Antioxidant capacity, metal contents and their health risk assessment of Tartary buckwheat teas

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Supplementary Information

Table S1 TPC, TFC and AC in TBT

Types	TPC(mg gallic acid g^{-1})±SD	TFC(mg rutin g^{-1})±SD	AC(mmol trolox g^{-1})±SD
WPT	0.1105±0.02	0.1055±0.03	14.9436±3.39
WBT	0.1141±0.02	0.1089±0.03	15.1856±2.65
WET	0.0522±0.01	0.0343±0.01	5.2716±0.72

Table S2 TPC, TFC and AC in TBT infusions

Types	TPC(mg gallic acid L^{-1})±SD	TFC(mg rutin L^{-1})±SD	AC(mmol trolox L^{-1})±SD
WPT	3.4209±0.90	2.4298±0.87	1.4254±0.44
WBT	3.2217±0.65	1.8316±0.52	1.3563±0.32
WET	3.1526±0.71	3.057±0.89	1.2657±0.33

Table S3 Metals content (mg Kg^{-1}) in TBT

Types	Cr	Ni	Cd	Pb	Cu	Zn
WPT	2.60	2.92	0.14	0.36	8.28	47.45
	3.03	2.29	0.06	0.37	6.81	38.08
	2.62	2.52	0.09	0.62	7.42	47.51
	2.83	1.98	0.07	0.29	6.88	32.16
	2.39	2.13	0.07	0.27	7.88	50.67
	2.52	1.58	0.04	0.28	5.57	38.89
	4.49	1.78	0.09	0.46	9.62	59.72
	2.91	2.20	0.05	0.23	6.46	35.85
WBT	2.79	1.86	0.12	0.38	5.25	38.15
	2.96	1.46	0.03	0.31	4.78	22.79
	3.49	2.86	0.08	0.31	6.90	43.64
	2.72	1.57	0.03	0.28	7.49	55.68
	2.59	3.39	0.07	0.27	4.68	27.28
	2.76	2.42	0.13	0.27	7.10	47.77
	2.84	2.78	0.20	0.28	7.49	55.68
	3.06	2.40	0.08	0.29	8.33	54.32
WET	2.99	1.44	0.04	0.48	4.84	31.52
	3.22	2.16	0.02	0.23	3.62	12.32
	2.75	1.87	0.03	0.20	4.71	22.18
	2.10	1.42	0.02	0.24	3.63	12.65
	3.03	1.77	0.02	0.28	4.91	21.35
	3.33	1.57	0.02	0.22	3.96	15.22
	2.77	1.48	0.02	0.23	2.66	10.43
	3.16	1.45	0.03	0.22	2.35	9.12
	2.67	1.63	0.04	0.22	4.37	19.29
	2.74	1.26	0.03	0.18	5.56	18.04
	2.95	1.44	0.03	0.28	3.56	14.69

Table S4 Metals content (mg Kg^{-1}) in TBT infusions

Types	Cr	Ni	Cd	Pb	Cu	Zn
WPT	26.81	32.88	0.09	2.71	52.80	186.70
	32.12	34.76	0.04	2.88	23.47	172.27
	34.48	46.83	0.07	2.64	28.43	211.60
	24.62	16.14	0.04	1.92	30.03	122.20
	17.91	19.74	0.05	4.24	37.50	162.07
	35.13	52.95	0.03	2.45	24.97	132.37
	23.62	10.90	0.03	2.22	34.73	130.07
	25.43	14.16	0.04	2.39	44.23	198.73
WBT	25.38	6.65	0.01	1.14	10.13	103.43
	20.79	10.79	0.01	2.59	14.20	71.70
	26.09	16.02	0.05	2.11	24.57	107.30
	26.08	13.25	0.03	2.58	28.57	230.93
	25.44	19.64	0.04	2.20	26.97	140.80
	27.18	20.77	0.03	3.05	20.40	72.57
	25.62	23.76	0.02	2.17	28.57	230.93
	29.23	19.24	0.03	2.29	21.77	68.20
WET	26.28	33.64	0.02	2.52	13.73	91.40
	27.19	17.30	0.01	3.55	18.00	63.27
	18.14	36.18	0.02	2.65	13.17	58.73
	25.83	7.86	0.00	2.40	8.33	40.13
	14.95	13.96	0.01	1.87	10.73	47.70
	25.03	8.31	0.00	2.49	10.47	28.33
	22.98	18.07	0.01	2.11	11.27	30.97
	11.30	16.30	0.02	1.64	15.97	46.30
	25.81	7.77	0.01	2.27	4.23	26.53
	24.58	8.80	0.01	2.22	10.23	33.63
	17.58	11.23	0.02	2.36	20.03	41.00

