



Figure S1. Pictures of the experimental setup. (a, b) Two views of the pollinometer plants in the field. Six plants accessible to pollinators are set apart from each other; one control plant protected by an insect-proof net is visible in the background. (c) A surveyed portion of an inflorescence with fruits, harvested after fruit maturity. The two threads delineate the location of the first and last open flowers in the field. (d) Fruits bearing seeds, the upper fruit has been dissected to show the seeds.

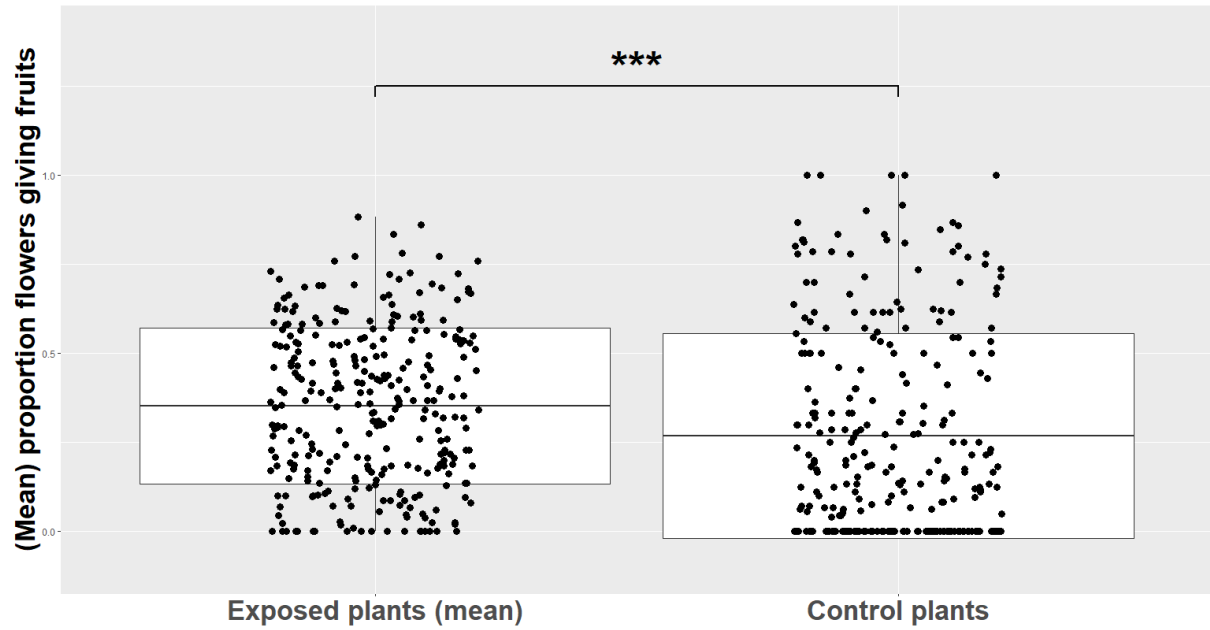


Figure S2. Fruit set of control plants. Comparisons of fruit set for exposed and control plants, measured as a proportion of flowers giving fruit. For the ‘Exposed plants’ category, each point is the mean of the six exposed plants at a site, for the ‘Control plants’ category, each point is a single control plant, one for each site. Summary statistic p-value of the model comparing the proportion of flowers giving fruit as a function of the plant type (exposed/control) is $p < 0.001$.

