

Supplementary data 1

Table S1: Origin, botanical and common names of cabbage accessions planted

Genus/Type	Accession name	Accession code	Common name	Origin	Head formation
Black kale					
<i>Brassica oleracea</i> var. <i>acephala</i>	Cavolo nero di toscana o senza palla (BK-CNDTP)	BK1	Fodder black kale	Italy	Open leaf
<i>Brassica oleracea</i> var. <i>acephala</i>	Cavolo palmizio (BK-CPNT)	BK2	Black kale	Italy	Open leaf
<i>Brassica oleracea</i> var. <i>acephala</i>	Cavolo nero di toscana o senza testa (BK-CNDTT)	BK3	Fodder black kale	Italy	Open leaf
Wild					
<i>Brassica oleracea</i>	Wild cabbage (WD-8707)	WD1	Wild cabbage	Great Britain	Open leaf
<i>Brassica oleracea</i>	Wild cabbage (WD-GRU)	WD2	Wild cabbage	New Zealand	Open leaf
<i>Brassica oleracea</i>	Wild cabbage (WD-8714)	WD3	Wild cabbage	Great Britain	Open leaf
Tronchuda					
<i>Brassica oleracea</i> var. <i>tronchuda</i>	Penca mistura (TC-PCM)	TC1	Tronchuda cabbage	Portugal	Open leaf
<i>Brassica oleracea</i> var. <i>tronchuda</i>	Penca povoa (TC-CPDP)	TC2	Tronchuda cabbage	Portugal	Open leaf
<i>Brassica oleracea</i> var. <i>tronchuda</i>	Tronchuda (TC-T)	TC3	Tronchuda cabbage	Portugal	Open leaf
Savoy					
<i>Brassica oleracea</i> var. <i>capitata</i>	Hybrid savoy virosa cabbage (SC-HSC)	SC1	Hybrid savoy cabbage	Great Britain	Closed heart
<i>Brassica oleracea</i> var. <i>capitata</i>	Pointed winter (SC-PW)	SC2	Savoy cabbage	Great Britain	Closed heart
<i>Brassica oleracea</i> var. <i>capitata</i>	Dark green (SC-SDG)	SC3	Savoy cabbage	Italy	Closed heart
Red					
<i>Brassica oleracea</i> var. <i>capitata</i>	Red langendijker (RC-RL)	RC1	Red cabbage	Great Britain	Closed heart
<i>Brassica oleracea</i> var. <i>capitata</i>	Rocco marner (Hybrid) (RC-RM)	RC2	Hybrid red cabbage	Great Britain	Closed heart
<i>Brassica oleracea</i> var. <i>capitata</i>	Red Danish (RC-RD)	RC3	Red cabbage	Netherlands	Closed heart
White					
<i>Brassica oleracea</i> var. <i>capitata</i>	Early market (WC-FEM)	WC1	White spring cabbage	Great Britain	Closed heart
<i>Brassica oleracea</i> var. <i>capitata</i>	Couve repolho (WC-CRB)	WC2	White cabbage	Portugal	Closed heart
<i>Brassica oleracea</i> var. <i>capitata</i>	De louviers (WC-DLI)	WC3	Hybrid white cabbage	Great Britain	Closed heart

Table S2. Consumption intent and cooking time scores from preliminary consumer study.

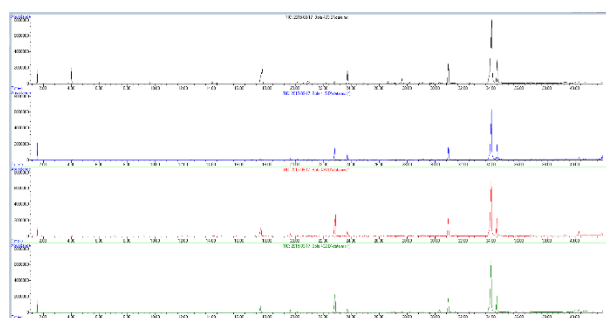
Sample / Attribute	¹ Cooking method and time (secs)					
	Steamed		90	Stir-fried		Microwaved
	120	180		120	150	180
Closed heart cabbage (Red cabbage)						
Cooking standard ²	3.3	3.4	2.8	3.0	2.8	3.8
Consumption intent ³	3.3	3.2	3.6	3.5	3.5	2.9
Open leaf cabbaged (Black kale)						
Cooking standard ²	2.7	2.9	2.5	2.7	2.7	2.7
Consumption intent ³	2.6	2.9	2.5 ^{ab}	2.1 ^a	2.6 ^{ab}	2.3

