

Table S1. Primer used for cloning and RT-qPCR analysis.

Primer Name	Sequence	Analysis
<i>CiAct2for</i>	5'-CCAAATCCAGCTCATCAGTCG-3'	RT-qPCR
<i>CiAct2rev</i>	5'-TCTTCGGCTCCGATGGRGAT-3'	RT-qPCR
<i>CiTub2for</i>	5'-GCACGGCATTGATGTGACC-3'	RT-qPCR
<i>CiTub2rev</i>	5'-GAACAACCTCCGCCACT-3'	RT-qPCR
<i>AtXTH29-3'clonefor</i>	5'-TGGTATCGTCGTCGCTTCT-3'	Cloning
<i>AtXTH29-3'clonerev</i>	5'- GTCCAGTATCTCTAAACCGG-3'	Cloning
<i>CiXTH29RTfor</i>	5'-TGATAAAGTTGCCAGGAGCG-3'	RT-qPCR
<i>CiXTH29RTrev</i>	5'-AGGCTTCCTCTAGGTTCC-3'	RT-qPCR
<i>CsLEA4for</i>	5'-CGGCTTGGGTATGCTAATGT-3'	RT-qPCR
<i>CsLEA4rev</i>	5'- CGTCAAGGCAAGAAAAATTG -3'	RT-qPCR

Descriptions		Graphic Summary		Alignments		Taxonomy		Sequences producing significant alignments						Download	Select columns	Show	100	?
<input checked="" type="checkbox"/> select all 11 sequences selected								GenBank	Graphics	Distance tree of results		MSA Viewer						
		Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Psi Blast	Acc. Len									
<input checked="" type="checkbox"/>	Ambystoma tigrinum endo-ribonuclease/hydrolase 29 (XTH29) mRNA	Ambystoma tigrinum	1256	1256	100%	0.0	89.71%	1303	NAL_118077.3									
<input checked="" type="checkbox"/>	Ambystoma tigrinum clone C103001 positive ribonuclease/mRNA translocase gene (Ambystoma tigrinum) mRNA	Ambystoma tigrinum	1256	1256	100%	0.0	89.71%	1102	AY133011.1									
<input checked="" type="checkbox"/>	Ambystoma tigrinum endo-ribonuclease/hydrolase 29 (XTH29) mRNA	Ambystoma tigrinum	1218	1218	98%	0.0	89.70%	1282	NAL_0213453311.3									
<input checked="" type="checkbox"/>	PREDICTED_Ambystoma tigrinum_fasta_probable_endo-ribonuclease/hydrolase_protein	Ambystoma tigrinum	1079	1075	100%	0.0	94.91%	1457	XNL_020807020.2									
<input checked="" type="checkbox"/>	PREDICTED_Ambystoma tigrinum_fasta_probable_endo-ribonuclease/hydrolase_protein	Ambystoma tigrinum	1042	1042	98%	0.0	94.89%	1093	XNL_021010014.3									
<input checked="" type="checkbox"/>	PREDICTED_Ceratina rubella occulta endo-ribonuclease/hydrolase protein 29 (LOC17)	Ceratina rubella	928	928	100%	0.0	90.68%	1242	XNL_006295014.3									
<input checked="" type="checkbox"/>	PREDICTED_Ceratina salvia probabile endo-ribonuclease/hydrolase protein 29 (LOC17)	Ceratina salvia	926	926	100%	0.0	91.03%	1209	XNL_019406171.2									
<input checked="" type="checkbox"/>	PREDICTED_Ceratina salvia probabile endo-ribonuclease/hydrolase protein 29 (LOC17)	Ceratina salvia	915	915	100%	0.0	80.74%	1214	XNL_019405129.1									
<input checked="" type="checkbox"/>	PREDICTED_Ceratina salvia probabile endo-ribonuclease/hydrolase protein 29 (LOC17)	Ceratina salvia	911	911	99%	0.0	80.71%	1263	XNL_019403480.1									
<input checked="" type="checkbox"/>	PREDICTED_Ceratina rubella probabile endo-ribonuclease/hydrolase protein 29 (LOC17)	Ceratina rubella	894	894	98%	0.0	80.75%	991	XNL_023779317.1									
<input checked="" type="checkbox"/>	PREDICTED_Ceratina salvia probabile endo-ribonuclease/hydrolase protein 29 (LOC17)	Ceratina salvia	881	881	98%	0.0	80.6%	980	XNL_01940220.1									
<input checked="" type="checkbox"/>	Ambystoma tigrinum genome assembly_chromosome_4	Ambystoma tigrinum	833	1221	98%	0.0	89.58%	1825877	LR02545.3									
<input checked="" type="checkbox"/>	Ambystoma tigrinum genome assembly_chromosome_3	Ambystoma tigrinum	833	1209	98%	0.0	89.58%	18104025	LR02547.1									
<input checked="" type="checkbox"/>	Ambystoma tigrinum genome assembly_chromosome_5	Ambystoma tigrinum	833	1209	94%	0.0	89.58%	18570300	LR02548.1									
<input checked="" type="checkbox"/>	Ambystoma tigrinum genome assembly_chromosome_4	Ambystoma tigrinum	833	1209	98%	0.0	89.58%	19019438	LR02549.1									
<input checked="" type="checkbox"/>	Ambystoma tigrinum genome assembly_chromosome_4	Ambystoma tigrinum	833	1221	98%	0.0	89.58%	22592341	CP0216880.1									
<input checked="" type="checkbox"/>	Ambystoma tigrinum genome assembly_4	Ambystoma tigrinum	833	1209	98%	0.0	89.58%	20003804	CP0216877.1									
<input checked="" type="checkbox"/>	Ambystoma tigrinum genome 9452 chromosome 4 sequence	Ambystoma tigrinum	833	1209	98%	0.0	89.58%	20418978	CP0216871.1									
<input checked="" type="checkbox"/>	Ambystoma tigrinum genome 1677 chromosome 4 sequence	Ambystoma tigrinum	833	1209	98%	0.0	89.58%	20370951	CP0216873.1									