Table S5 EDI of metals in TBT

Types	Cr	Ni	Cd	Pb	Cu	Zn
WPT	4.60E-04	5.64E-04	1.56E-06	4.64E-05	9.05E-04	3.20E-03
	5.51E-04	5.96E-04	6.43E-07	4.93E-05	4.02E-04	2.95E-03
	5.91E-04	8.03E-04	1.21E-06	4.52E-05	4.87E-04	3.63E-03
	4.22E-04	2.77E-04	7.43E-07	3.29E-05	5.15E-04	2.09E-03
	3.07E-04	3.38E-04	8.03E-07	7.27E-05	6.43E-04	2.78E-03
	6.02E-04	9.08E-04	5.71E-07	4.19E-05	4.28E-04	2.27E-03

	4.05E-04	1.87E-04	5.03E-07	3.80E-05	5.95E-04	2.23E-03
	4.36E-04	2.43E-04	6.37E-07	4.10E-05	7.58E-04	3.41E-03
	4.35E-04	1.14E-04	2.23E-07	1.96E-05	1.74E-04	1.77E-03
	3.56E-04	1.85E-04	2.09E-07	4.44E-05	2.43E-04	1.23E-03
	4.47E-04	2.75E-04	7.97E-07	3.61E-05	4.21E-04	1.84E-03
	4.47E-04	2.27E-04	4.57E-07	4.43E-05	4.90E-04	3.96E-03
	4.36E-04	3.37E-04	6.29E-07	3.77E-05	4.62E-04	2.41E-03
WBT	4.66E-04	3.56E-04	4.80E-07	5.23E-05	3.50E-04	1.24E-03
	4.39E-04	4.07E-04	4.25E-07	3.73E-05	4.90E-04	3.96E-03
	5.01E-04	3.30E-04	4.86E-07	3.93E-05	3.73E-04	1.17E-03
	4.51E-04	5.77E-04	2.97E-07	4.31E-05	2.35E-04	1.57E-03
	4.66E-04	2.96E-04	2.34E-07	6.09E-05	3.09E-04	1.08E-03
	3.11E-04	6.20E-04	3.94E-07	4.54E-05	2.26E-04	1.01E-03
	4.43E-04	1.35E-04	5.71E-08	4.12E-05	1.43E-04	6.88E-04
	2.56E-04	2.39E-04	1.06E-07	3.21E-05	1.84E-04	8.18E-04
WET	4.29E-04	1.43E-04	3.14E-08	4.27E-05	1.79E-04	4.86E-04
	3.94E-04	3.10E-04	1.06E-07	3.62E-05	1.93E-04	5.31E-04
	1.94E-04	2.79E-04	3.03E-07	2.81E-05	2.74E-04	7.94E-04
	4.42E-04	1.33E-04	2.06E-07	3.89E-05	7.26E-05	4.55E-04
	4.21E-04	1.51E-04	1.09E-07	3.81E-05	1.75E-04	5.77E-04
	3.01E-04	1.92E-04	2.71E-07	4.04E-05	3.43E-04	7.03E-04

Table S6 THQ of metals in TBT

Types	Cr	Ni	Cd	Pb	Cu	Zn
	1.53E-01	2.82E-02	1.56E-01	1.29E-02	2.26E-02	1.07E-02
	1.84E-01	2.98E-02	6.43E-02	1.37E-02	1.01E-02	9.84E-03
	1.97E-01	4.01E-02	1.21E-01	1.26E-02	1.22E-02	1.21E-02
	1.41E-01	1.38E-02	7.43E-02	9.15E-03	1.29E-02	6.98E-03
WPT	1.02E-01	1.69E-02	8.03E-02	2.02E-02	1.61E-02	9.26E-03
	2.01E-01	4.54E-02	5.71E-02	1.16E-02	1.07E-02	7.56E-03
	1.35E-01	9.34E-03	5.03E-02	1.06E-02	1.49E-02	7.43E-03
	1.45E-01	1.21E-02	6.37E-02	1.14E-02	1.90E-02	1.14E-02
	1.45E-01	5.70E-03	2.23E-02	5.45E-03	4.34E-03	5.91E-03
	1.19E-01	9.24E-03	2.09E-02	1.23E-02	6.09E-03	4.10E-03
	1.49E-01	1.37E-02	7.97E-02	1.00E-02	1.05E-02	6.13E-03
WBT	1.49E-01	1.14E-02	4.57E-02	1.23E-02	1.22E-02	1.32E-02
	1.45E-01	1.68E-02	6.29E-02	1.05E-02	1.16E-02	8.05E-03

