REPLY

Reply to the Letter to the Editor by Hsin Chi

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Thank you for your letter concerning our manuscript entitled '**Using two-sex life tables to determine fitness parameters of four *Bactrocera* species (Diptera: Tephritidae) reared on a semi-artificial diet**'. All of our authors agree with Prof. Hsin Chi with the following responses.

1. In the Discussion, the authors wrote 'According to life tables, traits of $R_0 < 1$ and $r > 0$ result in a mean population increase' (right column below Table 4). This statement is incorrect. According to life table theory (Lotka, 1913; Lewis, 1942), if R_0 is <1, r must be <0. That statement should be corrected to 'According to life table theory, traits of $R_0 > 1$ and $r > 0$ result in … population increase'.

Response: Agree with the correction.

2. In Table 2, the authors reported death rates of 8.93, 5.00, 4.90, and 5.05 for *Bactrocera correcta*, *B. dorsalis*, *B. cucurbitae*, and *B. tau*, respectively. These death rates are much higher than the birth and survival rates. If the death rates are greater than the sum of the birth and survival rates, the intrinsic rate will be negative. The death rate data are obviously incorrect. I believe the authors did not notice that the death rates were listed in scientific notation, the value 8.93 must actually be 8.93E-03 or 8.93E-04.

Response: The values of '8.93' should be replaced with '8.93E-03', '5.00' with '5.00E-03', '4.90' with '4.90E-03', and '5.05' with '5.05E-03', respectively.

3. In the footnote of Table 1, the 'bootstrap test' should be corrected to 'paired bootstrap test'. In Table 2, the parameters R should be corrected to 'r', and Λ should be corrected to λ.

Response: Agree with the corrections.

4. The correct citation of TWOSEX program should be 'Chi, H. (2017) TWOSEX-MSChart: A computer program for the age-stage, two-sex life table analysis. National Chung Hsing University, Taichung, Taiwan.

http://140.120.197.173/ecology/Download/TWOSEX-MSChart.rar.'

Response: Agree.

5. The authors wrote 'Body weights of immature and mature stages of each fly were measured on an electronic weighing balance (Chi & Su, 2006; Singh *et al.*, 2010)'. However, Chi & Su (2006) did not measure body weight.

Response: We agree with these comments. Please delete the reference of 'Chi & Su (2006)'.

6. The authors wrote in Acknowledgments 'The authors are thankful to Prof. Dr Hsin Chi and Muhammad Nadir Naqqash from the Department of Plant Production and Technologies, Faculty of Agricultural Sciences and Technologies, Ömer Halisdemir Üniversity, for two-sex life table analysis'. Because I did not analyze their data nor comment on their manuscript, the authors should not list me in the Acknowledgments. Proper citation of my program would be sufficient.

Response: We agree with these comments. Please delete the sentence of 'The authors are thankful to Prof. Dr Hsin Chi and Muhammad Nadir Naqqash from the Department of Plant Production and Technologies, Faculty of Agricultural Sciences and Technologies, Ömer Halisdemir Üniversity, for two-sex life table analysis.'

References

Chi, H. & Su, H. Y. (2006) Age-stage, two-sex life tables of Aphidius gifuensis (Ashmead) (Hymenoptera: Braconidae) and its host Myzus persicae (Sulzer) (Homoptera: Aphididae) with mathematical proof of the relationship between female fecundity and the net reproductive rate. *Environ. Entomol.* **35**, 10–21.

Lewis, E. G. (1942) On the generation and growth of a population. *Sankhya* **6**, 93–96.

Lotka, A. J. (1913) A natural population norm. I. *Journal of the Washington Academy of Sciences* **3**, 241–248.

Singh, S. K., Kumar, D. & Ramamurthy, V.V. (2010) Biology of Bactrocera (Zeugodacus) tau (walker) (Diptera: Tephritidae). *Entomological Research* **40**, 259–263.

Response: Ok, as set.

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