A)

Descriptions		Graphic Summary		Alignments		Taxonomy		Sequences producing significant alignments						Download	Select columns	Show	100	?
<input checked="" type="checkbox"/> select all 100 sequences selected								GenPept	Graphics	Distance tree of results		Multiple alignments		MSA Viewer				
		Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Psi Blast	Acc. Len									
<input checked="" type="checkbox"/>	unrooted orien product (Ambystoma tigrinum)	Ambystoma tigrinum	479	479	100%	3e-170	88.13%	219	CA0216871.1									
<input checked="" type="checkbox"/>	unrooted orien product(Ambystoma tigrinum)	Ambystoma tigrinum	481	481	100%	3e-189	99.13%	343	CA0216873.1									
<input checked="" type="checkbox"/>	endo-ribonuclease/hydrolase 29 (XTH29) mRNA	Ambystoma tigrinum	480	480	100%	3e-168	88.13%	357	NP_19838.1									
<input checked="" type="checkbox"/>	Glycoside hydrolase family 10 (Ambystoma tigrinum)	Ambystoma tigrinum	492	492	100%	4e-159	88.13%	317	KAG0216871.1									
<input checked="" type="checkbox"/>	Xanthanase orkis fimbriata C-terminal phage-like repeat	Ambystoma tigrinum	471	471	100%	2e-165	86.52%	357	KAG0216886.1									
<input checked="" type="checkbox"/>	endo-ribonuclease/hydrolase 29 (XTH29) mRNA	Ambystoma tigrinum	488	488	98%	3e-165	94.92%	283	NP_0120723.1									
<input checked="" type="checkbox"/>	Dihydroxyacetone kinase 16 (Ambystoma tigrinum)	Ambystoma tigrinum	487	487	98%	4e-165	94.92%	283	KAG0216811.1									
<input checked="" type="checkbox"/>	Glycoside hydrolase family 16 (Ambystoma tigrinum)	Ambystoma tigrinum	485	485	98%	4e-165	99.10%	255	KAG0216811.1									
<input checked="" type="checkbox"/>	Xanthanase orkis fimbriata C-terminal phage-like repeat	Ambystoma tigrinum	490	490	98%	4e-161	98.41%	255	KAG0216887.1									
<input checked="" type="checkbox"/>	PREDICTED_xanthanase orkis fimbriata C-terminal phage-like repeat	Ceratina salvia	445	445	100%	4e-155	92.21%	361	XP_010488431.1									
<input checked="" type="checkbox"/>	Xanthanase orkis fimbriata C-terminal phage-like repeat	Ambystoma tigrinum	491	491	100%	1e-154	88.70%	1800	KAG0216840.1									
<input checked="" type="checkbox"/>	PREDICTED_xanthanase orkis fimbriata C-terminal phage-like repeat	Ceratina salvia	443	443	100%	3e-154	91.34%	361	XP_010488447.1									
<input checked="" type="checkbox"/>	PREDICTED_xanthanase orkis fimbriata C-terminal phage-like repeat	Ceratina salvia	441	441	98%	1e-153	91.74%	360	XP_010488262.1									
<input checked="" type="checkbox"/>	unrooted orien product (Ambystoma tigrinum)	Ambystoma tigrinum	439	439	100%	5e-153	90.65%	338	CAJ0216102.1									
<input checked="" type="checkbox"/>	unrooted orien product (Ambystoma tigrinum)	Ambystoma tigrinum	438	438	100%	2e-152	91.81%	361	XP_010262670.1									
<input checked="" type="checkbox"/>	unrooted orien product (Ambystoma tigrinum)	Ambystoma tigrinum	438	438	100%	2e-152	95.65%	357	XP_012037360.1									
<input checked="" type="checkbox"/>	unrooted orien product (Ambystoma tigrinum)	Morulodiscus mura	438	438	100%	2e-152	88.51%	364	CAA02162887.1									
<input checked="" type="checkbox"/>	unrooted orien product (Ambystoma tigrinum)	Proteobacteria	432	432	100%	3e-151	88.70%	284	KAG0216440.1									