WET	1.55E-01	1.78E-02	4.80E-02	1.45E-02	8.74E-03	4.15E-03
	1.46E-01	2.04E-02	4.25E-02	1.04E-02	1.22E-02	1.32E-02
	1.67E-01	1.65E-02	4.86E-02	1.09E-02	9.33E-03	3.90E-03
	1.50E-01	2.88E-02	2.97E-02	1.20E-02	5.89E-03	5.22E-03
	1.55E-01	1.48E-02	2.34E-02	1.69E-02	7.71E-03	3.62E-03
	1.04E-01	3.10E-02	3.94E-02	1.26E-02	5.64E-03	3.36E-03
	1.48E-01	6.74E-03	5.71E-03	1.14E-02	3.57E-03	2.29E-03
	8.54E-02	1.20E-02	1.06E-02	8.92E-03	4.60E-03	2.73E-03
	1.43E-01	7.13E-03	3.14E-03	1.19E-02	4.49E-03	1.62E-03
	1.31E-01	1.55E-02	1.06E-02	1.01E-02	4.83E-03	1.77E-03
	6.46E-02	1.40E-02	3.03E-02	7.81E-03	6.84E-03	2.65E-03
	1.47E-01	6.66E-03	2.06E-02	1.08E-02	1.81E-03	1.52E-03
	1.40E-01	7.54E-03	1.09E-02	1.06E-02	4.39E-03	1.92E-03
	1.00E-01	9.62E-03	2.71E-02	1.12E-02	8.59E-03	2.34E-03

Table S7 HI of metals in TBT

WPT	Numbers	WBT	Numbers	WET
3.84E-01	11	2.69E-01	18	2.22E-01
3.11E-01	12	2.44E-01	19	1.96E-01
3.95E-01	13	2.55E-01	20	1.77E-01
2.58E-01	14	2.49E-01	21	1.24E-01
2.45E-01	15	2.45E-01	22	1.71E-01
3.33E-01	16	2.56E-01	23	1.74E-01
2.27E-01	17	2.32E-01	24	1.26E-01
2.63E-01	-	-	25	1.89E-01
1.89E-01	-	-	26	1.76E-01
1.71E-01	-	-	27	1.59E-01

Table S8 CR of metals in TBT

Types	WPT	BT	WET
Cr	1.61E-03	1.57E-03	1.63E-03
	1.93E-03	1.56E-03	1.09E-03
	2.07E-03	1.53E-03	1.55E-03
	1.48E-03	1.63E-03	8.97E-04
	1.07E-03	1.54E-03	1.50E-03
	2.11E-03	1.75E-03	1.38E-03
	1.42E-03	1.58E-03	6.78E-04
	1.53E-03	-	1.55E-03

	1.52E-03	-	1.47E-03
	1.25E-03	-	1.05E-03
	9.53E-06	4.86E-06	1.43E-06
	3.92E-06	2.79E-06	2.41E-06
	7.37E-06	3.83E-06	3.49E-07
	4.53E-06	2.93E-06	6.45E-07
Cd	4.90E-06	2.59E-06	1.92E-07
	3.49E-06	2.96E-06	6.45E-07
	3.07E-06	1.81E-06	1.85E-06
	3.89E-06	-	1.25E-06
	1.36E-06	-	6.62E-07
	1.27E-06	-	1.66E-06

