

Table S1 Time of bud breaking in six mulberry cultivars and estimation of their bud chilling requirement by Utah model in Wuhan

Accession name	Bud development (02: Buds elongating and burst)		Chilling requirement (CUs)
	2021	2022	
ZJ	1/26	1/24	1156
ZZB	2/18	3/5	1645.25
XJ-BS	2/20	3/5	1645.25
TW-CGS	2/13	2/8	1440
XF-CSS	3/24	3/22	1865.5
CS-XZ	3/17	3/17	1789.75

Table S2 Primary phenological growth stages for six mulberry cultivars in different provinces

Accession name	Flowering stage (65: Full flowering)				Fruit maturity period (87: Fruit ripe for picking)			
	Shiyan, Hubei	Wuhan, Hubei	Nanchong, Sichuan	Nanning, Guangxi	Shiyan, Hubei	Wuhan, Hubei	Nanchong, Sichuan	Nanning, Guangxi
ZJ	2022/3/24	2021/3/14 2022/3/15			2022/5/6	2021/4/25 2022/4/28		
ZZB	2022/4/6	2021/3/22 2022/3/24	2022/3/26	2022/2/16	2022/5/15	2021/4/28 2022/4/29	2022/4/26	2022/4/15
XJ-BS		2021/3/25 2022/3/27				2021/5/2 2022/5/1		
TW-CGS	2022/3/24	2021/3/15 2022/3/14	2022/3/23	2022/2/4	2022/4/29	2021/4/24 2022/4/22	2022/4/22	2022/4/5
XF-CSS		2021/4/15 2022/4/10				2021/5/22 2022/5/17		
CS-XZ		2021/4/13 2022/4/7						

Note: Shiyan, 110.803566E, 32.642568N; Wuhan, 114.334946E, 30.488076N; Nanning, 108.235117E, 22.848434N; Nanchong, 106.096713E, 30.798116N.

Table S3 The phenological data of stage 0-9 for six mulberry cultivars

BBCH code		ZJ	TW-CGS	ZZB	XJ-BS	CS-XZ	XF-CSS
Principal growth stage 0: bud development	01	2021/1/25	2021/2/12	2021/2/17	2021/2/19	2021/2/16	2021/3/23
	02	2021/1/26	2021/2/13	2021/2/18	2021/2/20	2021/3/17	2021/3/24
	03	2021/2/16	2021/2/19	2021/2/23	2021/3/4	2021/3/22	2021/3/29
	07	2021/2/17	2021/2/20	2021/2/24	2021/3/7	2021/3/24	2021/4/1
	09	2021/2/18	2021/2/21	2021/3/4	2021/3/9	2021/3/26	2021/4/2
Principal growth stage 1: leaf development	10	2021/2/19	2021/2/22	2021/3/5	2021/3/10	2021/3/27	2021/4/2
	11	2021/2/20	2021/2/23	2021/3/9	2021/3/14	2021/4/1	2021/4/4
	15	2021/2/24	2021/2/24	2021/3/12	2021/3/17	2021/4/5	2021/4/8
	17	2021/2/26	2021/2/27	2021/3/14	2021/3/20	2021/4/7	2021/4/12
	19	2021/3/2	2021/3/9	2021/3/17	2021/3/22	2021/4/8	2021/4/13
Principal growth stage 3: shoot development	31	2021/2/21	2021/3/5	2021/3/14	2021/3/17	2021/3/30	2021/4/10
	33	2021/4/14	2021/4/25	2021/4/14	2021/4/14	2021/4/10	2021/4/24
	34	2021/5/2	2021/5/18	2021/5/4	2021/5/7	2021/4/24	2021/5/7
	35	2021/5/18	2021/6/18	2021/5/20	2021/5/22	2021/5/9	2021/5/12
Principal growth stage 5: inflorescence development	51	2021/2/20	2021/3/5	2021/3/4	2021/3/14	2021/3/28	2021/4/4
	53	2021/2/26	2021/3/9	2021/3/9	2021/3/17	2021/3/31	2021/4/6
	55	2021/3/1	2021/3/11	2021/3/12	2021/3/20	2021/4/4	2021/4/9
	57	2021/3/2	2021/3/12	2021/3/13	2021/3/22	2021/4/6	2021/4/10
	59	2021/3/4	2021/3/14	2021/3/14	2021/3/24	2021/4/8	2021/4/12
Principal growth stage 6: flowering	61	2021/3/9	2021/3/11	2021/3/13	2021/3/21	2021/4/8	2021/4/11
	63	2021/3/12	2021/3/12	2021/3/20	2021/3/23	2021/4/10	2021/4/13
	65	2021/3/14	2021/3/15	2021/3/22	2021/3/25	2021/4/13	2021/4/15
	67	2021/3/17	2021/18	2021/3/25	2021/3/29	2021/4/15	2021/4/18
	69	2021/3/21	2021/3/22	2021/3/29	2021/4/4	2021/4/18	2021/4/22
Principal growth stage 7: fruit development	72	2021/3/26	2021/3/29	2021/4/1	2021/4/7		2021/4/24
	73	2021/4/1	2021/4/16	2021/4/13	2021/4/20		2021/4/28
	75	2021/4/19	2021/4/21	2021/4/26	2021/4/24		2021/5/7
	76	2021/4/21	2021/4/23	2021/4/30	2021/26		2021/5/12
	77	2021/4/25	2021/4/24	2021/5/1	2021/5/2		2021/5/22
	79	2021/4/27	2021/4/26	2021/5/2	2021/5/4		2021/5/25
Principal growth stage 8: maturity of fruit	81	2021/4/14	2021/4/16	2021/4/22	2021/4/24		2021/5/3
	83	2021/4/19	2021/4/21	2021/4/26	2021/4/24		2021/5/7
	85	2021/4/21	2021/4/23	2021/4/30	2021/4/26		2021/5/12
	87	2021/4/25	2021/4/24	2021/4/28	2021/5/2		2021/5/22
Principal growth stage 9: senescence and beginning of the rest period	91	2021/10/8	2021/10/28	2021/11/8	2021/10/12	2021/9/28	2021/10/1
	93	2021/10/28	2021/11/10	2021/11/15	2021/10/29	2021/11/5	2021/10/20
	95	2021/11/14	2021/12/2	2021/12/5	2021/11/14	2021/11/20	2021/11/04
	97	2022/1/16	2022/2/8	2022/3/3	2022/3/3	2022/3/15	2022/3/16

