

Supplementary information

Table S1 Cultivars grown in Experiments 3 and 4

Cultivar number	Morphotype
Bor 1	Borecole
Bor 2	Borecole
Bor 3	Borecole
Bor 5	Borecole
Bor 6	Borecole
Bor 4 [§]	Borecole
Bro 7	Broccoli
Bro 8	Broccoli
Bro 9	Broccoli
Bro 10	Broccoli
Bro 11	Broccoli
Bro 12	Broccoli
Bro 13	Broccoli
Bro 14	Broccoli
Bro 15	Broccoli
Bro 16	Broccoli
BrSp 17	Brussels sprout
BrSp 18	Brussels sprout
BrSp 19	Brussels sprout
BrSp 20	Brussels sprout
BrSp 21	Brussels sprout
BrSp 22	Brussels sprout
BrSp 23	Brussels sprout
Cab 24	Cabbage
Cab 25	Cabbage
Cab 26	Cabbage
Cab 27	Cabbage
Cab 28	Cabbage
Cab 29	Cabbage
Cab 30	Cabbage
Cab 31	Cabbage
Cab 32	Cabbage
Cab 33	Cabbage
Cab 34	Cabbage
Cab 35	Cabbage
Cab 36	Cabbage
Cab 37	Cabbage
Cab 75 [#]	Cabbage
Cau 38	Cauliflower
Cau 39	Cauliflower

Cau 41	Cauliflower
Cau 42	Cauliflower
Cau 43	Cauliflower
Cau 44	Cauliflower
Cau 46	Cauliflower
Cau 47	Cauliflower
Cau 48	Cauliflower
Cau 49	Cauliflower
Cau 40 [#]	Cauliflower
ChKa 50	Chinese kale
Ka 51	Kale
Ka 52	Kale
Ka 53	Kale
Ka 54	Kale
Ka 55	Kale
Ka 56	Kale
Ko 59	Kohlrabi
Ko 60	Kohlrabi
Ko 61	Kohlrabi
Ko 64	Kohlrabi
Ko 65	Kohlrabi
Ko 57 ^{§%}	Kohlrabi
Ko 58 ^{§%}	Kohlrabi
Ko 62 ^{§%}	Kohlrabi
Ko 63 [#]	Kohlrabi
SaCa 66	Savoy cabbage
SaCa 67	Savoy cabbage
SaCa 68	Savoy cabbage
SaCa 69	Savoy cabbage
SaCa 70	Savoy cabbage
SaCa 71	Savoy cabbage
SaCa 72	Savoy cabbage
SaCa 73	Savoy cabbage
SaCa 74	Savoy cabbage
SaCa 76 [#]	Savoy cabbage

[§] Denotes cultivars grown only in Experiment 3

[#] Denotes cultivars grown only in Experiment 4

[%] Denotes genebank accessions. All other cultivars are commercially available.

Table S2 Cultivars grown in Experiment 1

Cultivar number	Morphotype
Bor 4	Borecole
Bro 12	Broccoli
BrSp 21	Brussels sprout

Cab 31	Cabbage
Cau 41	Cauliflower
ChKa 50	Chinese Kale
Ko 60	Kohlrabi
SaCa 69	Savoy Cabbage

Table S3 Cultivars grown in Experiment 2

Cultivar number	Type
Bor 4*	Borecole
Bro 15	Broccoli
Bro 13	Broccoli
Bro 12*	Broccoli
Bro 10	Broccoli
Bro 11	Broccoli
Br Sp 17	Brussels Sprout
Br Sp 23	Brussels Sprout
Br Sp 20	Brussels Sprout
Br Sp 18	Brussels Sprout
Br Sp 21*	Brussels Sprout
Cab 36	Cabbage
Cab 28	Cabbage
Cab 37	Cabbage
Cab 24	Cabbage
Cab 26	Cabbage
Cab 31*	Cabbage
Cab 32	Cabbage
Cau 41*	Cauliflower
Cau 44	Cauliflower
Cau 43	Cauliflower
Ch Ka 50	Chinese Kale
Ka 53	Kale
Ka 52	Kale
Ko 60*	Kohlrabi
Sa Ca 71	Savoy cabbage
Sa Ca 69*	Savoy cabbage

* Denotes cultivars that are in both Experiment 1 and Experiment 2

Table S4 Standard codes and references for soil characteristic tests

Soil characteristic	Standard code	Reference
pH (H ₂ O)	GOST 26423-85	Methods for determination of specific electric conductivity, pH and solid residue of water extract. – State

		standard of USSR. Official Issue. Moscow. Standards Press. 1985. 6p. (Russian)
Cation exchange capacity	GOST 17.4.4.01-84	Nature protection. Soils. Methods for determining the capacity of cation exchange. – Interstate standard. Official Issue. Moscow, STANDARTINFORM, 2008. 6p. (Russian)
Exchangeable P	DSTU 4405:2005	Determination of mobile compounds of phosphorus and potassium by Kirsanov method modified by NSC ISSAR. – National standard of Ukraine. Official issue. Kyiv, DERZHSPZHIVTANDART UKRAINY, 2006. 8p. (Ukrainian)
Exchangeable K	DSTU 4405:2005	Determination of mobile compounds of phosphorus and potassium by Kirsanov method modified by NSC ISSAR. – National standard of Ukraine. Official issue. Kyiv, DERZHSPZHIVTANDART UKRAINY, 2006. 8p. (Ukrainian)
Exchangeable Ca	GOST 26487-85	Determination of exchangeable calcium and exchangeable (mobile) magnesium by CINAO methods. – State standard of USSR. Official Issue. Moscow. Standards Press. 1985. 13p. (Russian)
Exchangeable Mg	GOST 26487-85	Determination of exchangeable calcium and exchangeable (mobile) magnesium by CINAO methods. – State standard of USSR. Official Issue. Moscow. Standards Press. 1985. 13p. (Russian)
Organic matter content	DSTU 4289:2004	Methods for determination of organic matter. – National standard of Ukraine. Official issue. Kyiv, DERZHSPZHIVTANDART UKRAINY, 2005. 11p. (Ukrainian)
Clay content	GOST 12536-79	Methods of laboratory granulometric (grain-size) and microaggregate distribution. – Interstate standard. Official Issue. Moscow, STANDARTINFORM, 2008. 17p. (Russian)