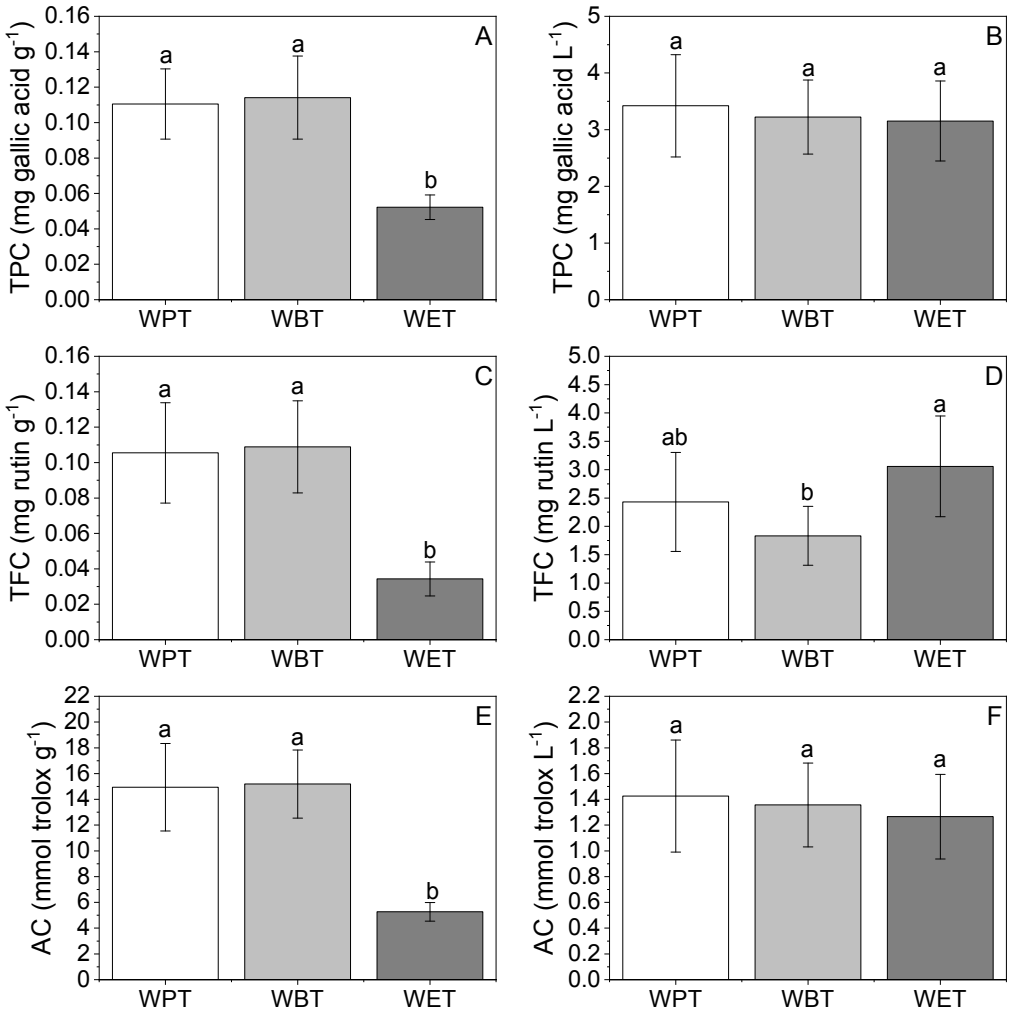


Figure S1 TPC, TFC and AC of TBT methanol extracts and infusions. A, C, E represented the methanol extracts of three types of TBT ; B, D, F represented the infusions of three types of TBT. The bars marked with different lowercase letters indicated that the difference was significant at the 0.05 level.