¹ Means values from 60 consumers; mean values with different superscripts in the same row within the same cooking condition and cabbage type are significantly different at $p < 0.0001$. ² Means measured on a Just-About-Right (JAR) scale (where 1: not cooked enough, 3: JAR and 5: much too overcooked). ³ Mean values measured on a 5-point scale (where 1: definitely would not eat; 3: may or may not eat; 5: definitely would eat).

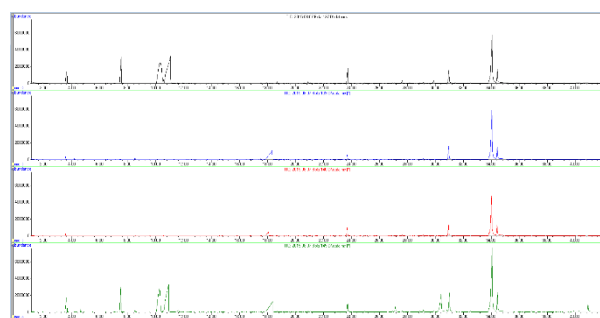
Table S3. Relative activity (A/A₀±SD) of myrosinase enzyme after domestic cooking of cabbage.

Cabbage Type/Accession	Relative activity (A/A ₀)		
	Steamed	Microwaved	Stir-fried
Black kale			
BK-CNDTP	0.05±0.01 ^{ab A}	0.05±0.01 ^{ab A}	0.65±0.01 ^{l G}
BK-CPNT	0.11±0.01 ^{a-e D}	0.11±0.05 ^{a-e D}	0.52±0.11 ^{jk E}
BK-CNDTT	0.08±0.05 ^{a-e B}	0.09±0.05 ^{a-e C}	0.56±0.13 ^{kl F}
Wild			
WD-8707	0.05±0.02 ^{ab C}	0.05±<0.01 ^{ab C}	0.41±0.03 ^{hij F}
WD-GRU	0.08±0.03 ^{a-d D}	0.05±0.01 ^{ab B}	0.46±0.12 ^{h-k G}
WD-8714	0.03±<0.01 ^{ab A}	0.03±<0.01 ^{ab A}	0.38±0.03 ^{hi E}
Tronchuda			
TC-PCM	0.08±0.03 ^{a-e D}	0.08±0.03 ^{a-e D}	0.34±0.06 ^{gh F}
TC-CPDP	0.08±0.03 ^{a-d C}	0.07±0.02 ^{a-d B}	0.38±0.05 ^{ghi G}
TC-T	0.07±0.03 ^{a-d C}	0.06±0.02 ^{a-d A}	0.20±0.05 ^{ef E}
Savoy			
SC-HSC	0.04±0.01 ^{ab E}	0.02±0.01 ^{a C}	0.19±0.03 ^{def G}
SC-PW	0.02±0.01 ^{a B}	0.01±<0.01 ^{a A}	0.03±<0.01 ^{ab D}
SC-SDG	0.02±0.01 ^{a C}	0.02±0.01 ^{a C}	0.09±0.01 ^{a-e F}
Red			
RC-RL	0.13±0.04 ^{a-e D}	0.13±0.04 ^{a-e D}	0.49±0.18 ^{ijk H}
RC-RM	0.15±0.03 ^{b-f E}	0.10±0.04 ^{a-e C}	0.37±0.08 ^{ghi G}
RC-RD	0.04±0.01 ^{ab A}	0.05±0.02 ^{ab B}	0.26±0.02 ^{fg F}
White			
WC-FEM	0.04±0.02 ^{ab A}	0.05±0.02 ^{ab B}	0.09±0.02 ^{a-e D}
WC-CRB	0.06±0.03 ^{abc C}	0.05±0.02 ^{ab B}	0.18±0.03 ^{c-f E}

