Supporting Information

Development of a HS-SPME/GC-MS method for the extraction and identification of the volatile compounds emitted by flowers of *Tillandsia xiphioides*

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1. Plant Material

Figure S1: Picture of High-Pubescent *T. xiphioides* (HP-xiphi) form (A) and of Low-Pubescent *T. xiphioides* (LP-xiphi) form (B).

Figure S2: Picture of a cut leaf of High-Pubescent *T. xiphioides* (HP-xiphi) form (A) and a cut leaf of Low-Pubescent *T. xiphioides* (LP-xiphi) form (B).

2. Optimization of the HS-SPME extraction

Table S1: Face-centred composite central design (FCCD) factor levels.

Level / Factor	-1	0	1
X_1 (°C)	30	45	60
X_2 (min)	20	35	50
X_3 (min)	5	7.5	10
X_4 (min)	2	4	6

Table S2: Composite central design (CCD) factor levels.

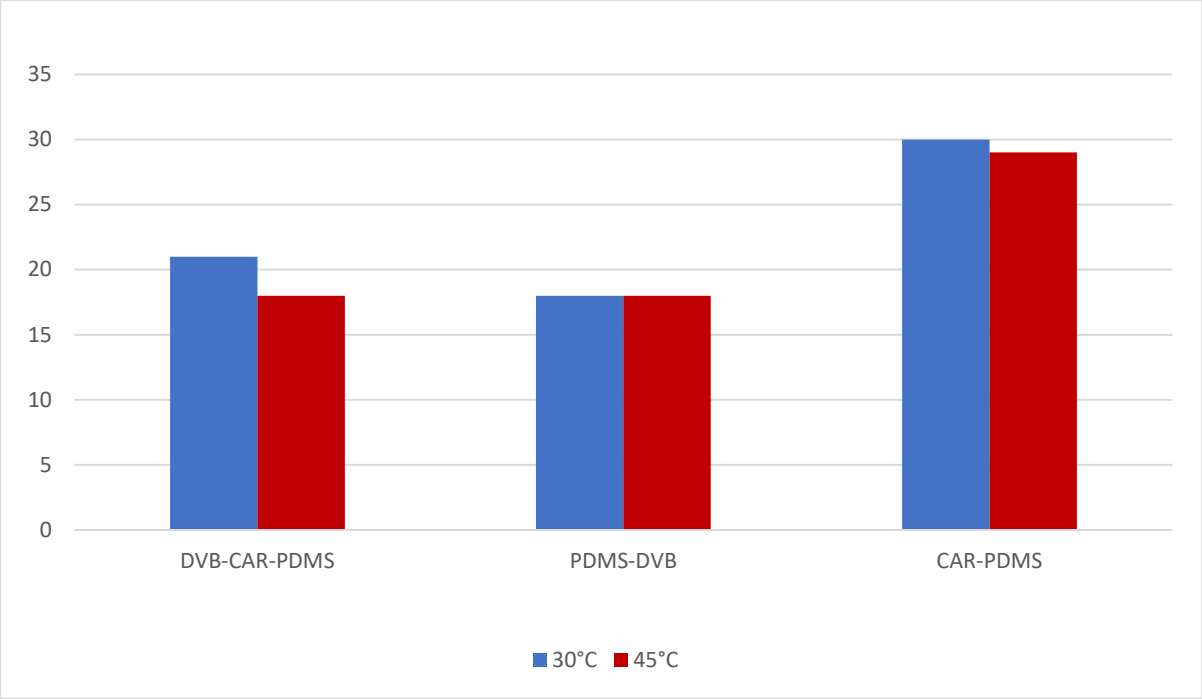
Level / Factor	-α	-1	0	+1	+α
X_1	35,2042	40	55	70	25,2042
X_2	74,7958	30	45	60	64,7958

Table S3: Experimental conditions of the reduced central composite design.

Experiment Number	Experiment Name	Run Order	X_1	X_2
1	N1	8	40	30
2	N2	2	70	30
3	N3	10	40	60
4	N4	3	70	60
5	N5	9	35,2042	45
6	N6	13	74,7958	45
7	N7	6	55	25,2042
8	N8	14	55	64,7958
9	N9	1	55	45
10	N10	4	55	45
11	N11	11	55	45
12	N12	12	55	45
13	N13	7	55	45
14	N14	5	55	45

3. Selection of the SPME fiber

Figure S3: Effect of the fiber nature on the number of extracted volatile compounds of *T. xiphioides* at 30 °C and 45 °C.



4. Profiling methods

After the HS-SPME optimization step, two extraction methods were selected for profiling because they are necessary to efficiently extract the maximum amount of volatile compounds emitted by the flowers of *T. xiphioides*. The profiling was performed on 10 plants of each form of *T. xiphioides* providing 2-3 flowers each. For each *Tillandsia* flower, two successive extractions were performed using the CAR/PDMS fiber: a first extraction method of 20 minutes at a temperature of 30 °C and a second extraction method of 65 minutes at 75 °C. For both extraction methods the equilibrium and desorption times are respectively 7.5 minutes and 4 minutes.

5. Identification

Figure S4: Chromatographic separation was carried out on a DB-5MS column. Complete chromatograms. A) TIC of LP-xiphi, the extraction being performed by CAR/PDMS for 20 minutes at an extraction temperature of 30 °C. B) TIC of LP-xiphi, the extraction being performed by CAR/PDMS for 60 minutes at an extraction temperature of 75 °C. C) TIC of HP-xiphi, the extraction being carried out by CAR/PDMS for 20 minutes at an extraction temperature of 30 °C. D) TIC of HP-xiphi, the extraction being carried out by CAR/PDMS for 60 minutes at an extraction temperature of 75 °C.