

Table 2 Composition and content of polyphenols in pulp of 12 apple landraces grown in Heilongjiang Province mg·kg⁻¹(FW)

Variety	Hydroxycinnamic acids							Flavonols			
	GALAC	PROAC	CINAC	CHLAC	NEOAC	CRYAC	KAE	QUERU	QUEAL	QUEGL	QUERC
‘Longshuai’	nd	nd	7.64±0.00	14.77±1.18	nd	4.22±0.83	nd	nd	4.98±0.00	nd	10.36±0.55
‘Huahong’	nd	nd	nd	48.24±2.51	nd	4.08±0.47	nd	nd	nd	7.3±0.06	10.58±0.34
‘Cuiping’	nd	nd	nd	2.94±0.03	nd	10.90±0.00	nd	nd	nd	nd	10.10±0.00
‘Jixinguo’	nd	nd	nd	8.29±0.00	nd	17.81±1.82	nd	nd	nd	nd	10.25±0.24
‘Qizaohong’	nd	nd	7.59±0.00	3.74±0.28	nd	3.71±0.00	nd	nd	nd	nd	nd
‘Number 1 Jixi’	nd	nd	7.78±0.27	3.20±0.17	nd	3.56±0.10	9.97±0.00	5.90±0.03	5.15±0.20	7.29±0.03	nd
‘Shuangqiu’	nd	nd	nd	29.62±1.57	nd	3.88±0.17	nd	nd	nd	7.28±0.00	10.09±0.01
‘Zikui’	nd	nd	nd	nd	nd	42.68±2.83	nd	nd	5.14±0.29	7.18±0.00	10.66±0.10
‘124’	nd	nd	nd	13.59±0.00	nd	3.39±0.54	nd	nd	5.01±0.01	7.11±0.00	10.39±0.07
‘Longhong’	nd	nd	7.59±0.01	4.12±0.10	nd	3.56±0.08	8.98±0.08	7.08±0.00	5.23±0.00	7.65±0.00	nd
‘Zixiang’	nd	nd	7.58±0.00	47.35±0.00	nd	4.61±0.62	nd	nd	5.09±0.00	7.24±0.00	10.27±0.19
‘Tianfeng’	nd	nd	7.60±0.02	4.09±0.90	nd	3.46±0.48	8.98±0.51	5.78±0.00	5.55±0.87	7.11±0.00	10.32±0.32
Mutations coefficient/%			104.46	115.26		130.46	181.21	181.96	88.39	73.91	60.34
Variety	Dihydrochalcones		Anthocyanins			Proanthocyanidins					
	PHL		CYAGA	CAYGL	ANTRH	PROB1	CAT	PROB4	PROB2	EP	
‘Longshuai’	11.48±0.00		nd	nd	nd	5.29±1.98	nd	12.26±0.00	8.47±1.54	20.35±0.00	
‘Huahong’	nd		nd	nd	nd	11.54±0.61	nd	2.58±0.00	37.95±2.57	8.05±0.00	
‘Cuiping’	7.86±0.00		nd	nd	nd	2.49±0.00	0.06±0.00	nd	8.95±1.77	nd	
‘Jixinguo’	nd		nd	nd	nd	3.36±0.01	nd	2.76±0.00	15.01±1.29	10.68±0.12	
‘Qizaohong’	nd		nd	nd	6.14±0.00	15.30±2.54	129.51±0.00	2.99±0.00	5.85±0.52	21.29±0.00	
‘Number 1 Jixi’	nd		nd	nd	nd	24.84±2.41	10.85±0.00	nd	5.67±0.34	7.75±0.00	
‘Shuangqiu’	nd		nd	nd	nd	4.83±0.64	nd	2.62±0.05	26.75±0.93	nd	
‘Zikui’	14.19±1.27		nd	nd	nd	4.53±0.00	nd	2.59±0.00	5.18±0.00	9.15±0.66	
‘124’	10.31±0.82		nd	nd	nd	2.63±0.00	nd	2.54±0.00	5.76±0.10	10.54±0.19	
‘Longhong’	nd		nd	nd	nd	2.57±0.27	117.69±2.39	2.81±0.11	nd	23.53±2.65	
‘Zixiang’	11.87±0.00		7.59±0.00	nd	nd	2.67±0.00	nd	2.56±0.00	7.68±2.09	31.36±0.00	
‘Tianfeng’	16.95±0.90		nd	nd	nd	3.04±0.00	5.36±0.00	nd	5.86±1.07	13.60±0.70	
Mutations coefficient/%	110.17					100.07	217.07	114.25	97.07	72.74	

Note: nd: Not detected. GALAC: gallic acid; PROAC: Protocatechuic acid; CINAC: Cinnamic acid; CHLAC: Chlorogenic acid; NEOAC: Neochlorogenic acid; CRYAC: Cryptochlorogenic acid; KAE: Kaempferol; QUERU: Rutin; QUEAL: Quercetin 3-galactoside; QUEGL: Quercetin 3-glucoside; QUERC: Quercetin; PHL: Phlorizin; CYAGA: Cyanidin 3-galactoside; CAYGL: Cyanidin-3-O-glucoside; ANTRH: Anthocyanin rhamnoside; PROB1: Proanthocyanidin B1; PROB2: Proanthocyanidin B2; PROB4: Proanthocyanidin B4; CAT: Catechins; EP: Epicatechin