

Table S1. Germination rate of chickpeas stored under standard (Cntrl) and controlled N₂ atmosphere (CA).

		Germination rate (%)							
	Time 0	3 months		6 months		9 months		12 months	
Cntrl		89.50	90.17	92.00	89.00	91.50	90.50	76.50	75.67
		90.50		88.50		90.00		73.50	
		90.50		86.50		90.00		77.00	
CA	94.90	91.00	90.17	91.00	90.50	87.00	89.50	70.50	69.17
		89.00		93.00		90.00		67.50	
		90.50		87.50		91.50		69.50	

Table S2. FA content in chickpeas stored under standard (Cntrl) and controlled N₂ atmosphere (CA). The values are expressed as means of 3 independent biological replicates (expressed as g/100 g of FW).

FAs (g/100g)	Time 0	3 months		6 months		9 months		12 months	
		Cntrl	CA	Cntrl	CA	Cntrl	CA	Cntrl	CA
Trans fatty acids	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.1	< 0.1
ω -3	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.1	< 0.1
Butyric acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Caproic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Caprylic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Capric Acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Lauric Acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tridecanoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Myristic Acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Myristoleic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentadecanoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
<i>cis</i> -10-Pentadecanoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Palmitoleic acid	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Heptadecanoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
<i>cis</i> -10-Heptadecenoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Elaidinic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	0.04	0.04	0.04	0.04
Linolelaidic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
γ -Linolenic acid	0.05	< 0.10	< 0.10	0.05	0.06	< 0.01	< 0.01	< 0.01	< 0.01
Arachic Acid	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.02	0.02
Eicosenoic acid	< 0.01	< 0.01	0.017	< 0.01	< 0.01	0.01	0.02	0.01	0.02
Eneicosanoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Eicosadienoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Eicosatrienoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Behenic Acid	0.01	0.01	0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dihomo- γ -Linolenic Acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Arachidonic Acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Erucic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tricosanoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Docosadienoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Eicosapentaenoic acid	< 0.10	< 0.01	< 0.10	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Lignoceric acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nervonic Acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Docosahexaenoic acid	< 0.10	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Table S3. Content of the most abundant secondary metabolites in chickpeas stored under standard (Cntrl) and controlled N₂ atmosphere (CA), expressed as mg/100 g \pm standard deviation (SD). Asterisks denote statistically significant values ($p \leq 0.05$) at the Student's t-test.

Secondary metabolites (mg/g)	Cntrl	CA
Quinic acid	0.160 \pm 0.002	0.160 \pm 0.003
Indolebutyric acid MW 204	0.240 \pm 0.001	0.266 \pm 0.005*
Indoleacetic acid derivative MW 246	0.099 \pm 0.002	0.101 \pm 0.001
Indoleacetic acid derivative	0.005 \pm 0.001	0.005 \pm 0.001
Indoleacetic acid derivates	0.344 \pm 0.002	0.372 \pm 0.003*
Compound MW 432	0.225 \pm 0.004	0.241 \pm 0.006*
Compound MW 282	0.010 \pm 0.001	0.011 \pm 0.001
Benzoic acid derivate	0.255 \pm 0.005	0.275 \pm 0.009*
Biochanin a glucoside	0.010 \pm 0.001	0.010 \pm 0.001
Biochanin a derivative	0.004 \pm 0.001	0.004 \pm 0.001
Biochanin a	0.005 \pm 0.001	0.005 \pm 0.001
Biochanin derivate	0.020 \pm 0.003	0.019 \pm 0.001