B)

Figure S1. Comparison of CiXTH29 nucleotide (A) and amino acid (B) sequence with all the other sequences present in BLAST database.

Descriptions		Graphic Summary		Alignments		Taxonomy							
Sequences producing significant alignments								Download	Select columns	Show	100	?	
								Sequence	ClustalW	Detailed results	MILS viewer		
□ select all	0 sequences selected												
		Description		Scientific Name	Max Score	Total Score	Query Cover	E value	Per Ident	Acc. Len	Accession		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	32072051	LR705421		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	36401467	LR0007452		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	30044432	LR0007701		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	29170729	LR0007851		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	29653075	LR0007561		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	30443000	LR0007501		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	30046930	LR2103521		
<input type="checkbox"/>		Arabidopsis thaliana Late embryogenesis abundant protein, group 1 protein (AtLEA4-1), mRNA		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	1858	NM_102991.4		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	33708400	CX0001311		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	33225758	CX00019251		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	33594868	CX00019001		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	32000767	CX00017111		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	33552277	CX00017811		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	33064871	CX00017981		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	33830734	CX00017801		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	34277122	CX00017561		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	33150062	CX00017501		
<input type="checkbox"/>		Arabidopsis thaliana genome assembly, chromosome_1		Arabidopsis_thal.	113	113	92%	3e-21	98.40%	33341248	CX00017411		

A)



B)

Figure S2. Comparison of *CiLEA4* nucleotide sequence with all the other sequences present in BLAST database (A). Alignment of *CiLEA4* PCR product (query) with *AtLEA4* (Sbjct) (B).

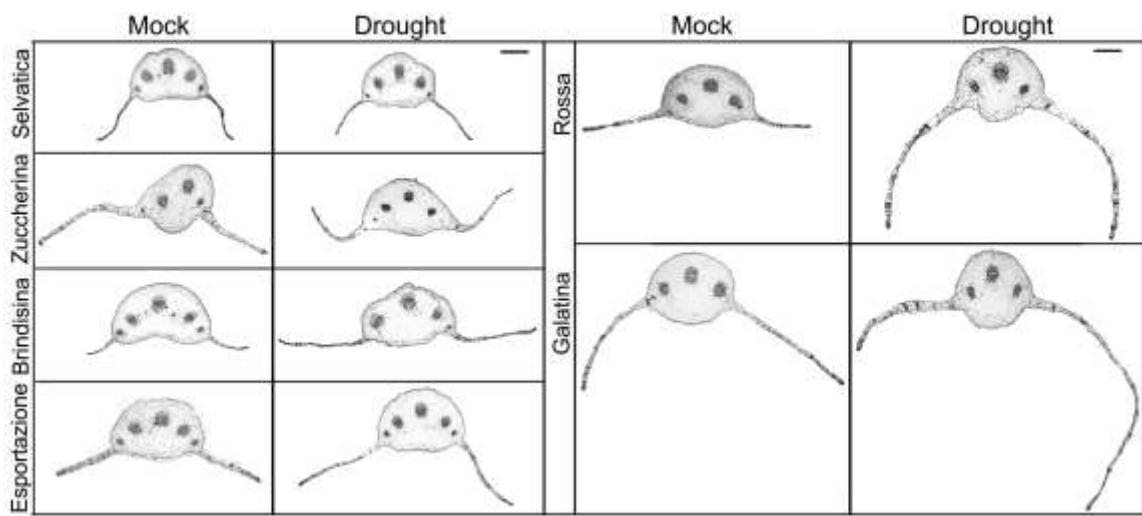


Figure S3. Bright field images of leaf lamina thin transverse section of 6-week-old chicory varieties in mock and drought stress conditions.

