

Correction. Developmental Times and Life Table Statistics of *Aulacorthum solani* (Hemiptera: Aphididae) at Six Constant Temperatures, with Recommendations on the Application of Temperature-Dependent Development Models

Source: Environmental Entomology, 40(3)

Published By: Entomological Society of America

URL: <https://doi.org/10.1603/022.040.0302>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Correction. In the article, “Developmental Times and Life Table Statistics of *Aulacorthum solani* (Hemiptera: Aphididae) at Six Constant Temperatures, With Recommendations on the Application of Temperature-Dependent Development Models” by S. E. Jandricic, S. P. Wraight, K. C. Bennett, and J. P. Sanderson, published in *Environmental Entomology*, Volume 39, Number 5, October 2010, pp. 1631–1642, the following corrections are noted.

Tables 2 and 8: The values for reproductive rate (R_o), intrinsic rate of increase (r_m), and subsequently doubling time (DT) and generation time (GT), were incorrectly calculated for *Aulacorthum solani* due to an error in application/summation of the Euler equation. These incorrect values were reported in Tables 2 and 8 and also appeared in the text of the abstract, results, and discussion sections. Tables with the corrected r_m , DT, GT and R_o values are reprinted here (with the inclusion of r_m , R_o and mean total adult fecundity at 30° C, which were not presented in the original paper). Additionally, r_m , DT and R_o were incorrectly reported for the Lee et al. (2008a,b) reference at 25 °C in Table 2; these values have also been corrected in the reprint of Table 2. In light of these errors, the last 2 sentences in the 7th paragraph of the discussion section (pg. 1640) should be disregarded.

Additionally, we restate, for the sake of clarity, that m_x (mean number of offspring per surviving aphid based on *age from birth*) was used in the calculation of r_m in the Euler equation, despite our visual presentation of fecundity based on *age of adult aphids* (day of adulthood) in Figure 3.

Table 3. The total nymphal mortality of *Aulacorthum solani* reared at 10° C was incorrectly reported to be 33.33% in Table 3 and in the text of the results section. The correct total nymphal mortality at this temperature is 18.52%, as only 5 aphids died during nymphal development (not 9, as reported in Table 3). However, the proper mortality data (censored for missing aphids) was used in the survival curve (Figure 2); therefore this figure is correct as is. Furthermore, the correct nymphal mortality was also used in the life table calculations (with missing aphids removed from the data prior to analysis).

Table 7. We would further like to clarify that the mean total fecundity at different temperatures presented in Table 7 (and also in Table 2, which compares our study with others) are the *least squared means* (i.e. adjusted means) of total offspring produced per adult aphid. In SAS, the least squared means were used in the general linear model and Tukey-Kramer test on multiple means due to an unbalanced design. Therefore, these numbers differ slightly from the arithmetic means (which were 74.59, 75.55, 69.42, 38.64 and 0.50, respectively, for 10, 15, 20, 25 and 30°C).

The authors would sincerely like to thank H. Chi for his contributions to the corrections of the errata.

Table 2. Mean total developmental times (\pm SE), intrinsic rate of increase (r_m), net reproductive rate (R_o), mean total fecundity, and doubling times (DT) of *A. solani* reared on various crops

Temperature (°C)	Crop	n	Total developmental time (days)	r_m	R_o	Total fecundity	DT (d)	Reference
2.0	Potato	41	0 ^a	—	—	—	—	Pozarowska 1987
5.0	Potato	50	63.15 \pm 1.08	—	—	45.3	—	Pozarowska 1987
10.0	Pansy	32	21.8 \pm 0.36	0.0955	60.8	74.4	7.26	This study
	Pepper	100 ^b	16.7 \pm 0.24	0.1240	59.2	—	5.59	Vasicek et al. 2001
	Soybean	20	20.2 \pm 4.50	—	—	—	—	Kim et al. 1991
	Lettuce	20 ^c	23.7 \pm 0.43	0.078	29.8	—	8.89	Vasicek et al. 2003
	Eggplant	20 ^c	21.8 \pm 0.62	0.089	42.0	—	7.79	Vasicek et al. 2003
	Pea	20 ^c	18.8 \pm 0.58	0.079	10.2	—	8.76	Vasicek et al. 2003
	Fennel	20 ^c	23.8 \pm 0.50	0.083	30.7	—	8.37	Vasicek et al. 2003
12.5	Lettuce	30	16.9 \pm 0.15	0.1292	36.3	—	5.37	Lee et al. 2008a, b
15.0	Pansy	32	11.4 \pm 0.26	0.1820	75.6	74.9	3.81	This study
	Lettuce	30	10.3 \pm 0.15	0.2284	58.7	—	3.04	Lee et al. 2008a, b
	Soybean	20	13.4 \pm 2.6	—	—	—	—	Kim et al. 1991
17.5	Lettuce	30	7.9 \pm 0.13	0.2631	35.4	—	2.63	Lee et al. 2008a, b
20.0	Pansy	32	8.4 \pm 0.30	0.2394	64.5	68.4	2.90	This study
	Lettuce	30	7.2 \pm 0.13	0.2747	33.8	—	2.52	Kim et al. 1991
	Potato	50	7.9 \pm 0.06	—	—	84.8	—	Pozarowska 1987
	Soybean	20	7.8 \pm 1.20	—	—	—	—	Kim et al. 1991
22.5	Lettuce	30	6.6 \pm 0.14	0.2625	17.9	—	2.64	Lee et al. 2008a, b
avg. 22.6	Potato	37	9.3 ^d	—	—	60.3	—	MacGillivray and Anderson 1958
25.0	Pansy	32	6.9 \pm 0.29	0.2478	37.2	39.1	2.80	This study
	Lettuce	30	7.4 \pm 0.30	0.1794	8.2	—	3.86	Lee et al. 2008a, b
	Soybean	20	7.0 \pm 1.0	—	—	—	—	Kim et al. 1991
27.5	Lettuce	30	0 ^a	—	—	—	—	Lee et al. 2008a, b
30.0	Pansy	32	9.5 \pm 0.83 ^c	-0.2367	0.074	1.89	— ^f	This study
	Soybean	20	0 ^a	—	—	—	—	Kim et al. 1991
35.0	Pansy	32	0 ^a	—	—	—	—	This study

^a All nymphs died before reaching adulthood at this temperature.

^b Data for 1 cohort (out of 4) were randomly chosen, as there were no significant differences among cohorts.

^c Data were chosen from the best performing cohort (of two cohorts).

^d No SE available.

^e Based on 4 nymphs that developed into adults.

^f Doubling time at 30 °C is not reported since a negative r_m value would yield a negative doubling time.

Table 3. Life table statistics of *A. solani* reared at differing temperatures

Temperature (°C)	r_m	R_o	GT	DT
10	0.0955	60.7778	43.0211	7.2603
15	0.1820	75.5517	23.7627	3.8085
20	0.2394	64.4642	17.4023	2.8953
25	0.2478	37.1538	14.5887	2.7972
30	-0.2367 ^a	0.07407	—	—
35	— ^b	—	—	—

r_m , intrinsic rate of increase; R_o , net reproductive rate; GT, mean generation time; DT, doubling time.

^a Only 1 aphid was able to reproduce at 30 °C, resulting in a negative r_m value; thus, GT and DT could not be calculated.

^b Values could not be calculated because no aphids developed at 35 °C.