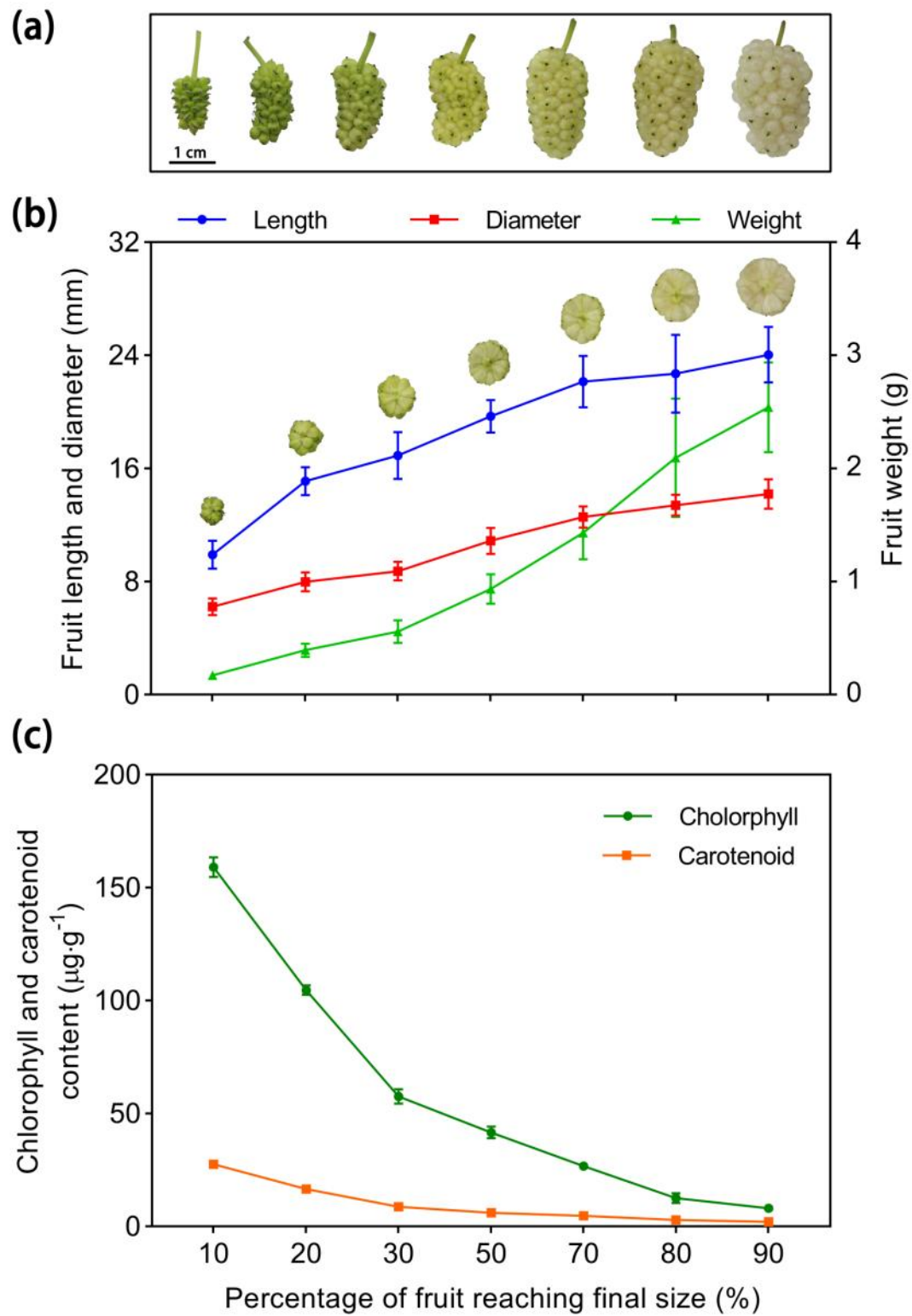


Figure S1. Fruit photographs (a), size (b), and pigment content (c) in ‘ZZB’ mulberry at different developmental stages (stages 7 and 8).

