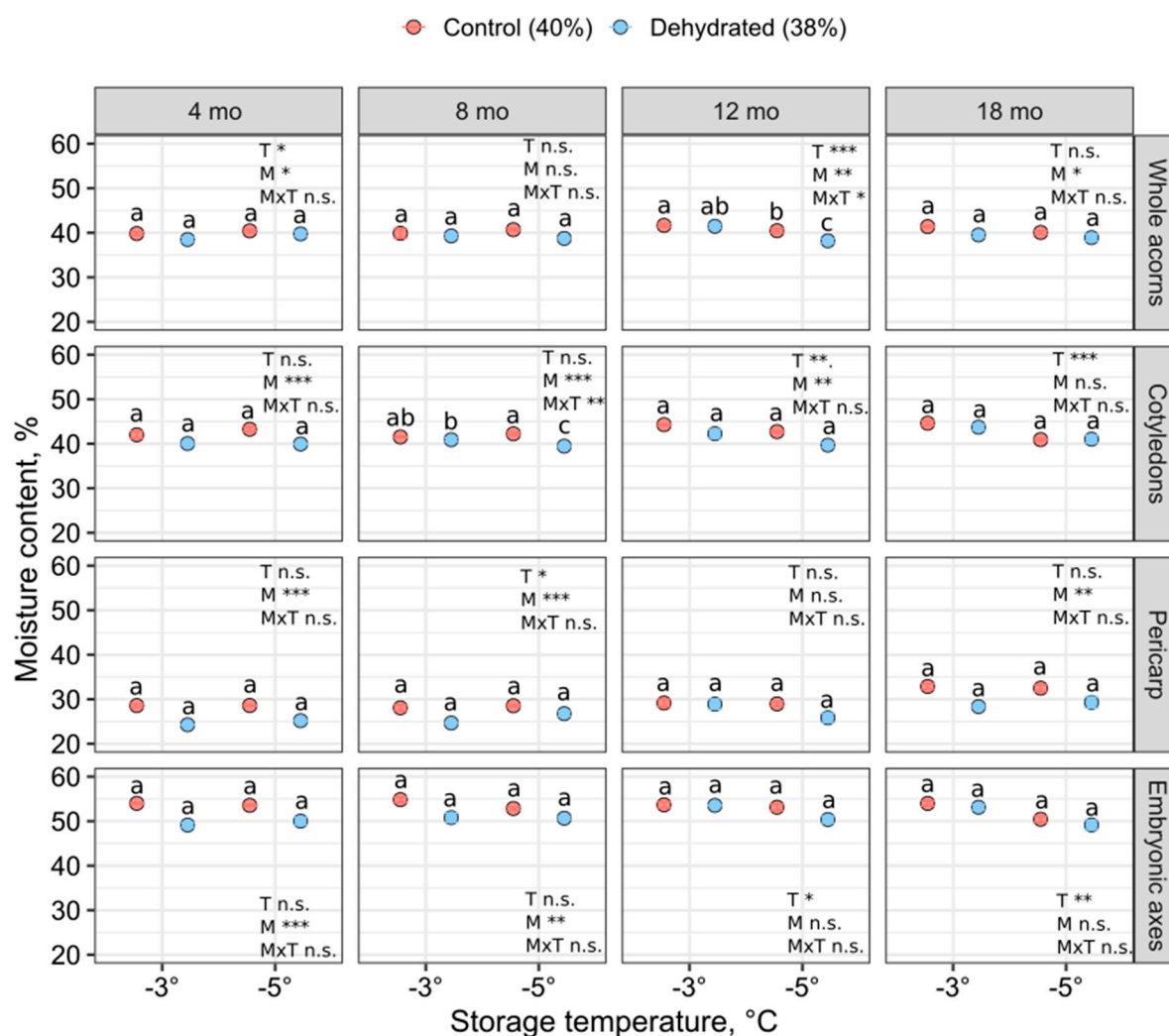


**Table S1** Results of analysis of variance for effects of date, temperature and initial seed moisture content on whole sample and standardized seed biomass (a), and pool sizes of those compounds standardized to 100 healthy seeds (b), concentrations of reserve compounds (starch, soluble carbohydrates, total nonstructural carbohydrates and fats (c). F-values and the associated probabilities *P* are shown for each effect and *P*<0.05 are indicated by bold font.

