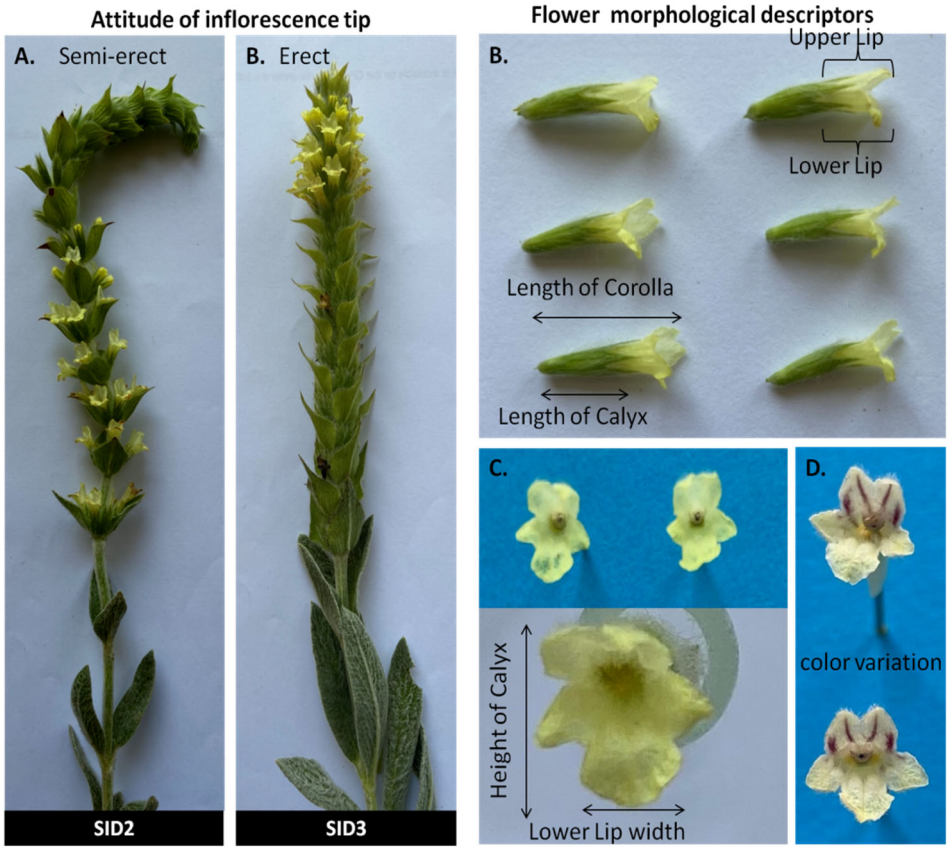


Figure S1. Explanatory characteristics of the candidate traits of the proposed descriptor list for Sideritis sp.

Table S1. Pearson and Kendal Correlations with Ordination Axes of *S. scardica* major essential oil components (in amount more than 2%) and morphometric traits. Bold numbers indicate strong correlations.

	Correlation analysis					
	Axis 1			Axis 2		
Essential oil components ≥ 2%	r	r-sq	tau	r	r-sq	tau
α-pinene	**-0.959**	**0.919**	**-0.856**	-0.037	0.001	-0.059
β-pinene	-0.316	0.1	-0.19	**-0.929**	**0.863**	**-0.778**
1-octen-3ol	0.432	0.187	0.367	0.174	0.03	0.17
limonene	0.407	0.166	0.216	**-0.836**	**0.699**	**-0.608**
carvacrol	0.493	0.243	0.32	0.197	0.039	0.124
β-caryophyllene	-0.325	0.105	-0.163	0.483	0.233	0.399
D-germacrene	-0.491	0.241	-0.336	0.386	0.149	0.401
spathulenol	0.521	0.272	0.307	**0.692**	**0.478**	**0.451**
caryophyllene oxide	0.002	0	-0.131	**0.892**	**0.796**	**0.8**
cis-β-ocimene	-0.472	0.223	-0.242	**-0.837**	**0.701**	**-0.647**
B-germacrene	**0.841**	**0.707**	**0.739**	-0.265	0.07	-0.059
Morphometric traits	r	r-sq	tau	r	r-sq	tau
ShLgth	**0.572**	**0.327**	**0.425**	**-0.579**	**0.335**	**-0.425**
PlFrWe	**0.661**	**0.437**	**0.503**	-0.252	0.063	-0.137
PlDrWe	**0.472**	**0.223**	**0.242**	-0.308	0.095	-0.216
InflLeng	0.456	0.208	0.236	**-0.762**	**0.58**	**-0.59**
LefWid	**0.533**	**0.284**	**0.427**	-0.12	0.014	-0.152

