Supplementary Data

Table S1. Thirty genotypes of barley and their origin, maturity type and row type and sensitivity to waterlogging. S – spring; W - winter

Genotype	Origin	Winter/spring type	Row type
YUQS	China	S	2
YYXT	China	W/S	2
ZP2	China	S	2
ZUG293	China	S	6
ZUG403	China	S	2
DYSYH	China	W	6
Gebeina	China	S	2
Yiwu Erleng	China	W	6
YSM1	China	S	2
YSM3	China	S	2
Yu6472	China	S	2
TX9425	China	S	2
Yan89110	China	S	2
Yan90260	China	S	2
RGZLL	China	W	6
Flagship	Australia	S	2
Keel	Australia	S	2
Schooner	Australia	S	2
Skiff	Australia	S	2
Dash	Australia	S	2
TF026	Australia	S	2
YF374	Australia	S	2
Franklin	Australia	S	2
Gairdner	Australia	S	2
Yerong	Australia	S	6
CM72	USA	S	6
Dayton	USA	W	6
Numar	USA	S	6
Kinu Nijo 6	Japan	S	2
Naso Nijo	Japan	S	2

Table S2. Genotypic variability in height cm/plant of plants grown under various K^+ supply. Data are mean ± SE (n = 6). Genotypes have been divided into three group according to cluster analysis (see section 3.1and Figure1).

		K^+ concentration (mM)			
	Genotype	**0.002 mM**	**0.02 mM**	**2 mM**	**20 mM**
G 1	ZuG403	1.7 ± 0.3	4.9 ± 1.4	5.5 ± 0.2	4.3 ± 0.3
	YUQS	1.2 ± 0.8	4.4 ± 0.6	2.9 ± 0.2	3.6 ± 0.3
	Keel	2.5 ± 0.1	2.2 ± 0.5	3.3 ± 0.8	3.2 ± 0.2
	YSM1	1.9 ± 0.4	2.8 ± 0.3	1.9 ± 0.3	2.4 ± 0.6
	YSM3	1.8 ± 0.2	2.6 ± 0.1	2.7 ± 0.3	1.8 ± 0.1
	ZP2	2.1 ± 0.4	4.3 ± 0.3	2.7 ± 0.2	3.3 ± 0.1
	Flagship	2.8 ± 0.1	2.8 ± 1.1	2.7 ± 0.2	1.8 ± 0.8
	Dash	1.1 **± 0.1**	2.1 ± 0.3	2 ± 0.1	1.4 ± 0.1
	Gebeina	0.9 ± 0.1	4.1 ± 0.9	2.8 ± 0.2	2 ± 0.4
G 2	Skiff	2.9 ± 0.1	2.5 ± 0.2	3.4 ± 0.6	2.5 ± 0.2
	ZUG293	1.1 ± 0.1	2.8 ± 0.1	2.3 ± 0.1	5.2 ± 0.1
	Gairdner	1.2 ± 0.1	1.8 ± 0.3	2.3 ± 0.1	1.9 ± 0.3
	Yerong	1.7 ± 0.2	1.8 ± 0.1	1.6 ± 0.1	1.4 ± 0.1
	Schooner	2.3 ± 0.2	1.8 ± 0.3	2.3 ± 0.3	2.2 ± 0.1
	YF374	2.6 ± 0.1	3.4 ± 0.8	3.5 ± 0.1	2.1 ± 0.6
	CM72	1.8 ± 0.3	2.5 ± 0.5	3.1 ± 0.4	3.9 ± 0.3
G 3	RGZLL	0.1 ± 0.1	0.8 ± 0.1	1.6 ± 0.1	1.3 ± 0.3
	Yan90260	2.2 ± 0.2	1.2 ± 0.2	2.6 ± 0.9	1.4 ± 0.4
	Yiwu Rrleng	1.2 ± 1.2	1.8 ± 0.2	1 ± 0.7	0.7 ± 0.3
	Dayton	0.1 ± 0.1	0.8 ± 0.1	1.1 ± 0.1	1.9 ± 0.1
	DYSYH	0.1 ± 0.1	1 ± 0.1	1.2 ± 0.3	1.3 ± 0.3
	Yan89110	2 ± 0.5	1.6 ± 0.1	2.8 ± 0.4	1.3 ± 0.1
	Numar	1.4 ± 0.3	2.6 ± 0.1	3.3 ± 0.1	2.3 ± 0.9
	Yu 6472	1.6 ± 0.1	1.8 ± 0.3	2.6 ± 0.4	1.5 ± 0.3
	Naso Nijo	2.3 ± 0.2	1.7 ± 0.5	1.6 ± 0.1	1.3 ± 0.1
	TX9425	1.8 ± 0.7	2.4 ± 0.3	3.2 ± 0.2	1.5 ± 0.5
	TF026	2.3 ± 0.8	2.1 ± 0.4	1.8 ± 0.1	2 ± 0.7
	Kinu Nijo 6	1.5 ± 0.2	1 ± 0.1	0.8 ± 0.2	1.2 ± 0.2
	Franklin	0.5 ± 0.1	0.3 ± 0.1	0.2 ± 0.2	2.3 ± 0.4
	YYXT	1 ± 0.2	1 ± 0.2	1.7 ± 0.2	2.5 ± 0.1