<i>a) Sample and seed biomass</i>										
			Sample biomass loss (%)		Biomass of 100 healthy seeds					
	Effect	df	F	<i>P</i>	F	<i>P</i>				
	Storage (S)	4	182.61	<b>0.000</b>	5.51	<b>0.001</b>				
	Temperature (T)	1	7.54	<b>0.009</b>	0.73	0.399				
	Moisture (M)	1	1.29	0.262	2.77	0.104				
	S×T	4	2.56	0.053	0.35	0.840				
	S×M	4	1.01	0.414	0.63	0.642				
	T×M	1	0.31	0.582	1.24	0.271				
	S×T×M	4	2.27	0.079	0.24	0.908				
<i>b) Pool sizes of reserve compounds (g per 100 healthy seeds)</i>										
			Starch		SC		TNC		Fat	
	Effect	df	F	<i>P</i>	F	<i>P</i>	F	<i>P</i>	F	<i>P</i>
	Storage (S)	4	5.88	<b>0.000</b>	9.17	<b>0.000</b>	3.80	<b>0.010</b>	19.18	<b>0.000</b>
	Temperature (T)	1	0.75	0.390	21.93	<b>0.000</b>	0.65	0.424	1.46	0.232
	Moisture (M)	1	1.74	0.194	0.92	0.343	0.20	0.656	0.37	0.544
	S×T	4	0.38	0.821	6.05	<b>0.000</b>	0.75	0.563	1.20	0.324
	S×M	4	0.08	0.989	0.98	0.430	0.09	0.984	2.77	<b>0.040</b>
	T×M	1	0.17	0.681	0.03	0.856	0.01	0.973	4.86	<b>0.033</b>
	S×T×M	4	0.28	0.890	0.15	0.958	0.14	0.966	0.61	0.657
<i>c) Concentrations of reserve compounds (% dry mass)</i>										
			Starch		SC		TNC		Fat	
	Effect	df	F	<i>P</i>	F	<i>P</i>	F	<i>P</i>	F	<i>P</i>
	Storage (S)	4	2.86	<b>0.036</b>	19.15	<b>0.000</b>	4.53	<b>0.004</b>	7.41	<b>0.000</b>
	Temperature (T)	1	0.08	0.785	43.86	<b>0.000</b>	4.63	<b>0.037</b>	0.17	0.686
	Moisture (M)	1	0.00	0.996	7.27	<b>0.010</b>	1.47	0.232	0.84	0.366
	S×T	4	0.40	0.806	9.00	<b>0.000</b>	1.41	0.246	0.37	0.829
	S×M	4	0.78	0.543	3.37	<b>0.018</b>	1.10	0.369	1.56	0.203
	T×M	1	0.51	0.481	1.96	0.169	1.84	0.182	1.32	0.259
	S×T×M	4	0.57	0.690	0.38	0.824	0.60	0.666	0.54	0.706

**Table S2** Concentrations of reserve compounds soluble carbohydrates (SC), starch, total nonstructural carbohydrates (TNC) and fats in stored acorns. Mean±SE.

Storage	Moisture content	Temperature	SC, %	Starch, %	TNC, %	Fat, %
0 mo	Control (40%)	–3 °C	5.53±0.05	27.53±0.40	33.06±0.36	5.67±0.23
		–5 °C	5.53±0.05	27.53±0.40	33.06±0.36	5.67±0.23
	Dehydrated (38%)	–3 °C	6.10±0.13	28.41±0.37	34.52±0.27	5.34±0.07
		–5 °C	6.10±0.13	28.41±0.37	34.52±0.27	5.34±0.07
4 mo	Control (40%)	–3 °C	7.79±0.60	30.86±1.47	38.64±2.03	6.08±0.54
		–5 °C	7.91±0.15	29.68±0.82	37.58±0.94	5.49±0.14
	Dehydrated (38%)	–3 °C	7.12±0.05	30.17±0.65	37.29±0.61	5.29±0.22
		–5 °C	7.21±0.46	29.76±1.40	36.97±1.07	5.51±0.12
8 mo	Control (40%)	–3 °C	6.48±0.96	27.41±1.91	33.9±2.21	5.61±0.20
		–5 °C	7.97±0.31	27.34±0.67	38.48±3.86	5.48±0.24
	Dehydrated (38%)	–3 °C	6.49±0.71	28.5±0.34	34.99±0.60	5.43±0.21
		–5 °C	7.31±0.62	28.32±0.81	35.63±0.10	5.17±0.15
12 mo	Control (40%)	–3 °C	7.18±0.31	28.85±0.09	36.03±0.37	5.19±0.46
		–5 °C	10.66±0.37	30.16±1.03	40.82±1.40	5.06±0.38
	Dehydrated (38%)	–3 °C	7.07±0.62	29.08±1.22	36.15±1.46	5.21±0.12
		–5 °C	9.64±0.45	29.76±2.00	39.4±2.33	5.33±0.11
18 mo	Control (40%)	–3 °C	6.78±0.57	28.58±1.97	35.36±2.53	4.61±0.30
		–5 °C	10.04±0.61	29.65±0.50	39.69±1.05	4.61±0.18
	Dehydrated (38%)	–3 °C	5.63±0.47	28.94±0.42	34.57±0.39	4.75±0.21
		–5 °C	7.58±0.24	26.28±2.33	33.85±2.57	5.07±0.11



**Figure S1** Moisture content of whole acorns, cotyledons, pericarp and embryonic axes after storage at -3 °C or -5 °C. ANOVA results for interaction between storage temperature and seed moisture content MC; The same letters indicate groups that are not significantly different according to Tukey's test; Mean±SE. \*\*\*  $P<0.001$ , \*\* $P<0.01$ , \*  $P<0.05$

**Table S3** Results of analysis of variance for effects of storage (S) and seed moisture content (M) on germination capacity (a), seedling emergence (b) and seedlings biomass (c).

a) Germination capacity					
		-3 °C		-5 °C	
Effect	df	F	P	F	P
Storage (S)	4	6.58	<b>0.002</b>	14.644	<b>0.000</b>
Moisture (M)	1	7.18	<b>0.014</b>	0.002	0.962
S x M	4	0.63	0.644	2.579	0.069
b) Seedlings emergence					
		-3 °C		-5 °C	
Effect	df	F	P	F	P
Storage (S)	4	6.32	<b>0.002</b>	29.76	<b>0.000</b>
Moisture (M)	1	10.56	<b>0.004</b>	0.008	0.928
S x M	4	0.44	0.774	5.55	<b>0.004</b>
c) Seedlings biomass					
		-3 °C		-5 °C	
Effect	df	F	P	F	P
Storage (S)	4	5.12	<b>0.001</b>	1.47	0.221
Moisture (M)	1	1.52	0.217	0.03	0.855
S x M	4	1.06	0.364	2.67	<b>0.046</b>