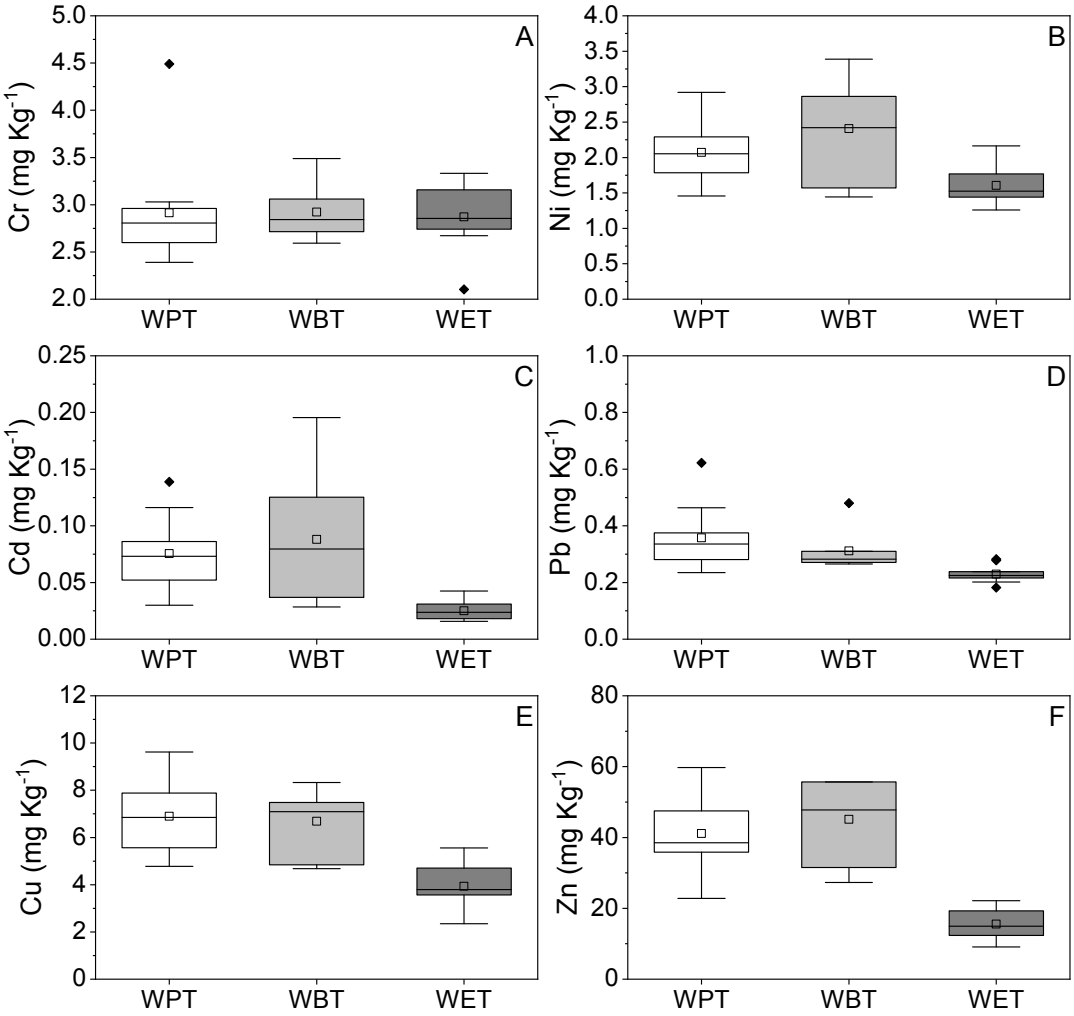


Figure S2 Metal contents in TBT. A, B, C, D, E, F represented the concentration of Cr, Ni, Cd, Pb, Cu, Zn of three types of TBT respectively. The black solid diamond in the figure represented the outlier.

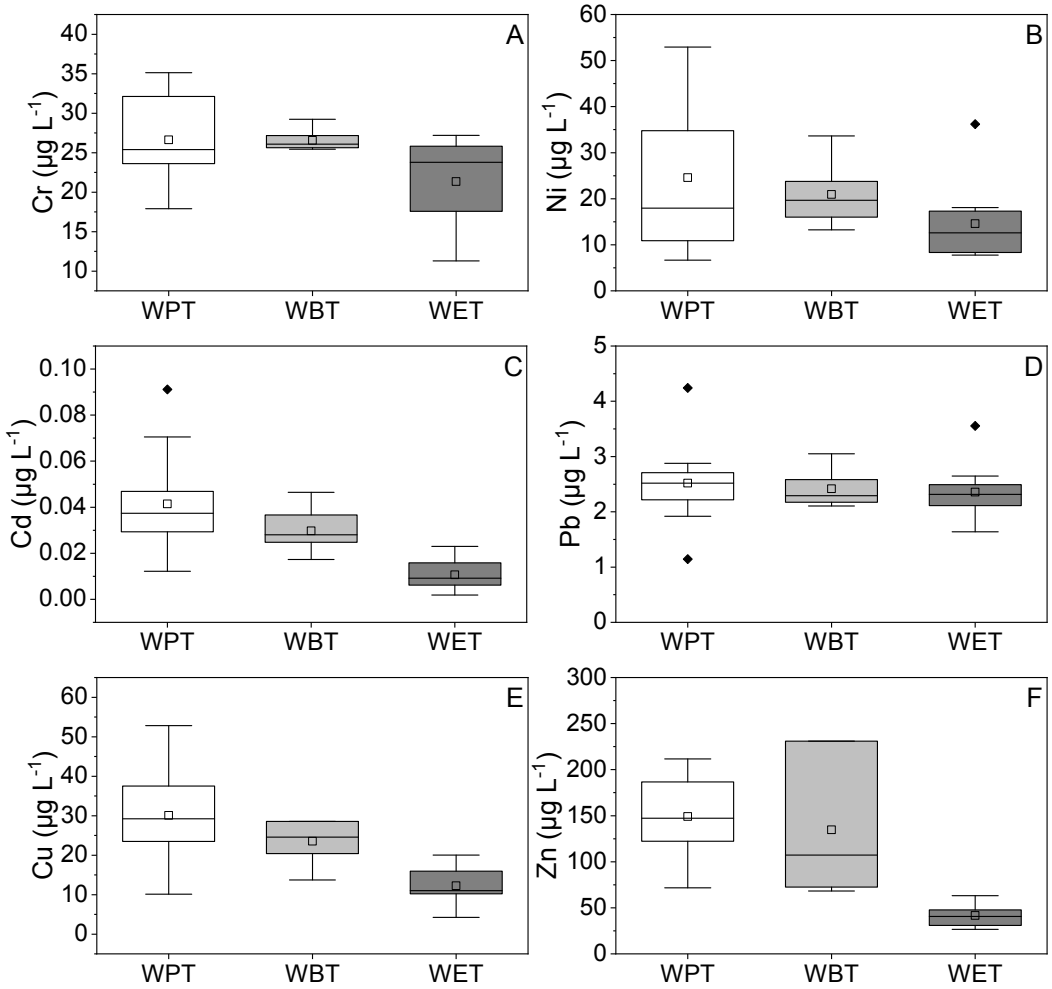


Figure S3 Metal contents in TBT infusions. A, B, C, D, E, F represented the concentration of Cr, Ni, Cd, Pb, Cu, Zn of three types of TBT infusions respectively. The black solid diamond in the figure represented the outlier.