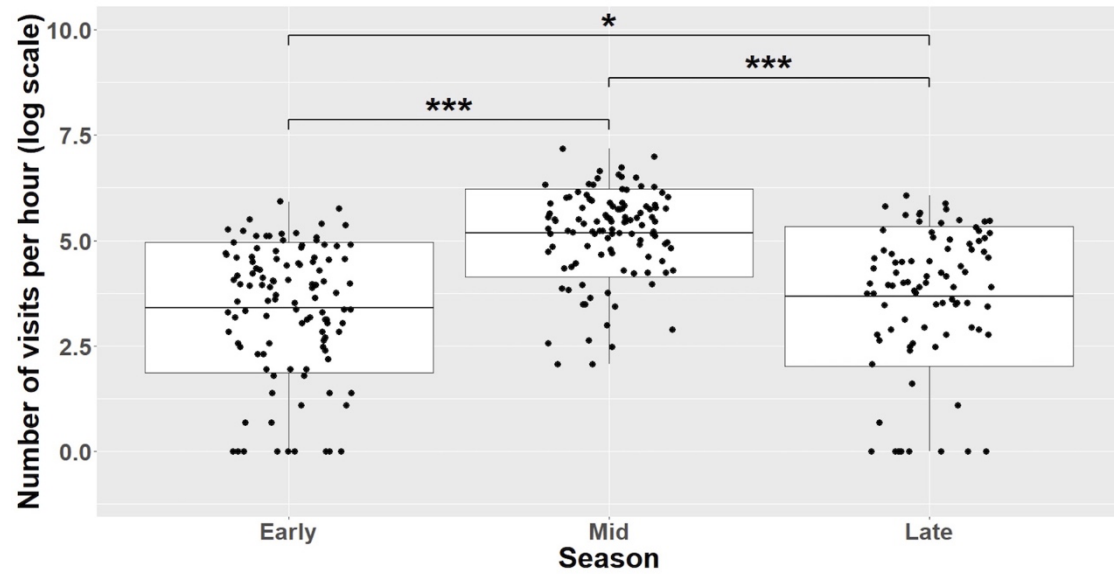


Figure S3. Number of pollinator visits per hour (log scale) depending on the season. Each point represents the number of visits per hour for all morphogroups, per site and per year. The significance thresholds above were computed using a negative binomial model comparing the number of visits in one hour as a function of the period (see Table S2a for more details). *** $p < 0.001$ / * $p < 0.05$.

Table S1. Cities involved in this study. List of cities involved in the experimental protocol in 2021 and 2022, number of sites where the experimental protocol was carried out in each city during the three periods of the protocol (Early: first two weeks of April, Mid: last week of May, Late: last two weeks of September)., total number of sites per city and city characteristics: Size (km²), Human population density (inhabitants per km²). Red boxes indicate periods where the protocol could not be carried out, green boxes indicate periods where it could be carried out.

Cities	2021				2022				Size (km ²)	Human population density (inhab/km ²)
	Early	Mid	Late	Total number of sites in 2021	Early	Mid	Late	Total number of sites in 2022		
Aix-en-Provence	0	5	1	6	0	0	0	0	186,08	791
Besançon	0	3	0	3	3	3	0	6	65,05	1818
Bordeaux	5	5	4	14	0	0	4	4	49,36	5264
Châteaufort	4	4	0	8	0	0	0	0	4,88	301
Fontainebleau	6	5	6	17	6	6	6	18	172,05	92
Genève	5	5	5	15	5	5	5	15	15,93	12796
Lille	0	0	0	0	5	5	2	12	34,51	6845
Louvain-La-Neuve	0	0	0	0	5	2	5	12	9,2	1142
Marseille	4	4	1	9	3	0	0	3	240,62	3617
Mons	3	2	0	5	8	8	8	24	147,56	654
Montpellier	0	0	0	0	3	5	0	8	56,88	5258
Nancy	5	5	5	15	5	5	5	15	15,01	6956
Paris	9	8	8	25	8	8	7	23	105,4	20360
Saint Pierre Les Nemours	5	4	5	14	5	5	5	15	21,62	250
Toulouse	0	0	0	0	6	6	5	17	118,3	4210
Uccle	3	3	0	6	0	0	0	0	22,87	3721
Total number of sites	49	53	35	137	62	58	52	172		

Tables S2a-c. Statistical analyses on Figures S3 and 2

Table S2a. Pairwise statistics of the model comparing the number of visits per hour depending on the sampling season, all years and morphogroups combined. The results are pairwise comparisons, with p-values corrected using the False Discovery Rate method. The first modality is the reference. p-values in bold are significant (alpha = 5%). Total number of observations n = 309.

	Estimate ($\pm$ SE)	t-value	p-value
Mid-Early	1.41 (0.15)	9.34	<0.0001
Late-Mid	-1.07 (0.16)	-6.67	<0.0001
Late-Early	0.34 (0.16)	2.06	0.04

Table S2b. Pairwise statistics of the models comparing the number of visits per hour depending on the sampling season, **in 2021**. There is a different model for each morphogroup. The results are pairwise comparisons, with p-values corrected using the False Discovery Rate method. For each model, the first modality is the reference. p-values in bold are significant (alpha = 5%). Total number of observations n = 137.