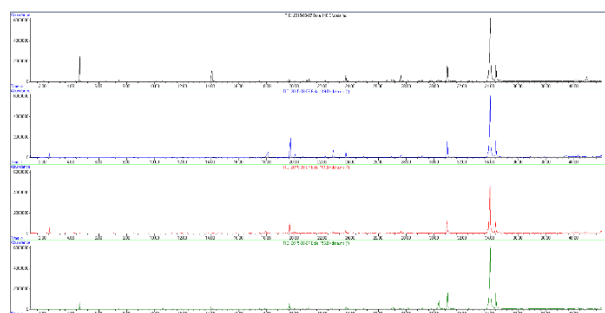
Values are means of three processing replicates (each replicate comprising of 4-5 cabbage heads) and two technical replicates (n=6±SD). SD: standard deviation from mean. Letters “ABC”: mean values not sharing a common uppercase letter differ significantly (p < 0.05) between accessions and treatments within a cabbage morphotype. Letters “abc”: mean values not sharing a common lowercase letter differ significantly (p < 0.05) between cabbage morphotypes, accessions, and treatments. A/A₀ = residual activity, defined as the ratio of myrosinase activity of processed (cooked) cabbage to unprocessed (raw) cabbage. Key: BK-CNDTP: Cavolo nero di toscana o senza palla; BK-CPNT: Cavolo palmizio; BK-CNDTT: Cavolo nero di toscana o senza testa; WD-8707: Wild cabbage 8707; WD-GRU: Wild cabbage 7338; WD-8714: Wild cabbage 8714; TC-PCM: Penca mistura; TC-CPDP: Penca povoa; TC-T: Tronchuda; SC-HSC: Hybrid savoy virosa; SC-PW: Pointed winter; SC-SDG: Dark green; RC-RL: red langendijker; RC-RM: Rocco marner (Hybrid); RC-RD: Red Danish; WC-FEM: Early market; WC-CRB: Couve repolho; WC-DLI: De louviers.



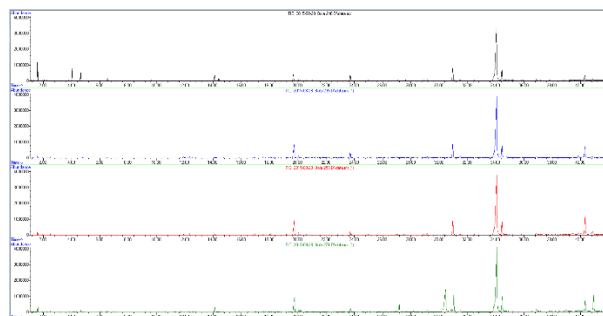
(a) Black kale



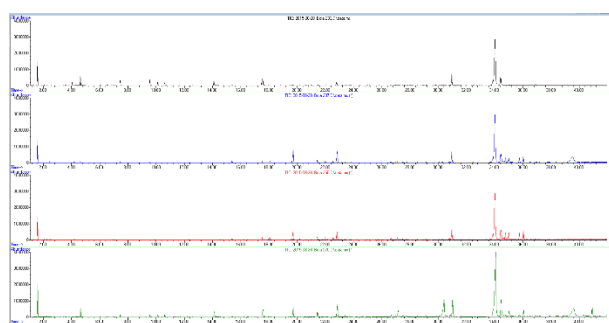
(b) Wild cabbage



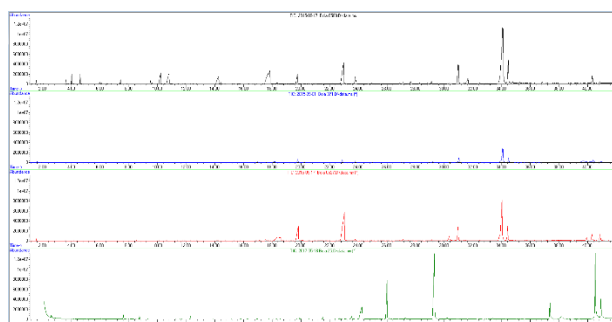
(c) Tronchuda cabbage



(d) Savoy cabbage



(e) Red cabbage



(f) White cabbage

Figure S1. Examples of GC-MS chromatograms for raw and cooked samples for each morphotype of cabbage studied (a) Black kale; (b) Wild cabbage; (c) Tronchuda cabbage; (d) Savoy cabbage; (e) Red cabbage and (f) White cabbage. Chromatogram colour keys: Black – Raw; Blue – steamed; Red – Microwaved and Green – stir-fried.