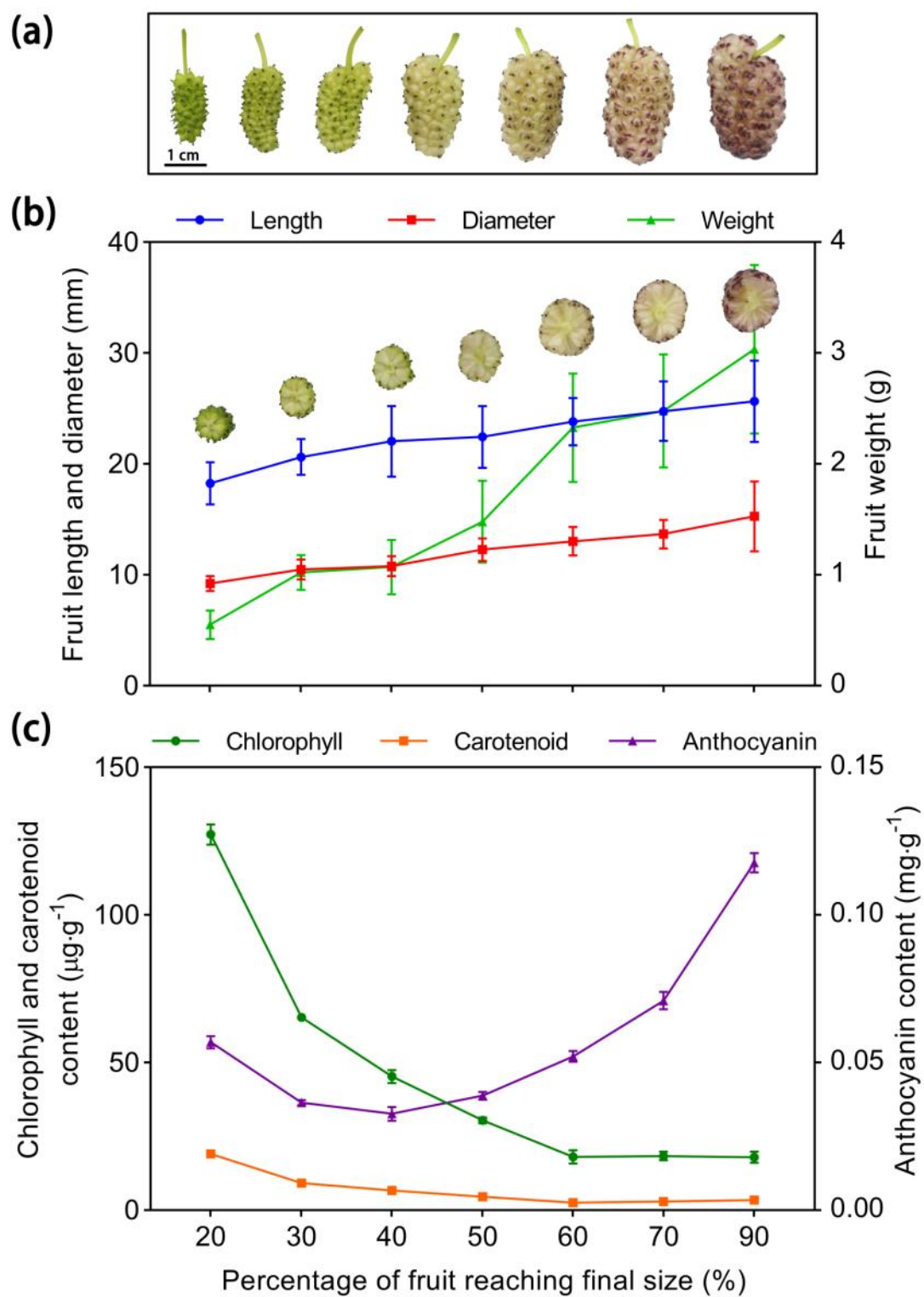


Figure S2. Fruit photographs (a), size (b), and pigment content (c) in ‘XJ-BS’ mulberry at different developmental stages (stages 7 and 8).