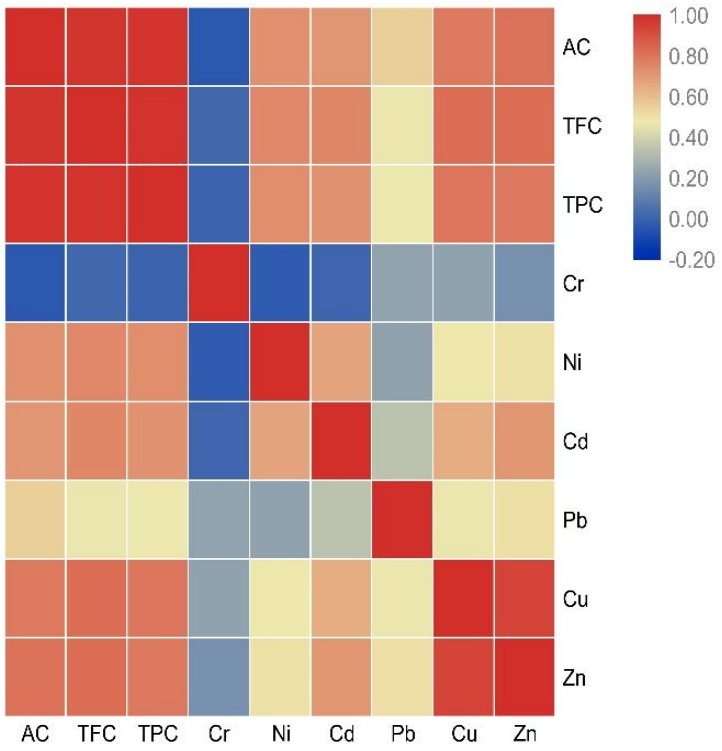


Figure S4 Correlation among TFC, TPC, AC and heavy metal contents in TBT

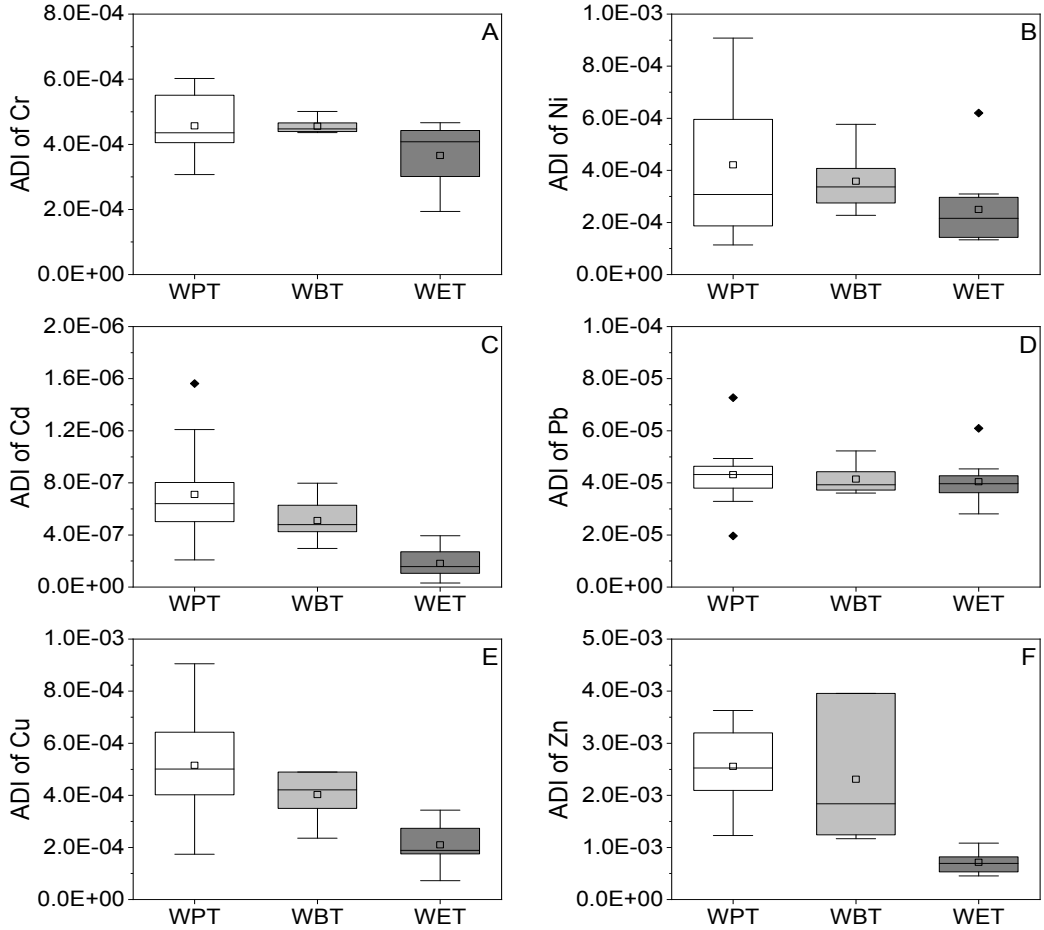


Figure S5 ADI values of metals in TBT. A, B, C, D, E, F represented the ADI of Cr, Ni, Cd, Pb, Cu, Zn of three types of TBT respectively. The black