Year 2021	Estimate ($\pm$ SE)	t-value	p-value
Small wild bees			
Mid-Early	1.5 (0.44)	3.38	0.0014
Late-Mid	-2.37 (0.49)	-4.82	<0.0001
Late-Early	-0.87 (0.5)	-1.73	0.085
Large wild bees			
Mid-Early	-0.74 (0.51)	-1.46	0.148
Late-Mid	-1.31 (0.57)	-2.32	0.033
Late-Early	-2.05 (0.57)	-3.58	0.0015
Honeybees			
Mid-Early	0.16 (0.97)	0.16	0.87

Late-Mid	0.58 (1.07)	0.54	0.87
Late-Early	0.74 (1.08)	0.68	0.87
Bombus			
Mid-Early	0.79 (0.77)	1.03	0.53
Late-Mid	0.01 (0.84)	0.01	0.99
Late-Early	0.80 (0.86)	0.94	0.53
Hoverflies			
Mid-Early	3.17 (0.39)	8.21	<0.0001
Late-Mid	-0.27 (0.42)	-0.64	0.52
Late-Early	2.90 (0.43)	6.75	<0.0001

Table S2c. Pairwise statistics of the models comparing the number of visits per hour depending on the sampling season, in **2022**. There is a different model for each morphogroup. The results are pairwise comparisons, with p-values corrected using the False Discovery Rate method (within each model). For each model, the first modality is the reference. p-values in bold are significant (alpha = 5%). Total number of observations n = 172.

Year 2022	Estimate (± SE)	t-value	p-value
Small wild bees			
Mid-Early	1.8 (0.37)	4.81	<0.0001
Late-Mid	-2.8 (0.39)	-7.11	<0.0001
Late-Early	-1.0 (0.39)	-2.58	0.011
Large wild bees			
Mid-Early	-0.23 (0.53)	-0.43	0.67
Late-Mid	-3.88 (0.60)	-6.46	<0.0001
Late-Early	-4.11 (0.59)	-6.93	<0.0001
Honeybees			

Mid-Early	1.88 (0.97)	1.94	0.16
Late-Mid	-0.45 (1.01)	-0.45	0.66
Late-Early	1.43 (0.99)	1.43	0.23
Bombus			
Mid-Early	3.13 (0.63)	4.99	<0.0001
Late-Mid	-1.15 (0.65)	-1.78	0.078
Late-Early	1.97 (0.64)	3.06	0.004
Hoverflies			
Mid-Early	2.92 (0.34)	8.49	<0.0001
Late-Mid	-1.46 (0.36)	-4.10	0.0001
Late-Early	1.46 (0.35)	4.11	0.0001

Tables S3a-b. Detailed statistics of table 2.

Table S3a. Summary statistics of models 1 to 6. p-values in bold are significant after a two-fold Bonferroni correction. Total number of observations n = 306.

Models	Estimate ($\pm$ SE)	z-value	p-value
(1) All pollinators			
Number of UGS per hectare	-9.27 (9.37)	-0.99	0.64
Connectivity	-0.002 (0.002)	-1.25	0.42
Mean UGS size	0.02 (0.02)	0.99	0.64
Number of inflorescences	0.08 (0.02)	4.03	< 0.0001
Temperature	0.03 (0.02)	1.37	0.34
Floral Index	0.0002 (0.0002)	1.31	0.38
(2) Small wild bees			
Number of UGS per hectare	-34.08 (14.35)	-2.38	0.036
Connectivity	-0.008 (0.003)	-2.25	0.048
Mean UGS size ⁽¹⁾	-0.009 (0.07)	-0.138	1.000
Number of inflorescences	0.16 (0.05)	3.39	<0.001
Temperature	0.13 (0.04)	3.17	0.002
Floral Index	-0.0003 (0.0003)	-0.87	0.76
(3) Large wild bees			
Number of UGS per hectare	-30.32 (14.73)	-2.06	0.078
Connectivity	-0.005 (0.004)	-1.39	0.32
Mean UGS size	-0.06 (0.05)	-1.16	0.48
Number of inflorescences	0.29 (0.06)	4.56	< 0.0001
Temperature	0.09 (0.05)	2.09	0.072
Floral Index	0.0009 (0.0005)	1.76	0.16

