

Table S2. Geographic origins of apple fruit samples collected from major production regions in China (2023).

ID	Sample Name	Province	City	Longitude (E)	Latitude (N)
1	Shanxi2023-1	Shanxi	Jinzhong	112°75'	37°73'
2	Shanxi2023-2	Shanxi	Jinzhong	112°40'	37°39'
3	Shanxi2023-3	Shanxi	Yuncheng	110°83'	35°68'
4	Shanxi2023-4	Shanxi	Yuncheng	110°73'	35°38'
5	Shanxi2023-5	Shanxi	Yuncheng	111°23'	35°16'
6	Shanxi2023-6	Shanxi	Linfen	110°67'	36°82'
7	Shaanxi2023-1	Shaanxi	Xianyang	108°51'	34°45'
8	Shaanxi2023-2	Shaanxi	Xianyang	108°38'	34°53'
9	Shaanxi2023-3	Shaanxi	Xianyang	108°86'	34°67'
10	Shaanxi2023-4	Shaanxi	Xianyang	108°76'	34°65'
11	Shaanxi2023-5	Shaanxi	Weinan	109°86'	35°29'
12	Shaanxi2023-6	Shaanxi	Weinan	110°09'	35°46'
13	Shaanxi2023-7	Shaanxi	Weinan	110°28'	35°37'
14	Shaanxi2023-8	Shaanxi	Weinan	109°86'	35°66'
15	Shaanxi2023-9	Shaanxi	Baoji	107°77'	34°81'
16	Shaanxi2023-10	Shaanxi	Baoji	107°77'	34°59'
17	Shaanxi2023-11	Shaanxi	Baoji	107°89'	34°87'
18	Shaanxi2023-12	Shaanxi	Yanan	109°01'	36°67'
19	Shaanxi2023-13	Shaanxi	Yanan	108°84'	36°91'
20	Shaanxi2023-14	Shaanxi	Yanan	109°52'	36°85'
21	Shaanxi2023-15	Shaanxi	Yanan	108°67'	36°95'
22	Shaanxi2023-16	Shaanxi	Tongchuan	108°84'	34°76'
23	Shaanxi2023-17	Shaanxi	Tongchuan	108°74'	34°71'
24	Shaanxi2023-18	Shaanxi	Tongchuan	108°76'	34°56'
25	Gansu2023-1	Gansu	Pingliang	107°02'	35°33'
26	Gansu2023-2	Gansu	Pingliang	107°34'	35°44'
27	Gansu2023-3	Gansu	Tianshui	105°79'	34°57'
28	Gansu2023-4	Gansu	Tianshui	105°56'	34°57'
29	Gansu2023-5	Gansu	Qingyang	107°39'	35°20'
30	Gansu2023-6	Gansu	Qingyang	107°54'	35°57'
31	Gansu2023-7	Gansu	Qingyang	107°38'	35°59'
32	Gansu2023-8	Gansu	Qingyang	107°67'	35°48'
33	Gansu2023-9	Gansu	Pingliang	106°78'	35°56'
34	Gansu2023-10	Gansu	Pingliang	105°33'	35°46'

35	Liaoning2023-1	Liaoning	Huludao	120°67'	40°78'
36	Liaoning2023-2	Liaoning	Huludao	118°76'	40°56'
37	Liaoning2023-3	Liaoning	Huludao	120°87'	40°80'
38	Liaoning2023-4	Liaoning	Jinzhou	120°75'	41°66'
39	Liaoning2023-5	Liaoning	Dalian	122°33'	39°67'
40	Liaoning2023-6	Liaoning	Dalian	122°34'	39°56'
41	Liaoning2023-7	Liaoning	Dalian	121°46'	39°88'
42	Liaoning2023-8	Liaoning	Dalian	121°67'	39°79'
43	Hebei2023-1	Hebei	Qinhuangdao	118°58'	39°76'
44	Hebei2023-2	Hebei	Qinhuangdao	119°49'	40°23'
45	Hebei2023-3	Hebei	Baoding	114°78'	38°43'
46	Hebei2023-4	Hebei	Chengde	118°65'	40°67'
47	Shandong2023-1	Shandong	Linyi	118°08'	35°39'
48	Shandong2023-2	Shandong	Linyi	118°29'	35°82'
49	Shandong2023-3	Shandong	Linyi	117°49'	35°70'
50	Shandong2023-4	Shandong	Linyi	118°33'	35°46'