solid diamond in the figure represented the outlier.

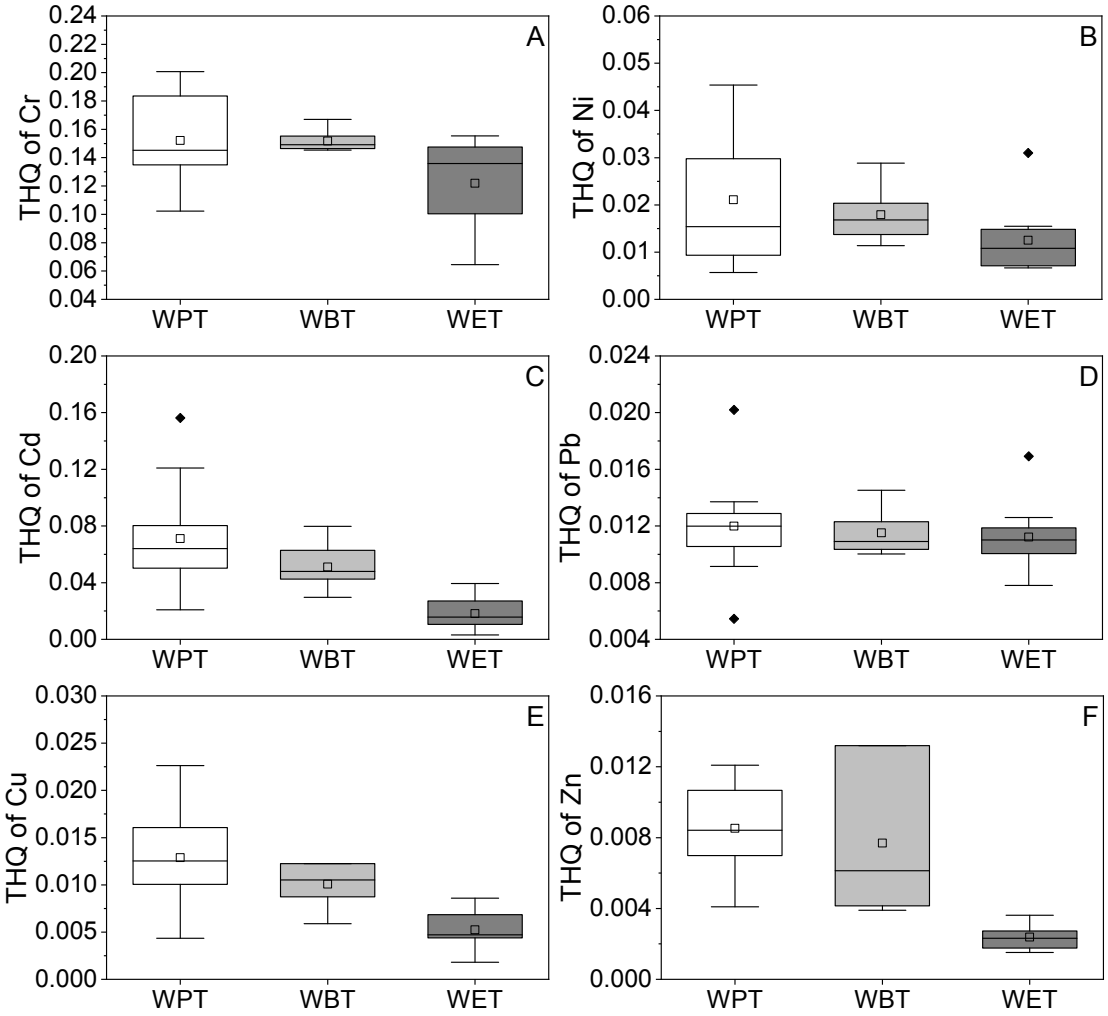


Figure S6 THQ value of heavy metals in TBT. A, B, C, D, E, F represented the THQ of Cr, Ni, Cd, Pb, Cu, Zn of three types of TBT respectively. The black solid diamond in the figure represented the outlier.