Table S3. Genotypic variability in tiller number of plants grown under various K^+ supply. Data are mean ± SE (n = 6). Genotypes have been divided into three group according to cluster analysis (see section 3.1and Figure1).

	Genotype	0.002 mM	0.02 mM	2 mM	20 mM
G 1	ZuG403	2 ± 0.1	4.8 ± 1.5	5.8 ± 0.1	3.8 ± 0.5
	YUQS	2.5 ± 0.3	4.4 ± 0.8	4.9 ± 0.3	4.1 ± 0.4
	Keel	2.8 ± 0.1	2.3 ± 0.6	3.8 ± 0.3	3.9 ± 0.9
	YSM1	3.5 ± 0.2	3.3 ± 0.8	3.2 ± 0.2	3 ± 0.5
	YSM3	2.6 ± 0.3	3.4 ± 0.1	3.5 ± 0.3	3.6 ± 0.4
	ZP2	2.3 ± 0.3	4.8 ± 0.3	4.5 ± 0.3	3.8 ± 0.2
	Flagship	4.4 ± 0.1	3.3 ± 0.6	3.7 ± 0.8	2.5 ± 1.5
	Dash	2.1 ± 0.1	3.1 ± 0.6	4.1 ± 0.1	4.3 ± 0.3
	Gebeina	4.1 ± 0.5	6.3 ± 1.3	6.4 ± 0.6	2.7 ± 0.1
G 2	Skiff	3.6 ± 0.3	5.2 ± 0.5	6.3 ± 0.1	4.4 ± 0.6
	ZUG293	1.7 ± 0.2	4.7 ± 0.1	5 ± 0.3	7.7 ± 0.1
	Gairdner	3.3 ± 0.3	5.7 ± 0.1	6.1 ± 0.6	4.5 ± 0.2
	Yerong	1.3 ± 0.3	2.2 ± 0.2	4.4 ± 0.4	2.4 ± 0.3
	Schooner	3.6 ± 0.3	5.2 ± 0.8	5.3 ± 0.9	5.7 ± 0.8
	YF374	2.3 ± 0.6	4.3 ± 1.3	4.3 ± 0.8	4.1 ± 0.9
	CM72	2.5 ± 0.5	4.2 ± 0.8	6.4 ± 0.3	3.7 ± 0.2
G 3	RGZLL	2.1 ± 0.4	2.3 ± 0.3	2.8 ± 0.1	3.3 ± 0.2
	Yan90260	2.7 ± 0.1	2.9 ± 0.1	3.4 ± 1.3	1.5 ± 0.3
	Yiwu Rrleng	2.8 ± 0.8	3.3 ± 0.1	4.8 ± 0.5	3.8 ± 0.3
	Dayton	2.6 ± 0.1	5.3 ± 0.3	4.8 ± 0.9	3 ± 0.3
	DYSYH	3.6 ± 0.1	6.5 ± 0.3	5.3 ± 1.4	5.9 ± 0.6
	Yan89110	3.2 ± 0.2	2.8 ± 0.3	4.5 ± 0.2	2.7 ± 0.2
	Numar	2.2 ± 0.3	4.2 ± 0.2	4.5 ± 0.3	5.3 ± 0.6
	Yu 6472	2.1 ± 0.3	1.8 ± 0.7	3.3 ± 0.4	2.3 ± 0.4
	Naso Nijo	3.1 ± 0.1	2.4 ± 0.4	1.8 ± 0.3	1.8 ± 0.4
	TX9425	2.3 ± 0.2	3.6 ± 0.1	4.4 ± 0.1	2.4 ± 0.6
	TF026	2.6 ± 1.1	2.8 ± 0.5	4.2 ± 0.8	2.7 ± 0.7
	Kinu Nijo 6	2.3 ± 0.1	2.2 ± 0.3	2 ± 0.2	2.2 ± 0.1
	Franklin	3 ± 0.2	6.3 ± 0.3	7.8 ± 0.3	8.3 ± 0.3
	YYXT	2.3 ± 0.2	4.8 ± 0.2	6.4 ± 0.3	6.8 ± 0.1

Table S4. Genotypic variability in spike number of plants grown under various K^+ supply. Data are mean ± SE (n = 6). Genotypes have been divided into three group according to cluster analysis (see section 3.1and Figure1).

