Supplementary Material

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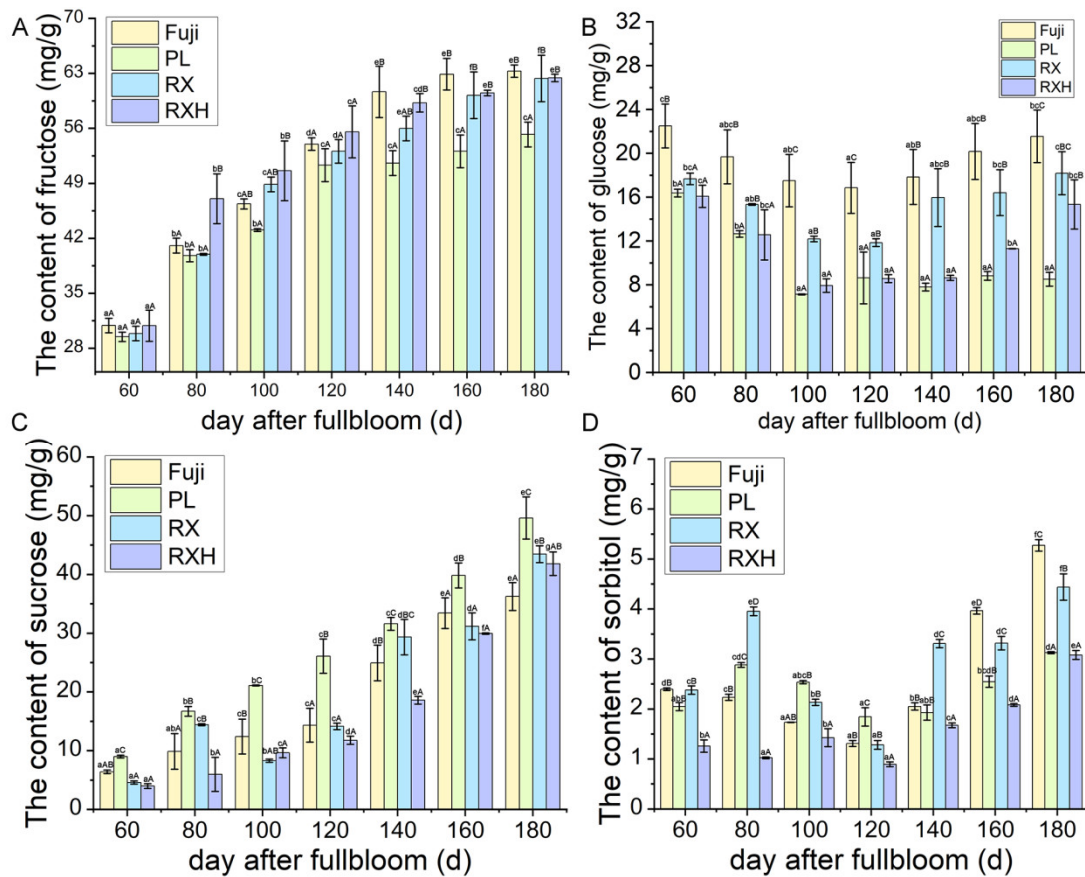
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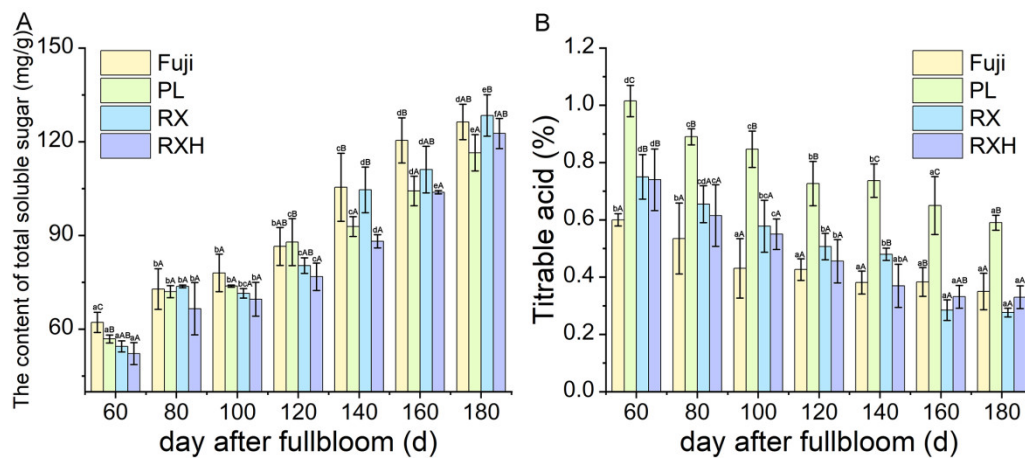
Table S1. The primers used for qRT-PCR

Primer name	Forward primer	Reverse primer
MdPL1-qPCR	CTTACGGGGGAGGAGGGTG	TGGGCAATGTGCTGGAAGA
MdPL2-qPCR	CATCCTGTAAACCCTAAACCCG	CTACCACCAAAAATGGAGACCC
MdXTH-qPCR	ACAGTCTGGCTTGATAGCACCAC	AACACTTTTCCTAGCATACCTCC
MdPG-qPCR	CGACTTCGCCACCACCGT	CCGAGCCCAAAGCCATAAA
MdACO1-qPCR	GACTTGGACTGGGAAAGCAC	GGAGGGTAGTTGCTGACCTT
MdACS1-qPCR	AGCCTCTCTAAGGATCTTGG	TGGTTCTCGGCTATGTAGTTCTT
MdActin-qPCR	CTTCAATGTGCCTGCCATGTAT	AATTTCCCGTTCAGCAGTAGTG
Mdβ-gal1-qPCR	GGGAGTTCTTCTGTTGAATGGG	TTCCGGCATAAGAACAATCG
Mdβ-gal2-qPCR	CGAAATACCCTGTTAGAGTGAGC	CGATGAATGACTGCCAAGGAA

Table S2. The genebank accession numbers used for RT-qPCR

MdPL1	MD16G1070600
MdPL2	MD16G1106400
MdPG	MD16G1092600
MdXTH	MD12G1109400
MdACO1	MD10G1328100
MdACS1	MD15G1302200
Mdβ-gal1	MD02G1079200
Mdβ-gal2	MD15G1206800

Figure S1. The variation of sugar content in 'Ruixue' and 'Ruixianghong' and their parents apples during fruit development. (**A**) Fruotose (**B**) Glucose (**C**) Sucrose (**D**) Sorbitol DAFB: days after full bloom. Different lowercase letters in columns denote significant differences between sampling dates for each cultivar by Duncan's multiple range test (p < 0.05). Different capital letters in columns denote significant differences by Duncan's multiple range test (p < 0.05) among different cultivars. Different colors represent different cultivars.

Figure S2. The variation of total soluble sugar and titrable acid content in 'Ruixue' and 'Ruixianghong' and their parents apples during fruit development. Different lowercase letters in columns denote significant differences between sampling dates for each cultivar by

Duncan's multiple range test (p < 0.05). Different capital letters in columns denote significant differences by Duncan's multiple range test (p < 0.05) among different cultivars. Different colors represent different cultivars.