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# Corrigendum: Effects of imidacloprid-induced hormesis on the development and reproduction of the rose-grain aphid *Metopolophium dirhodum* (Hemiptera: aphididae)

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## KEYWORDS

hormesis, imidacloprid, *Metopolophium dirhodum*, longevity, fecundity

## A Corrigendum on

Effects of imidacloprid-induced hormesis on the development and reproduction of the rose-grain aphid *Metopolophium dirhodum* (Hemiptera: Aphididae)

by Li X, Li Y, Zhu X, Li X, Cheng D and Zhang Y (2023). *Front. Physiol.* 14:1113464. doi: 10.3389/fphys.2023.1113464

In the published article, there was an error in the note for **Table 1** as published. The word “paired” was missing from the following sentence: “Different letters in the same row indicated significantly different ( $p < 0.05$ ) by the bootstrap test.” The corrected table note appears below.

In the published article, there was an error in the note for **Table 2** as published. The word “paired” was missing from the following sentence: “Different letters in the same row indicated significantly different ( $p < 0.05$ ) by the bootstrap test.” The corrected table note appears below.

In the published article, there was an error in **Table 2** as published. Some of the data in **Table 2** should be kept 4 digits behind the decimal point. The corrected **Table 2** and its caption appear below.

In the published article, there was an error. Some corrections have been made to **Results**, *Transgenerational sub-lethal effects of the imidacloprid on survival rates, life expectancy and reproductive value of the *M. dirhodum* F<sub>1</sub> generation*, paragraph two. This sentence previously stated:

“The age-stage specific life expectancy ( $e_{xj}$ ) refers to the predicted survival of an individual at age  $x$  and stage  $j$  at a later age  $x$ . Compared with control, the F<sub>1</sub> individuals produced by F<sub>0</sub> imidacloprid-treated had a higher life expectancy (Figure 4). Moreover, newborn *M. dirhodum* nymphs were expected to live for 56, 62, and 52 days

**TABLE 1** The sub-lethal effects of imidacloprid on developmental duration and fecundity of the F<sub>1</sub> generation of *Metopolophium dirhodum*.

Parameter <sup>a</sup>	Control	Imidacloprid leaf treatment (Mean ± SE)		
		LC <sub>15</sub>	LC <sub>25</sub>	LC <sub>35</sub>
N1 (d)	1.58 ± 0.10 c	2.05 ± 0.06 b	2.05 ± 0.06 b	2.40 ± 0.06 a
N2 (d)	2.25 ± 0.10 a	1.86 ± 0.06 b	1.81 ± 0.06 b	1.72 ± 0.06 b
N3 (d)	1.95 ± 0.12 a	1.96 ± 0.08 a	1.77 ± 0.08 a	1.88 ± 0.07 a
N4 (d)	3.05 ± 0.13 a	2.54 ± 0.09 b	2.67 ± 0.09 b	2.52 ± 0.08 b
Pre-adult (d)	8.82 ± 0.20 a	8.41 ± 0.11 ab	8.29 ± 0.11 b	8.52 ± 0.10 ab
Adult longevity (d)	31.27 ± 0.75 c	35.42 ± 0.61 a	33.47 ± 0.56 b	32.47 ± 0.59 bc
Total longevity (d)	40.09 ± 0.73 b	43.51 ± 0.66 a	41.07 ± 0.72 b	40.99 ± 0.57 b
APRP (d)	1.55 ± 0.12 a	1.23 ± 0.12 ab	1.02 ± 0.08 bc	0.88 ± 0.07 c
TPRP (d)	10.37 ± 0.23 a	9.64 ± 0.17 b	9.31 ± 0.13 b	9.40 ± 0.10 b
Reproductive period (d)	17.35 ± 0.78 a	17.32 ± 0.59 a	18.66 ± 0.58 a	17.62 ± 0.56 a
Fecundity (nymphs per female)	40.39 ± 2.44 b	42.39 ± 1.95 ab	47.60 ± 2.05 a	45.68 ± 2.01 ab

<sup>a</sup>N1, first nymph stage; N2, second nymph stage; N3, third nymph stage; N4, fourth nymph stage; Pre-adult, complete nymph stage; APRP, adult pre-reproductive period; TPRP, total pre-reproductive period. Data in the table are represented as mean ± SE, estimated with bootstrapping (100,000). Different letters in the same row indicated significantly different ( $p < 0.05$ ) by the paired bootstrap test.

**TABLE 2** Sub-lethal effects of imidacloprid on population parameters of the F<sub>1</sub> generation of *Metopolophium dirhodum*.

Parameter <sup>a</sup>	Control	Imidacloprid leaf treatment (Mean ± SE)		
		LC <sub>15</sub>	LC <sub>25</sub>	LC <sub>35</sub>
Intrinsic rate of increase/ $r$	0.2243 ± 0.0051 b	0.2347 ± 0.0036 ab	0.2433 ± 0.0041 a	0.2435 ± 0.0032 a
Finite rate of increase/ $\lambda$	1.2514 ± 0.0064 b	1.2646 ± 0.0045 ab	1.2755 ± 0.0052 a	1.2757 ± 0.0041 a
Net reproductive rate/ $R_0$	40.40 ± 2.43 b	42.02 ± 1.97 ab	46.73 ± 2.10 a	45.68 ± 2.01 ab
Mean generation time/ $T$	16.48 ± 0.25 a	15.92 ± 0.17 ab	15.80 ± 0.19 b	15.69 ± 0.14 b

<sup>a</sup>Data in the table are represented as mean ± SE, estimated with bootstrapping (100,000). Different letters in the same row indicated significantly different ( $p < 0.05$ ) by the paired bootstrap test.

following the 50, 100, and 200 mg/L imidacloprid treatments, respectively, for only 49 days in response to the control treatment (Figure 4)."

In the corrected sentence, "survival" was changed to "survival time" due to a missing word, "at a later age  $x$ " was deleted as these were superfluous words, and "F0" was corrected to "F<sub>0</sub>" since "0" should be subscripted. Additionally, "56, 62, and 52 days" was changed to "57, 63, and 53 days" and "49 days" was changed to "50 days". The first day that the life expectancy value in Figure 4 is 0 should be added, so the life expectancy value for each treatment should be added by 1 day.

The corrected sentence appears below:

"The age-stage specific life expectancy ( $e_{xj}$ ) refers to the predicted survival time of an individual at age  $x$  and stage  $j$ . Compared with control, the F<sub>1</sub> individuals produced by F<sub>0</sub> imidacloprid-treated had a higher life expectancy (Figure 4). Moreover, newborn *M. dirhodum* nymphs were expected to live

for 57, 63, and 53 days following the 50, 100, and 200 mg/L imidacloprid treatments, respectively, for only 50 days in response to the control treatment (Figure 4)."

The authors apologize for these errors and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

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