Scale bar = 1 mm.

Table S2. Validation of reference genes in *C. intybus*. Ct values of the candidate reference genes *CiAct2* and *CiTub2* in 6-week-old chicory plants kept for further 10 days with (Mock) or without watering (Drought). Ct values of the three biological replicates for the six studied varieties. Means ± SD of single independent experiments and Coefficient of Variation (CV) are reported.

	Sample	CiAct2						CiTub2					
		Ct value	Experiment mean	SD	Experiment Total Mean	SD	CV	Ct value	Experiment mean	SD	Experiment Total Mean	SD	CV
Selvatica	Shoot CTRL1	24.83	25.086667	0.270095	24.708533	0.4075048	0.81889648	24.572559	0.051001	0.026532	20.96	20.420333	0.31781248
	Shoot CTRL2	25.00									20.99		
	Shoot CTRL3	25.37									20.97		
	Drought stress1	24.46	"	0.206095							20.87		
	Drought stress2	24.49									20.85		
	Drought stress3	24.49									20.83		
Zucchetta	Shoot CTRL1	24.70	25.025333	0.2386071	"	24.975	0.4880537	0.91633898			20.007	20.088	0.49220258
	Shoot CTRL2	25.56									20.94		
	Shoot CTRL3	25.22									20.96		
	Drought stress1	24.33	"	0.4986667	0.583505						20.517	20.16	0.40060221
	Drought stress2	24.59									20.569		
	Drought stress3	25.57									20.93		
Brendana	Shoot CTRL1	24.1	24.48	0.4087217	"	24.3800667	0.62044762	0.8295238			20.74	20.8666667	0.140118
	Shoot CTRL2	24.36									20.84		
	Shoot CTRL3	25.01									21.01		
	Drought stress1	25.58	"	25.2823333	0.5437217						21.20		
	Drought stress2	24.76									20.258		
	Drought stress3	25.21									21.06		
Esportazione	Shoot CTRL1	24.04	23.9866667	0.283784	"	24.673333	0.7042714	0.85158966			25.718	24.881	0.73858218
	Shoot CTRL2	23.66									24.38		
	Shoot CTRL3	24.24									24.5		
	Drought stress1	25.59	"	25.36	0.153048						20.673	27.201	0.63617057
	Drought stress2	25.4									27.66		
	Drought stress3	25.49									27.46		
Rossa	Shoot CTRL1	24.04	23.5133333	0.4747714	"	23.985	0.71066528	0.0368048			23.778	23.8666667	0.16677084
	Shoot CTRL2	23.12									24.1		
	Shoot CTRL3	23.39									24.1		
	Drought stress1	24.20	"	24.4186667	0.812318						23.21		
	Drought stress2	25.01									24.89		
	Drought stress3	25.17									24.29		
Giarina	Shoot CTRL1	24.54	23.89	0.25	"	24.185	0.3704215	0.81543391			24.37	24.2233333	0.18582146
	Shoot CTRL2	23.89									24.17		
	Shoot CTRL3	23.64									24.43		
	Drought stress1	24.45	"	24.48	0.1571623						27.73	27.2933333	0.19876794
	Drought stress2	24.36									27.59		
	Drought stress3	24.69									27.5		



Figure S4. 2.0% agarose gel showing *CiXTH29* amplicon sizes for the different variety. Lane L: 200bp DNA ladder, *CiXTH29* PCR amplimer (~ 100 bp) obtained from Selvatica (lane 1), Zuccherina di Trieste (lane 2), Brindisina (lane 3), Esportazione (lane 4), Rossa Italiana (lane 5) and Galatina (lane 6) variety cDNA.