		K^+ concentration (mM)			
	Genotype	**0.002 mM**	**0.02 mM**	**2 mM**	**20 mM**
G 1	ZuG403	1.7 ± 0.3	4.9 ± 1.4	5.5 ± 0.2	4.3 ± 0.3
	YUQS	1.2 ± 0.8	4.4 ± 0.6	2.9 ± 0.2	3.6 ± 0.3
	Keel	2.5 ± 0.1	2.2 ± 0.5	3.3 ± 0.8	3.2 ± 0.2
	YSM1	1.9 ± 0.4	2.8 ± 0.3	1.9 ± 0.3	2.4 ± 0.6
	YSM3	1.8 ± 0.2	2.6 ± 0.1	2.7 ± 0.3	1.8 ± 0.1
	ZP2	2.1 ± 0.4	4.3 ± 0.3	2.7 ± 0.2	3.3 ± 0.1
	Flagship	2.8 ± 0.1	2.8 ± 1.1	2.7 ± 0.2	1.8 ± 0.8
	Dash	1.1 **± 0.1**	2.1 ± 0.3	2 ± 0.1	1.4 ± 0.1
	Gebeina	0.9 ± 0.1	4.1 ± 0.9	2.8 ± 0.2	2 ± 0.4
G 2	Skiff	2.9 ± 0.1	2.5 ± 0.2	3.4 ± 0.6	2.5 ± 0.2
	ZUG293	1.1 ± 0.1	2.8 ± 0.1	2.3 ± 0.1	5.2 ± 0.1
	Gairdner	1.2 ± 0.1	1.8 ± 0.3	2.3 ± 0.1	1.9 ± 0.3
	Yerong	1.7 ± 0.2	1.8 ± 0.1	1.6 ± 0.1	1.4 ± 0.1
	Schooner	2.3 ± 0.2	1.8 ± 0.3	2.3 ± 0.3	2.2 ± 0.1
	YF374	2.6 ± 0.1	3.4 ± 0.8	3.5 ± 0.1	2.1 ± 0.6
	CM72	1.8 ± 0.3	2.5 ± 0.5	3.1 ± 0.4	3.9 ± 0.3
G 3	RGZLL	0.1 ± 0.1	0.8 ± 0.1	1.6 ± 0.1	1.3 ± 0.3
	Yan90260	2.2 ± 0.2	1.2 ± 0.2	2.6 ± 0.9	1.4 ± 0.4
	Yiwu Rrleng	1.2 ± 1.2	1.8 ± 0.2	1 ± 0.7	0.7 ± 0.3
	Dayton	0.1 ± 0.1	0.8 ± 0.1	1.1 ± 0.1	1.9 ± 0.1
	DYSYH	0.1 ± 0.1	1 ± 0.1	1.2 ± 0.3	1.3 ± 0.3
	Yan89110	2 ± 0.5	1.6 ± 0.1	2.8 ± 0.4	1.3 ± 0.1
	Numar	1.4 ± 0.3	2.6 ± 0.1	3.3 ± 0.1	2.3 ± 0.9
	Yu 6472	1.6 ± 0.1	1.8 ± 0.3	2.6 ± 0.4	1.5 ± 0.3
	Naso Nijo	2.3 ± 0.2	1.7 ± 0.5	1.6 ± 0.1	1.3 ± 0.1
	TX9425	1.8 ± 0.7	2.4 ± 0.3	3.2 ± 0.2	1.5 ± 0.5
	TF026	2.3 ± 0.8	2.1 ± 0.4	1.8 ± 0.1	2 ± 0.7
	Kinu Nijo 6	1.5 ± 0.2	1 ± 0.1	0.8 ± 0.2	1.2 ± 0.2
	Franklin	0.5 ± 0.1	0.3 ± 0.1	0.2 ± 0.2	2.3 ± 0.4
	YYXT	1 ± 0.2	1 ± 0.2	1.7 ± 0.2	2.5 ± 0.1