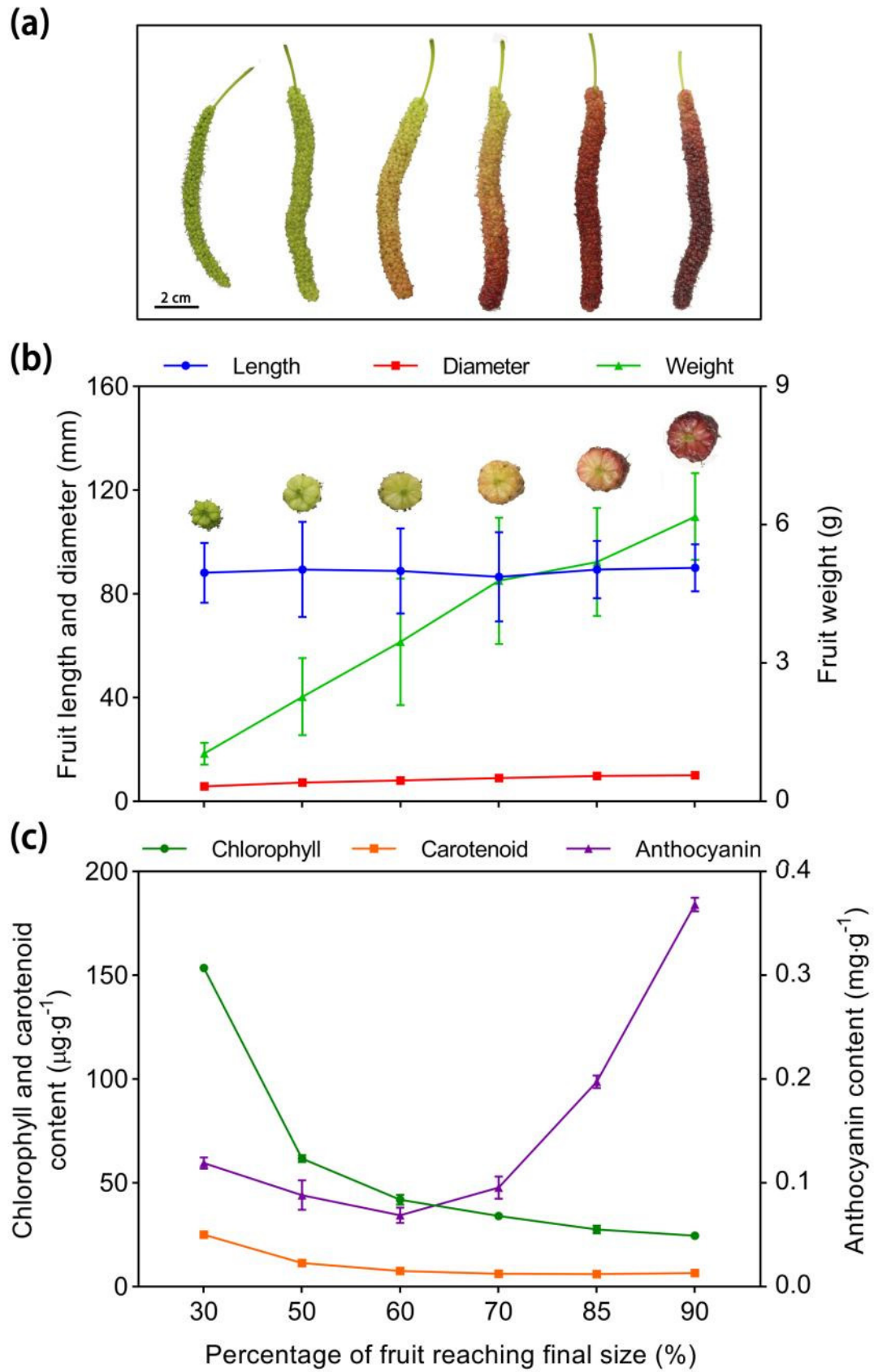


Figure S3. Fruit photographs (a), size (b), and pigment content (c) in ‘TW-CGS’ mulberry at different developmental stages (stages 7 and 8).