

Appendix A: The *P*-value of two-way ANOVA for effect of water treatments (W), N levels (N) and their interactions (W×N) on growth parameters of different cultivars

Parameters	Cultivar	W	N	W×N
SH	‘Qinguan’	0.000	0.000	0.580
	‘Pink Lady’	0.000	0.013	0.890
	‘Honeycrisp’	0.000	0.000	0.198
	‘Golden Delicious’	0.000	0.000	0.841
	‘Fuji’	0.000	0.000	0.000
	‘Jonagold’	0.000	0.002	0.038
SD	‘Qinguan’	0.000	0.004	0.418
	‘Pink Lady’	0.000	0.001	0.793
	‘Honeycrisp’	0.000	0.000	0.498
	‘Golden Delicious’	0.000	0.000	0.185
	‘Fuji’	0.000	0.000	0.783
	‘Jonagold’	0.000	0.000	0.000
FW	‘Qinguan’	0.000	0.003	0.641
	‘Pink Lady’	0.000	0.001	0.405
	‘Honeycrisp’	0.000	0.000	0.180
	‘Golden Delicious’	0.000	0.001	0.442
	‘Fuji’	0.000	0.001	0.340
	‘Jonagold’	0.000	0.000	0.031
DW	‘Qinguan’	0.000	0.002	0.085
	‘Pink Lady’	0.000	0.000	0.008
	‘Honeycrisp’	0.000	0.001	0.101
	‘Golden Delicious’	0.000	0.127	0.547
	‘Fuji’	0.000	0.053	0.133
	‘Jonagold’	0.000	0.002	0.062

Appendix B: The *P*-value of two-way ANOVA for effect of water treatments (W), N levels (N) and their interactions (W×N) on total N content

Cultivar	W			N			W×N		
	Leaf	Root	Stem	Leaf	Root	Stem	Leaf	Root	Stem
‘Qinguan’	0.000	0.000	0.000	0.003	0.017	0.000	0.829	0.829	0.040
‘Pink Lady’	0.000	0.000	0.000	0.001	0.056	0.026	0.085	0.151	0.563
‘Honeycrisp’	0.000	0.000	0.000	0.000	0.006	0.082	0.042	0.247	0.752
‘Golden Delicious’	0.000	0.000	0.000	0.000	0.002	0.002	0.091	0.591	0.038
‘Fuji’	0.000	0.000	0.000	0.000	0.054	0.005	0.094	0.570	0.968
‘Jonagold’	0.000	0.000	0.000	0.000	0.000	0.011	0.522	0.002	0.842

Appendix C: The *P*-value of two-way ANOVA for effect of water treatments (W), N levels (N) and their interactions (W×N) on ¹⁵N content

Cultivar	W			N			W×N		
	Leaf	Root	Stem	Leaf	Root	Stem	Leaf	Root	Stem
‘Qinguan’	0.000	0.000	0.000	0.000	0.000	0.028	0.078	0.156	0.004
‘Pink Lady’	0.000	0.002	0.000	0.000	0.008	0.000	0.056	0.861	0.002
‘Honeycrisp’	0.000	0.000	0.000	0.012	0.009	0.018	0.347	0.063	0.782
‘Golden Delicious’	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.820	0.604
‘Fuji’	0.000	0.000	0.000	0.033	0.005	0.045	0.386	0.038	0.187
‘Jonagold’	0.000	0.000	0.002	0.000	0.002	0.155	0.018	0.109	0.750

