

SUPPLEMENTARY DATA

FIG. S1. Morphology of lettuce seedlings of three ages subsequently stored under high pressure nitrogen or oxygen. Control seeds were stored in the warehouse (ws) and subsequently in jars at 0.1 MPa air.

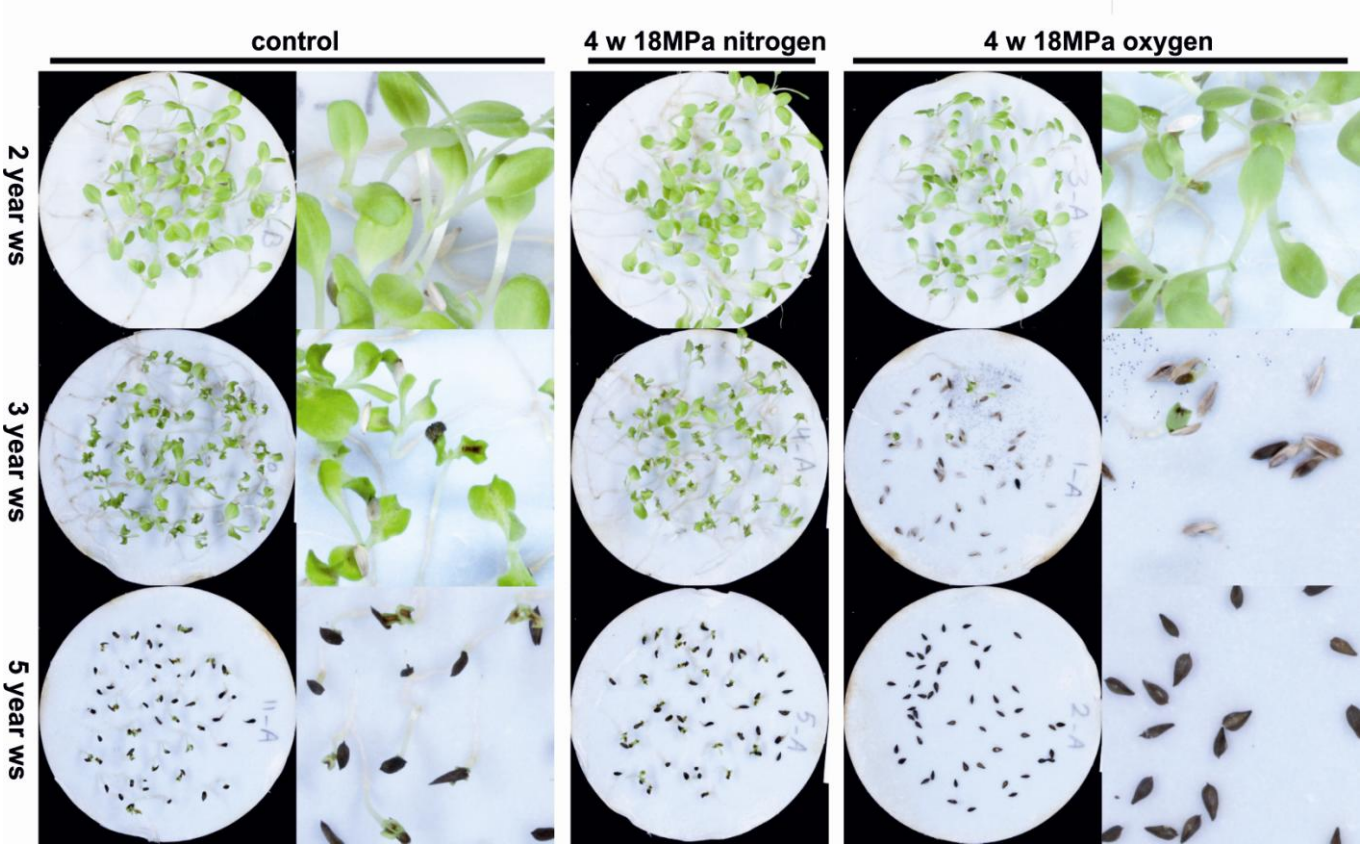


FIG. S2. Seedling quality of barley seeds stored for 7 weeks. (A) At ambient conditions (0.1 MPa air, 35% RH, 20 °C) or (B) At elevated partial oxygen pressure (18 MPa pO₂, 35% RH, 20 °C).

