

Supplementary Materials

Table S1. The sequence length of all samples

Samples of chilling storage	Sequences	Samples of supercooling storage	Sequences	Samples of superchilling storage	Sequences	Samples of sub-freezing storage	Sequences
A1_1d	54479	B1_1d	46644	C1_1d	44695	D1_1d	54195
A2_1d	59583	B2_1d	46942	C2_1d	54645	D2_1d	41773
A3_1d	50898	B3_1d	43296	C3_1d	45297	D3_1d	47504
A4_1d	49284	B4_1d	39566	C4_1d	47350	D4_1d	46189
A5_1d	52072	B5_1d	47863	C5_1d	35342	D5_1d	48209
A6_1d	47549	B6_1d	42902	C6_1d	41038	D6_1d	41035
A1_7d	50793	B1_7d	52995	C1_7d	50840	D1_7d	40948
A2_7d	47903	B2_7d	45946	C2_7d	43090	D2_7d	43617
A3_7d	47559	B3_7d	47355	C3_7d	47475	D3_7d	44243
A4_7d	48965	B4_7d	41792	C4_7d	45275	D4_7d	29783
A5_7d	43582	B5_7d	38713	C5_7d	45862	D5_7d	36011
A6_7d	46349	B6_7d	43487	C6_7d	50194	D6_7d	39403
A1_14d	45837	B1_14d	35427	C1_14d	51154	D1_14d	44527
A2_14d	59934	B2_14d	48727	C2_14d	40697	D2_14d	43615
A3_14d	45118	B3_14d	39186	C3_14d	38060	D3_14d	46507
A4_14d	41229	B4_14d	45199	C4_14d	34942	D4_14d	42908
A5_14d	42983	B5_14d	42750	C5_14d	38603	D5_14d	48040
A6_14d	40456	B6_14d	44437	C6_14d	39876	D6_14d	41897
–	–	B1_28d	43867	C1_28d	43316	D1_28d	38311
–	–	B2_28d	46994	C2_28d	52650	D2_28d	38747
–	–	B3_28d	40909	C3_28d	57821	D3_28d	43290
–	–	B4_28d	46064	C4_28d	39583	D4_28d	43950
–	–	B5_28d	45585	C5_28d	47898	D5_28d	41682
–	–	B6_28d	38378	C6_28d	47344	D6_28d	39328

Table S2. The coverage of all samples

Treatment	Chilling storage			Supercooling storage				Superchilling storage				Sub-freezing storage			
	1 d	7 d	14 d	1 d	7 d	14 d	28 d	1 d	7 d	14 d	28 d	1 d	7 d	14 d	28 d
Coverage	0.9927 ±0.0025	0.99568 ±0.0030	0.9996 ±0.00014	0.99355 ±0.0026	0.99362 ±0.0017	0.99291 ±0.0030	0.9991 ±0.00037	0.99267 ±0.0011	0.993 ±0.0017	0.9929 ±0.0018	0.9937 ±0.0026	0.995 ±0.0015	0.99138 ±0.0026	0.99079 ±0.0026	0.99293 ±0.0031

Table S3. The change of sobs, chao and shannon index at day 1, day 14, and day 28

Treatment	Chilling storage		Supercooling storage		Superchilling storage		Sub-freezing storage	
	1 d	14 d	1 d	28 d	1 d	28 d	1 d	28 d
Sobs	399.6±209.14	20.50±6.75	340.5±106.82	29.50±7.66	271.50±60.41	393.3±103.91	371.17±67.01	447.5±147.28
Chao1	503.5±221.05	27.81±10.29	446.1±136.42	62.78±31.90	431.36±63.18	481.8±129.22	434.70±96.48	538.4±166.64
Shannon	3.57±0.88	1.21±0.12	3.25±0.83	1.09±0.35	2.49±0.88	3.77±0.62	3.79±0.47	3.87±0.80