Appendix D: Effects of different treatments on P and K content of six cultivars

Cultivar	Treatment	P content (mg g ⁻¹ DW)			K content (mg g ⁻¹ DW)		
		Leaf	Root	Stem	Leaf	Root	Stem
‘Qinguan’	CWCN	2.57±0.08 a	4.82±0.18 a	1.89±0.03 a	25.34±0.60 a	10.16±0.33 a	7.87±0.37 a
	CWLN	2.28±0.12 b	4.15±0.21 b	1.77±0.02 b	23.52±0.43 b	8.82±0.44 b	7.32±0.29 a
	LWCN	1.77±0.10 c	3.90±0.12 b	1.47±0.04 c	20.27±1.18 c	7.48±0.50 c	6.50±0.18 b
	LWLN	1.63±0.09 c	3.46±0.09 c	1.40±0.06 c	19.60±0.71 c	6.60±0.55 c	6.29±0.15 b
‘Pink Lady’	CWCN	2.19±0.09 a	5.12±0.18 a	1.78±0.04 a	21.60±0.84 a	10.34±0.08 a	8.09±0.18 a
	CWLN	1.94±0.06 b	4.74±0.16 a	1.64±0.02 b	20.41±0.73 a	8.37±0.15 b	7.54±0.22 b
	LWCN	1.46±0.09 c	3.91±0.13 b	1.38±0.07 c	18.04±0.85 b	7.48±0.49 c	7.25±0.21 b
	LWLN	1.28±0.12 c	3.65±0.21 b	1.29±0.05 c	17.09±0.40 b	5.79±0.33 d	6.43±0.17 c
‘Honeycrisp’	CWCN	2.21±0.04 a	4.82±0.18 a	1.70±0.09 a	23.67±0.89 a	10.40±0.32 a	7.68±0.19 a
	CWLN	1.88±0.10 b	4.17±0.11 b	1.59±0.06 a	22.13±0.89 a	8.32±0.28 b	7.30±0.28 a
	LWCN	1.33±0.03 c	3.75±0.19 c	1.41±0.04 b	17.53±0.36 b	5.81±0.37 c	6.77±0.12 b
	LWLN	1.23±0.02 d	3.24±0.13 d	1.21±0.03 c	15.93±0.44 c	5.03±0.45 c	6.06±0.14 c
‘Golden Delicious’	CWCN	1.90±0.12 a	4.23±0.21 a	1.50±0.02 a	26.20±0.18 a	9.39±0.27 a	8.11±0.26 a
	CWLN	1.70±0.14 a	3.89±0.17 a	1.33±0.06 b	24.41±0.47 b	8.00±0.25 b	7.84±0.23 a
	LWCN	1.14±0.09 b	3.32±0.09 b	1.20±0.02 c	18.76±0.64 c	7.05±0.40 c	7.09±0.14 b
	LWLN	1.05±0.04 b	2.95±0.08 c	0.99±0.06 d	17.15±0.32 d	6.58±0.15 c	6.27±0.32 c
‘Fuji’	CWCN	2.47±0.14 a	4.93±0.15 a	1.83±0.03 a	23.02±0.68 a	8.84±0.18 a	7.30±0.20 a
	CWLN	2.26±0.05 b	4.46±0.21 b	1.74±0.18 a	20.43±0.55 b	7.42±0.08 b	6.72±0.23 b
	LWCN	1.80±0.13 c	4.10±0.09 c	1.58±0.05 b	14.89±0.27 c	5.35±0.36 c	6.43±0.20 b
	LWLN	1.50±0.06 d	3.48±0.13 d	1.33±0.04 c	14.02±0.95 c	4.13±0.32 d	6.02±0.15 c
‘Jonagold’	CWCN	2.31±0.08 a	4.37±0.15 a	1.74±0.08 a	24.10±1.33 a	9.02±0.30 a	8.20±0.31 a
	CWLN	2.02±0.13 b	3.97±0.08 b	1.61±0.02 b	22.89±0.37 a	7.20±0.14 b	7.66±0.16 a
	LWCN	1.65±0.07 c	3.54±0.11 c	1.48±0.03 c	18.25±0.68 b	6.36±0.11 c	7.06±0.21 b
	LWLN	1.34±0.03 d	3.09±0.09 d	1.32±0.05 d	16.08±0.53 c	5.81±0.20 c	6.57±0.12 c

Treatments: CWCN, 65-75% field capacity with 6 mM nitrate; CWLN, 65-75% field capacity with 0.01 mM nitrate; LWCN, 45-55% field capacity with 6 mM nitrate; and LWLN, 45-55% field capacity with 0.01 mM nitrate. Four biological replicates were used for each assay and data are shown as means

±SD. Within a cultivar, different letters followed the means indicate significant differences at $P < 0.05$.

Appendix E: The *P*-value of two-way ANOVA for effect of water treatments (W), N levels (N) and their interactions (W×N) on P and K content

Parameters	Cultivar	W			N			W×N		
		Leaf	Root	Stem	Leaf	Root	Stem	Leaf	Root	Stem
P	‘Qinguan’	0.000	0.000	0.000	0.000	0.001	0.054	0.010	0.336	0.546
	‘Pink Lady’	0.000	0.000	0.000	0.000	0.004	0.000	0.031	0.287	0.134
	‘Honeycrisp’	0.000	0.000	0.000	0.004	0.156	0.000	0.061	0.376	0.011
	‘Golden Delicious’	0.000	0.000	0.000	0.002	0.000	0.000	0.102	0.627	0.031
	‘Fuji’	0.000	0.001	0.000	0.012	0.014	0.002	0.560	0.692	0.068
	‘Jonagold’	0.000	0.000	0.000	0.000	0.012	0.000	0.896	0.860	0.007
K	‘Qinguan’	0.000	0.000	0.000	0.069	0.001	0.064	0.359	0.292	0.358
	‘Pink Lady’	0.000	0.000	0.000	0.007	0.001	0.000	0.011	0.967	0.211
	‘Honeycrisp’	0.000	0.000	0.000	0.000	0.001	0.162	0.001	0.042	0.954
	‘Golden Delicious’	0.000	0.000	0.000	0.000	0.006	0.021	0.615	0.105	0.180
	‘Fuji’	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.705	0.389
	‘Jonagold’	0.000	0.000	0.000	0.114	0.000	0.012	0.587	0.011	0.882

Appendix F: The correlation analysis of total N, P, and K contents under LWLN condition

	Total N content	Total P content	Total K content
Total N content	1	0.903 *	0.752
Total P content	0.903 *	1	0.45
Total K content	0.752	0.45	1

* indicated significant correlation at $P < 0.05$.