	8	2	4	20	1	1	3	134	3	2	17	1	2	2
BW-04	144	63	164	6	4	3	3	8	2	4	17	2	2	2	152	3	2	29	2	1	2
BW-05	109	91	167	4	2	2	1	5	3	3	14	3	3	1	181	7	3	31	1	1	1
BW-06	135	52	160	7	1	2	2	4	4	2	10	2	1	2	180	10	5	15	1	1	2
BW-07	139	57	168	7	2	1	2	5	7	2	18	1	2	2	192	6	2	16	1	2	2
BW-08	172	42	130	6	2	1	2	12	2	4	14	2	2	2	142	2	1	22	2	3	3
BW-09	140	81	140	9	2	1	1	14	2	5	15	2	2	3	145	4	1	25	2	1	2
BW-10	132	80	117	4	1	1	1	10	5	4	14	2	2	3	149	4	1	14	2	1	2
BC-01	108	42	63	5	1	1	2	10	2	7	10	1	0	3	120	1	0	14	1	4	1
BC-02	133	39	75	4	1	1	3	11	4	6	8	1	0	2	106	2	1	11	0	4	1
BC-03	127	51	84	4	1	1	3	12	3	3	9	2	1	1	111	1	0	9	1	3	0
BC-04	125	57	82	5	1	2	2	14	5	2	10	2	1	1	105	1	0	20	1	3	1
BC-05	120	29	80	5	1	1	2	12	6	3	11	2	1	1	98	3	1	15	1	4	1
BC-06	135	39	72	3	1	1	2	10	1	3	10	2	1	1	114	2	1	17	0	5	2
BC-07	111	45	64	1	2	1	2	10	7	2	8	1	1	2	92	1	0	11	1	4	2
BC-08	105	30	60	2	1	1	3	11	2	2	12	1	0	1	97	1	0	10	1	4	1
IV-01	84	1	10	2	3	0	3	2	0	0	86	7	5	1	135	0	0	12	2	1	0
IV-02	89	2	12	2	4	1	1	2	0	0	93	5	7	1	140	0	0	10	3	2	0
IV-03	106	1	14	1	5	0	1	2	0	0	108	8	3	1	147	0	0	9	3	2	1
IV-04	110	5	10	2	2	0	2	3	0	0	85	3	8	0	147	0	0	12	2	1	0
IV-05	92	2	11	2	5	0	1	4	0	0	111	6	9	1	130	0	0	8	3	4	0
IV-06	90	3	14	1	3	1	1	1	0	0	127	4	11	1	132	0	0	7	3	2	1
IE-01	106	17	8	4	1	1	2	1	1	0	33	3	2	2	127	1	0	10	0	2	0
IE-02	111	10	3	5	2	2	1	0	0	0	25	1	3	1	125	0	0	12	0	1	1
IE-03	143	14	4	3	2	0	1	0	0	0	20	1	2	1	114	1	0	6	1	4	1
IE-04	92	8	5	2	2	1	1	1	0	0	24	2	1	2	110	1	0	11	0	5	0
IE-05	81	9	5	3	1	1	1	1	0	0	37	1	1	1	139	0	0	14	1	1	0
BE-01	106	11	6	3	2	1	2	1	1	1	35	1	2	1	159	0	0	15	1	3	1
BE-02	107	22	7	3	2	2	1	0	0	0	32	1	2	1	162	1	0	17	1	2	0
BE-03	128	10	4	7	3	2	2	0	0	0	30	1	1	1	160	1	0	18	1	2	0
BA-01	71	2	0	2	0	1	3	31	1	4	3	1	1	0	10	0	0	1	1	1	0
BA-02	75	5	0	1	1	1	4	51	1	5	4	2	3	1	23	0	0	3	1	1	0
BA-03	92	3	0	1	1	0	3	39	1	7	7	2	1	0	20	0	0	1	1	1	0

YW – *F. orientalis* wild Yakutia; BW – *F. orientalis* wild Buryatia; BC – *F. orientalis* cultivated Yakutia; IV – *F. viridis* wild Irkutsk; IE – *F. vesca* wild Irkutsk; BE – *F. vesca* wild Buryatia; BA – *F. ananasa* cultivated Buryatia.