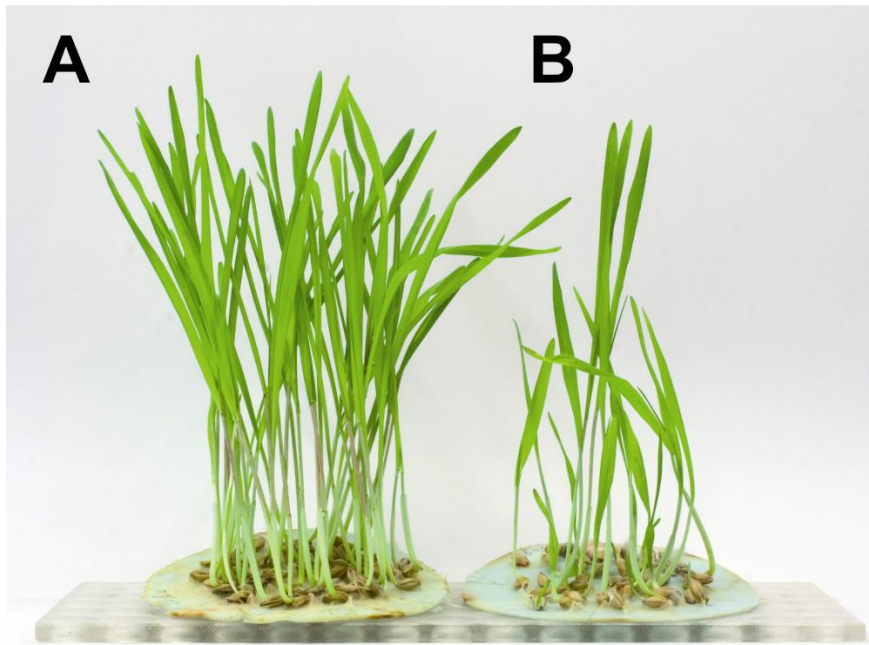


TABLE S1. Comparison of mature and less mature cabbage seed after ageing under CD or EPPO storage conditions. In the CD procedure seeds were equilibrated at 85% before being stored in hermetically sealed bags at 40 °C for the indicated period, after which the seeds were equilibrated at 35% RH and 20 °C. In the other storage treatments at 20 °C the humidity of the seeds was kept in equilibration with 35% RH by including buffered silica gel. After the storage and re-drying treatments the seeds were packed in hermetically sealed bags and stored at 5 °C until further analysis. Tocopherol content is based on dry weight.

Sample	G_{\max} (%)	T_{50} (h)	α -tocopherol (μ /g)	γ -tocopherol (μ /g)	δ -tocopherol (μ /g)
Mature seeds					
5 °C, 35% RH	100 ± 2	41.9 ± 2.4	131.1 ± 1.8	87.5 ± 1.7	17.0 ± 0.6
5 w, 35% RH, 20 °C, 0.1 MPa air	100 ± 0	39.3 ± 1.6	135.9 ± 3.2	94.1 ± 3.4	17.9 ± 1.8
5 w, 35% RH, 20 °C, 18 MPa N ₂	100 ± 4	62.0 ± 3.4	128.0 ± 9.3	88.0 ± 4.6	15.9 ± 1.1
3 d CD: 85% RH, 40 °C	100 ± 0	58.5 ± 1.2	130.5 ± 8.1	88.7 ± 3.3	17.5 ± 1.5
6 d CD: 85% RH, 40 °C	92 ± 3	80.8 ± 2.8	136.6 ± 3.8	93.0 ± 2.4	17.8 ± 0.2
9 d CD: 85% RH, 40 °C	70 ± 3	143.3 ± 8.2	131.1 ± 3.7	88.3 ± 2.2	16.8 ± 0.8
12 d CD: 85% RH, 40 °C	14 ± 2	-	130.9 ± 4.0	89.5 ± 3.7	17.4 ± 1.1
1 w, 35% RH, 20 °C, 18 MPa O ₂	98 ± 4	83.8 ± 7.3	112.1 ± 2.2	85.8 ± 2.5	16.6 ± 1.4
3 w, 35% RH, 20 °C, 18 MPa O ₂	89 ± 11	117.4 ± 23.1	86.0 ± 2.9	82.5 ± 2.4	16.4 ± 1.2
5 w, 35% RH, 20 °C, 18 MPa O ₂	78 ± 2	137.9 ± 3.8	54.9 ± 3.4	76.7 ± 4.1	15.5 ± 1.2