(4) Bumblebees			
Number of UGS per hectare	-17.59 (46.63)	-0.38	1.000
Connectivity	-0.02 (0.01)	-1.66	0.18
Mean UGS size	0.10 (0.13)	0.78	0.88
Number of inflorescences	0.25 (0.08)	2.95	0.006
Temperature	0.02 (0.08)	0.25	1.000
Floral Index	-0.0001 (0.0005)	-0.26	1.000
(5) Honeybees			
Number of UGS per hectare	3.59 (57.4)	0.06	1.000
Connectivity	-0.005 (0.01)	-0.33	1.000
Mean UGS size	0.007 (0.16)	0.05	1.000
Number of inflorescences	0.34 (0.13)	2.55	0.02
Temperature	-0.05 (0.11)	-0.51	1.000
Floral Index	-0.002 (0.001)	-1.27	0.40
(6) Hoverflies			
Number of UGS per hectare	-5.16 (12.41)	-0.42	1.000
Connectivity	0.0005 (0.003)	0.15	1.000
Mean UGS size	0.03 (0.04)	0.74	0.92
Number of inflorescences	-0.03 (0.04)	-0.68	0.98
Temperature	0.002 (0.04)	0.06	1.000
Floral Index	-0.00007 (0.0002)	-0.31	1.000

⁽¹⁾For model 2, analyzing visitation rates of small wild bees, we tested the effect of mean UGS size excluding the city of Châteaufort, as this city is located in a forest and has extreme mean UGS size values (updated n = 298).

Table S3b. Summary statistics of models 7 to 12. For the small wild bee and honeybee models, we scaled the variables to achieve convergence. p-values in bold are significant after a two-fold Bonferroni correction. Total number of observations $n = 299$.

Models	Estimate ($\pm$ SE)	z-value	p-value
(7) All pollinators			
Number of UGS patches	-0.0002 (0.026)	-0.009	1.000
Mean UGS size	1.52e-6 (1.54e-6)	0.99	0.64
Number of inflorescences	0.08 (0.02)	3.59	0.0006
Temperature	0.03 (0.02)	1.42	0.34
Floral Index	0.0002 (0.0002)	1.16	0.50
(8) Small wild bees			
Number of UGS patches	-0.51 (0.15)	-3.42	0.0012
Mean UGS size	0.07 (0.14)	0.49	1.000
Number of inflorescences	0.37(0.16)	2.33	0.04
Temperature	0.52 (0.17)	3.05	0.004
Floral Index	0.003 (0.13)	0.02	1.000
(9) Large wild bees			
Number of UGS patches	-0.12 (0.06)	-2.11	0.07
Mean UGS size	-4.19e-6 (4.8e-6)	-0.87	0.76
Number of inflorescences	0.28 (0.07)	4.28	<0.0001
Temperature	0.11 (0.05)	2.18	0.058
Floral Index	0.001 (0.0005)	1.89	0.116
(10) Bumblebees			
Number of UGS patches	-0.05 (0.11)	-0.46	1.000
Mean UGS size	2.65e-6 (5.86e-6)	0.45	1.000

Number of inflorescences	0.24 (0.09)	2.60	0.018
Temperature	0.006 (0.07)	0.08	1.000
Floral Index	-0.0002 (0.0006)	-0.33	1.000
(11) Honeybees			
Number of UGS patches	-0.12 (0.30)	-0.40	1.000
Mean UGS size	0.17 (0.55)	0.32	1.000
Number of inflorescences	1.28 (0.51)	2.52	0.02
Temperature	-0.20 (0.47)	-0.43	1.000
Floral Index	-0.78 (0.53)	-1.49	0.28
(12) Hoverflies			
Number of UGS patches	0.05 (0.048)	1.08	0.56
Mean UGS size	3.93e-6 (3.08e-6)	1.28	0.40
Number of inflorescences	-0.009 (0.04)	-0.22	1.000
Temperature	0.005 (0.04)	0.14	1.000
Floral Index	-0.0002 (0.0003)	-0.64	1.000