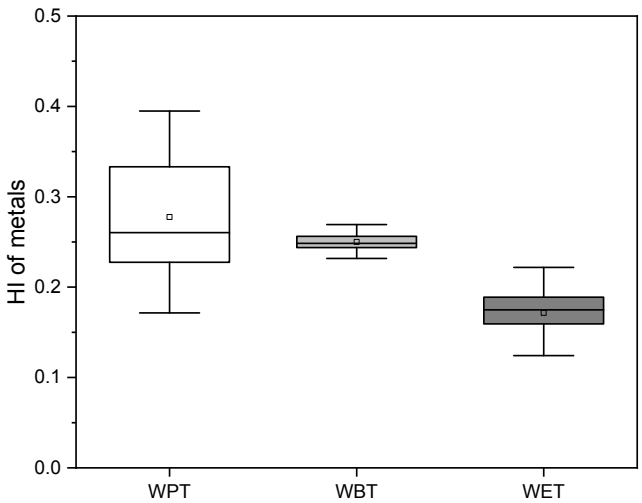


Figure S7 HI value of metals in TBT

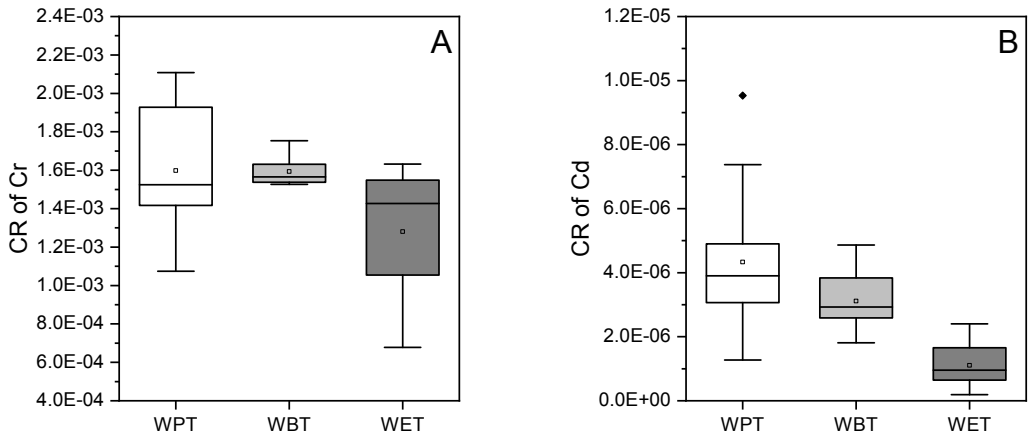
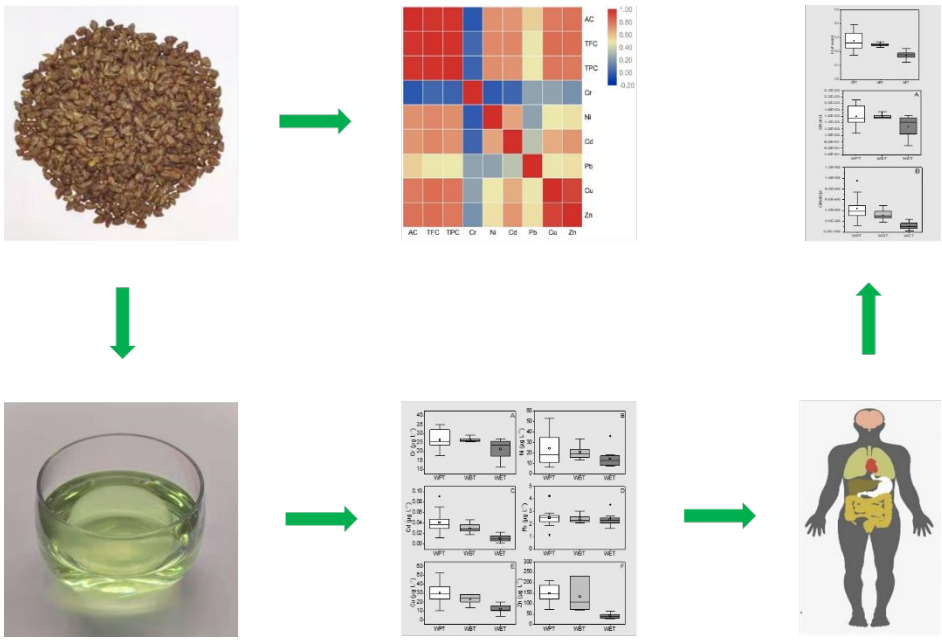


Figure S8 CR values of Cr and Cd in TBT. A and B represented the CR of Cr and Cd of three types of TBT respectively. The black solid diamond in the figure represented the outlier.



Scheme S1 Metal contents and their health risk assessment of Tartary buckwheat teas