Less mature seeds

5 °C, 35% RH	99 ± 1	45.4 ± 4.7	98.5 ± 3.6	65.7 ± 2.1	15.1 ± 0.7
5 w, 35% RH, 20 °C, 0.1 MPa air	99 ± 1	57.3 ± 1.0	101.0 ± 3.1	66.3 ± 2.1	16.5 ± 0.8
5 w, 35% RH, 20 °C, 18 MPa N ₂	100 ± 1	69.5 ± 1.5	100.3 ± 6.4	62.8 ± 6.0	15.1 ± 1.6
3 d CD: 85% RH, 40 °C	64 ± 1	126.8 ± 9.6	104.4 ± 5.7	66.8 ± 3.4	15.9 ± 1.9
6 d CD: 85% RH, 40 °C	37 ± 3	-	105.0 ± 5.9	68.4 ± 3.4	15.3 ± 1.3
9 d CD: 85% RH, 40 °C	3 ± 1	-	102.4 ± 6.9	64.8 ± 4.4	14.3 ± 3.4
12 d CD: 85% RH, 40 °C	2 ± 0	-	107.8 ± 4.1	67.9 ± 1.2	14.8 ± 1.6
1 w, 35% RH, 20 °C, 18 MPa O ₂	97 ± 2	90.7 ± 0.9	96.7 ± 3.1	68.5 ± 2.2	16.1 ± 0.5
3 w, 35% RH, 20 °C, 18 MPa O ₂	84 ± 8	141.1 ± 13.9	69.5 ± 2.6	66.3 ± 2.3	15.1 ± 0.5
5 w, 35% RH, 20 °C, 18 MPa O ₂	56 ± 6	179.3 ± 14.9	45.5 ± 0.8	60.3 ± 2.1	14.3 ± 1.1

TABLE S2. Analyses of three cabbage seed lots stored for different periods on a lab bench and subsequently at -20 °C. Tocopherol content is based on dry weight.

Sample	Gmax (%)	T_{50} (h)	α -tocopherol (μ /g)	γ -tocopherol (μ /g)	δ -tocopherol (μ /g)
Lot 1 - Amtrak					
5 m	93 \pm 1	51.0 \pm 1.3	171.1 \pm 3.3	34.9 \pm 0.9	1.3 \pm 0
24 m	95 \pm 1	54.8 \pm 2.6	164.3 \pm 4.6	28.6 \pm 0.4	1 \pm 0.1
36 m	82 \pm 1	63.4 \pm 0.8	156.2 \pm 4.4	29.1 \pm 0.6	1.1 \pm 0
Lot 2 - Farao					
6 m	100 \pm 0	33.2 \pm 1.2	66.6 \pm 1.0	90.6 \pm 1.3	2.9 \pm 0.1
24 m	99 \pm 1	42.4 \pm 1.0	70.4 \pm 1.0	100.4 \pm 0.5	3.1 \pm 0.0
36 m	97.5 \pm 1	49.0 \pm 0.3	61.4 \pm 1.7	92.7 \pm 3.0	3 \pm 0.1
Lot 3 - Optiko					
5 m	99 \pm 1	24.0 \pm 0.2	111.6 \pm 1.9	171.5 \pm 4.7	3.2 \pm 0.1
24 m	99.5 \pm 1	25.1 \pm 0.1	113.8 \pm 3.9	177.0 \pm 2.9	3.5 \pm 0.1
36 m	98.5 \pm 1	25.4 \pm 0.3	104.1 \pm 4.7	173.9 \pm 3.8	3.3 \pm 0.1