Descriptions		Graphic Summary		Alignments		Taxonomy		Download		Select columns		Show	
Sequences producing significant alignments													
<input checked="" type="checkbox"/> select all	32 sequences selected							GeBank	Graphics	Distance tree of results	MSA Viewer		
Description	Source/Name	Max Score	Total Score	Query Cover	E value	Psi-Blast HitID	Acc. Lin						
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> excluder endonuclease/cysteine nucleotidase 29 (XTH29), mRNA	<i>Arabidopsis thal.</i>	182	182	100%	4e-44	100.00%	1383	NM_118017.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> clone C103260 putative exoglucan endo-transglucosidase (NM_118018) mRNA, cDNA	<i>Arabidopsis thal.</i>	182	182	100%	4e-44	100.00%	1105	ACTJ0703.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> genome assembly chromosome 4	<i>Arabidopsis thal.</i>	183	183	100%	2e-22	100.00%	18725877	ER770243.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> excluder endonuclease/cysteine nucleotidase 29 (XTH29), mRNA	<i>Arabidopsis thal.</i>	110	110	99%	2e-22	100.00%	1202	NM_001343311.3					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> chromosome 4	<i>Arabidopsis thal.</i>	110	183	100%	2e-22	100.00%	21038885	CP011028.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> genome assembly chromosome 4	<i>Arabidopsis thal.</i>	110	183	100%	2e-22	100.00%	27502341	NC000907.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> chromosome 4	<i>Arabidopsis thal.</i>	110	183	100%	2e-22	100.00%	221048501	CP000712.2					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> isolate CS_9k_coi chromosome 4	<i>Arabidopsis thal.</i>	110	183	100%	2e-22	100.00%	21570073	CP000607.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> chromosomes 4	<i>Arabidopsis thal.</i>	110	183	100%	2e-22	100.00%	18540056	CP000607.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> DNA chromosome 4, contig fragment No. 48	<i>Arabidopsis thal.</i>	110	183	100%	2e-22	100.00%	188075	AL351549.2					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> DNA chromosome 4, BAC clone F13C5 (ESSA mixed)	<i>Arabidopsis thal.</i>	110	183	100%	2e-22	100.00%	119111	AL351711.2					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> genome assembly chromosome 4	<i>Arabidopsis thal.</i>	104	172	100%	9e-21	98.31%	18785480	LN000748.2					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> genome assembly chromosome 4	<i>Arabidopsis thal.</i>	104	172	100%	9e-21	98.31%	19104405	LN000773.3					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> genome assembly chromosome 4	<i>Arabidopsis thal.</i>	104	172	100%	9e-21	98.31%	18570300	LN000700.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> genome assembly chromosome 4	<i>Arabidopsis thal.</i>	104	172	100%	9e-21	98.31%	18371060	LN000763.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> genome assembly chromosome 4	<i>Arabidopsis thal.</i>	104	172	100%	9e-21	98.31%	187106787	LN000758.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> genome assembly chromosome 4	<i>Arabidopsis thal.</i>	104	172	100%	9e-21	98.31%	18802281	LN000753.1					
<input checked="" type="checkbox"/> <i>Arabidopsis thaliana</i> genome assembly chromosome 4	<i>Arabidopsis thal.</i>	104	172	100%	9e-21	98.31%	19019438	LB215055.1					

Figure S5. Comparison of *CiXTH29* amplimer nucleotide sequence with *AtXTH29* nucleotide sequence.

		mRNA amount	
		<i>CiXTH29</i>	
		Mock	Drought
		$2^{-\Delta Cq} \pm SD$	$2^{-\Delta Cq} \pm SD$
	Selvatica	0,00340 ± 0,00040	0,0023 ± 0,00020
	Zuccherina	0,00270 ± 0,000040	0,0038 ± 0,00070
	Brindisina	0,00051 ± 0,00009	0,00426 ± 0,00037
	Esportazione	0,00098 ± 0,00060	0,00532 ± 0,00033
	Rossa	0,00111 ± 0,00021	0,005322 ± 0,00067
	Galatina	0,00147 ± 0,00038	0,00716 ± 0,00067

Figure S6. Amplification output values of *CiXTH29* mRNAs in mock condition and after drought stress. The values are expressed as $2^{-\Delta Cq} \pm SD$ and are considered as proportional to the amount of mRNA target according to [56].

		mRNA amount	
		<i>CiLEA4</i>	
		Mock	Drought
		$2^{-\Delta Cq} \pm SD$	$2^{-\Delta Cq} \pm SD$
	Selvatica	0,00390 ± 0,00113	0,00450 ± 0,00063
	Zuccherina	0,00171 ± 0,00038	0,00137 ± 0,00029
	Brindisina	0,00083 ± 0,00030	0,00475 ± 0,00123
	Esportazione	0,00075 ± 0,00012	0,00337 ± 0,00027
	Rossa	0,00047 ± 0,00005	0,00199 ± 0,00014
	Galatina	0,00096 ± 0,00015	0,00228 ± 0,00017

Figure S7. Amplification output values of *CiLEA4* mRNAs in mock condition and after drought stress. The values are expressed as $2^{-\Delta Cq} \pm SD$ and are considered as proportional to the amount of mRNA target according to [56].