Table S1. TL$_{50}$ and TL$_{99}$ values (days) and associated parameters for adults of *Callosbruchus maculatus* fumigated with EO of peel's *Citrus aurantium*.

Gender	Concentration (µL/L air)	Probit parameters				
		LT*$_{50}$ (95%CL)	LT$_{99}$ (95%CL)	χ^2	*df*	*p*
Females (N=300)	0	8.36 (8.10-8.62)	12.70 (12.12-13.44)	12.91	11	0.299
	25	4.26 (3.83 - 4.69)	8.32 (7.45 - 9.66)	13.27	7	0.066
	50	3.05 (2.30 - 3.75)	7.53 (6.23 - 10.22)	23.74	6	0.001**
	100	1.63 (1.10 - 2.10)	4.10 (3.32 -5.83)	10.27	4	0.036**
	200	0.77 (0.62 - 0.91)	1.74 (1.50 -2.16)	0.003	1	0.96
Males (N=300)	0	7.77 (7.50 - 8.05)	12.26 (11.64- 13.06)	13.68	10	0.188
	25	2.55 (2.04 - 3.02)	6.57 (5.66 - 8.10)	12.73	6	0.047**
	50	1.55 (1.37 - 1.73)	3.54 (3.18 - 4.04)	4.65	3	0.2
	100	0.74 (0.60 - 0.87)	1.67 (1.44 - 2.06)	0.00	1	0.952
	200	0.51 (0.21 -1.06)	0.85 (0.45 - 2.19)	0.05	1	0.831
Phosphine (♀♀ or ♂♂)		0.51 (-0.21 -1.06)	0.85 (0.45 - 2.19)	0.05	1	0.831

*: LT= Lethal time; **: When *p* > 0.05, the results fit well to the "Probit" analysis model, while when *p* ≤ 0.05, a heterogeneity factor was used in the calculation of confidence intervals.

Table S2. LC$_{50}$ and LC$_{99}$ with their 95% confidence intervals (CI) (µL / L air) and χ^2 of the EO of *Citrus aurantium* peel used against adults of *Callosobruchus maculatus*.

Gender	Days	Slope ± SE	Intercept ± SE	LC*$_{50}$ (95% CI)	LC$_{99}$ (95% CI)	χ^2	*df*	*p* **
Females (N = 300)	1	0.01 ± 0.001	-2.02 ± 0.18	147.59 (105.57 - 236.76)	317.32 (231.14 - 650.63)	10.32	3	0.02
	2	0.03 ± 0.003	-1.77 ± 0.19	66.99 (59.48 - 75.83)	155.17 (135.81 - 184.63)	4.06	3	0.26
	3	0.03 ± 0.003	-1.51 ± 0.18	48.20 (41.94 - 55.08)	122.47 (107.15 - 145.53)	4.90	3	0.18
	4	0.03 ± 0.004	-1.13 ± 0.16	35.81 (29.64 - 42.25)	109.66 (94.20 - 133.94)	3.18	3	0.37
	5	0.04 ± 0.01	-0.91 ± 0.16	24.62 (18.88 - 30.11)	87.29 (73.94 - 109.25)	2.78	3	0.43
	6	0.06 ± 0.01	-0.69 ± 0.17	12.39 (3.82 - 23.46)	54.36 (37.89 - 114.94)	6.73	3	0.08
Males (N = 300)	1	0.01 ± 0.01	-1.31 ± 0.13	109.26 (62.42 - 206.10)	303.62 (206.52 - 793.05)	12.16	3	0.01
	2	0.03 ± 0.003	-1.32 ± 0.17	45.02 (24.62 - 70.30)	124.39 (89.83 - 253.77)	8.66	3	0.03
	3	0.05 ± 0.01	-1.18 ± 0.19	24.65 (9.60 - 38.23)	73.39 (53.25 - 149.52)	7.17	3	0.07
	4	0.07 ± 0.01	-1.13 ± 0.2	16.60 (12.71 - 20.32)	50.94 (43.86 - 61.87)	4.22	3	0.24
	5	0.09 ± 0.01	-0.91 ± 0.19	10.32 (6.99 - 13.60)	36.85 (30.81 - 46.53)	0.02	3	1.00

*: LC= Lethal concentration; **: When *p* > 0.05, the results fit well with the "Probit" analysis model; whereas when P ≤ 0.05, a heterogeneity factor was used in the calculation of confidence intervals .

Table S3. Parameters of non-linear regression analyses of *Callosobruchus maculatus* adults F1 emerged daily from chickpea grains fumigated with *Citrus aurantium* peel EO (shown in Figure 6) according to the model y= a*exp(-0.5*((x-x0)/b)^2) [a (Number) = Peak of the daily emergence of adults, b (Days) = Standard deviation of x$_0$, x$_0$ (Days) = Location of peak emergence since the start of fumigation].

Gender	Concentration (µL/L air)	Estimated parameters (±SE)			R^2	*df* Residual	F	*p*
		a*	b	x$_0$				
Females	0	35.56±2.85	2.50 ± 0.24	27.72 ± 0.23	0,89	64	624.39	<0.0001
	25	11.81 ± 1.47	1.86 ± 0.27	27.45 ± 0.27	0.82	52	210.74	<0.0001
	50	2.24 ± 0.34	3.30 ± 0.71	28.43 ± 0.59	0.55	58	91.48	<0.0001
	100	0.65 ± 0.12	3.16 ± 1.13	27.75 ± 0.97	0.52	40	16.2	<0.0001
Males	0	34.50 ± 2.79	2.47 ± 0.24	27.70 ± 0.23	0.89	64	609.81	<0.0001
	25	11.42 ± 1.31	1.88 ± 0.25	27.28 ± 0.25	0.85	52	226.52	<0.0001
	50	1.98 ± 0.33	3.76 ± 1.33	29.30 ± 1.12	0.52	52	62.67	<0.0001

| 100 | 1.13 ± 0.10 | 2.84 ± 0.67 | 29.35 ± 0.76 | 0.90 | 40 | 30.4 | <0.0001 |

*: For each sex, all the peaks compared 2 to 2 are statistically different at $p < 0.05$.