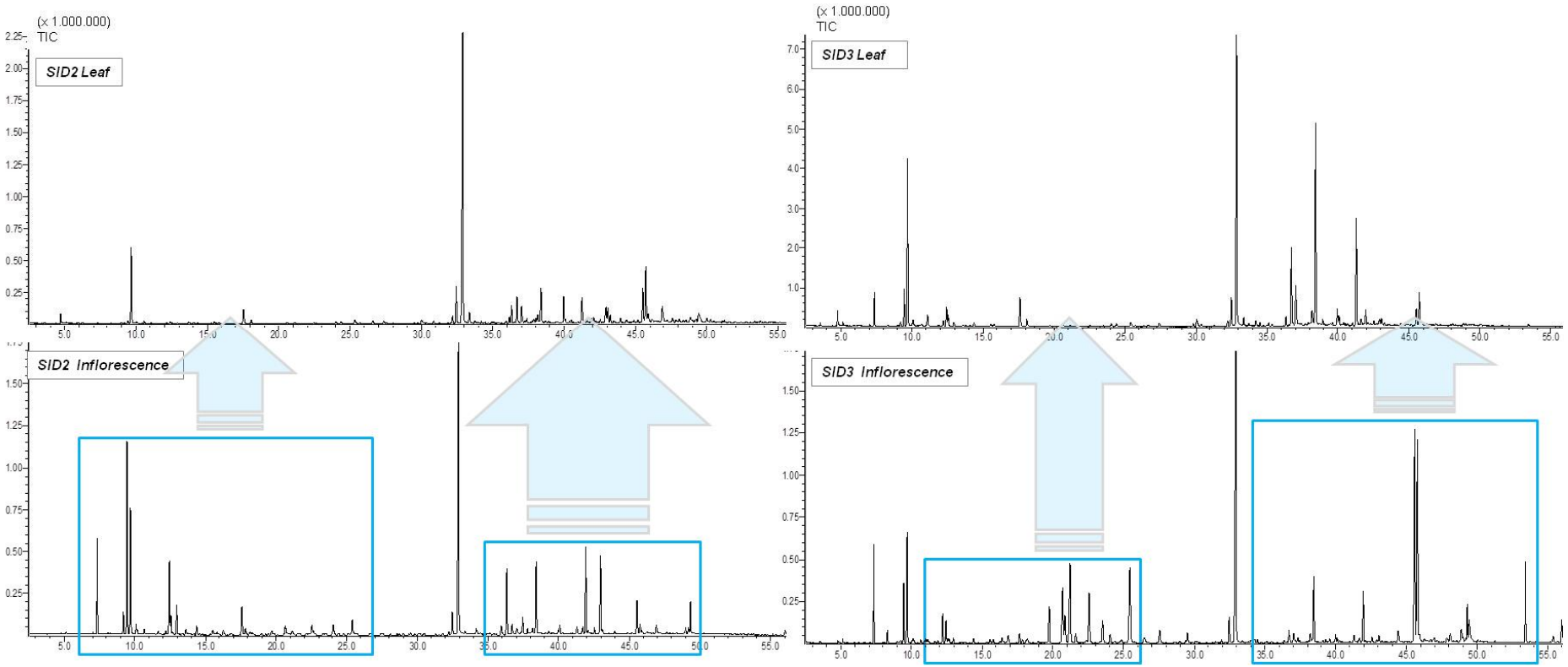


Figure S2. Descriptive GC-MS chromatograms representing the different volatile profile between the long-inflorescence *Sideritis* clone (SID2) and the sort one (SID3), concerning their leaf and inflorescence essential oil isolated separately.

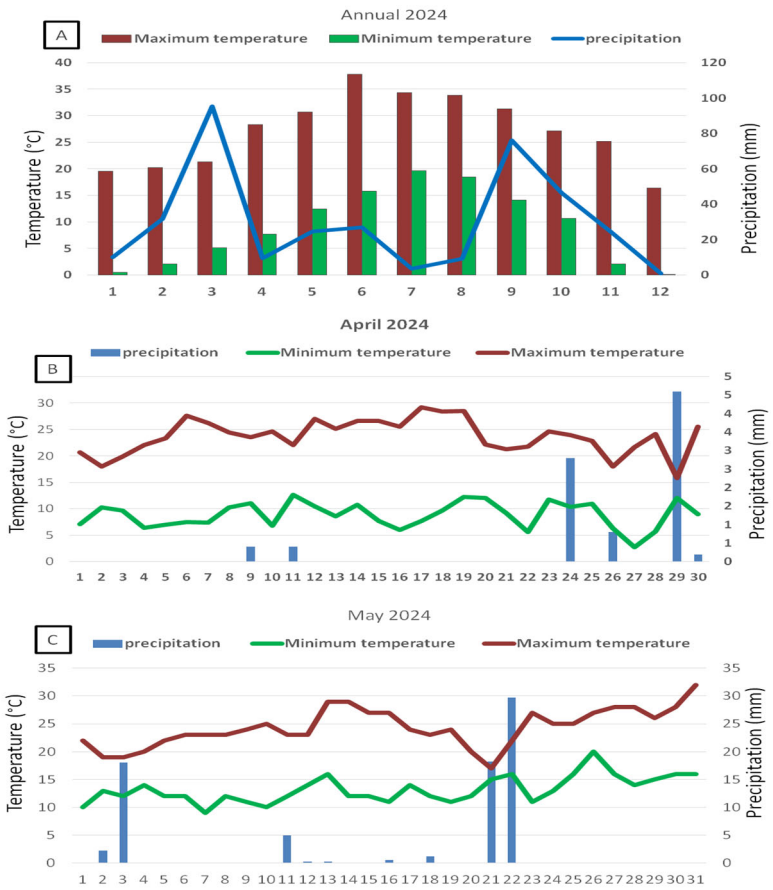


Figure S3. Annual meteorological data of minimum and maximum temperature and precipitation in 2024 (A), and during the most important months April (B) and May (C) for the infloresence development of *S. scardica*.