

Effect of Apple Cultivar and of Temperature on the Biology and Life Table Parameters of the Twospotted Spider Mite *Tetranychus urticae*

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Development duration and reproduction rate of the twospotted spider mite *Tetranychus urticae* Koch (Acarina: Tetranychidae) were studied on five different apple cultivars ('Amasya' (local cultivar), 'Golden Delicious', 'Granny Smith', 'Starking Delicious' and 'Starkrimson Delicious') at 25°C, 65±10% r.h. and 16:8 L:D. In addition, the same parameters were determined on Golden Delicious leaves at three constant temperatures (20°, 30° and 35°C, 65±10% r.h. and 16:8 L:D) in the laboratory. *T. urticae* performed better on Granny Smith than on the other cultivars, due mainly to high daily egg production (4.6 eggs/♀/day) and the intrinsic rate of natural increase (r_m , which was 0.243 ♀/♀/day). The lowest r_m was observed on Amasya variety (0.231 ♀/♀/day). Development periods of immature stages of *T. urticae* varied from 6.5 to 15.5 days at 35° and 20°C, respectively, for females, and from 5.9 to 14.5 days at 35° and 20°C, respectively, for males. The development thresholds of the eggs and pre-adult stages, respectively, were 10.78° and 8.43°C, and total effective temperatures were 57.80 and 172.41 degree-days. Mean generation time (T_o) of the population ranged from 9.94 days at 35°C to 25.99 days at 20°C. The net reproduction rate increased from 66.99 ♀/♀ at 20°C to 92.19 ♀/♀ at 25°C, and decreased to 84.34 ♀/♀ at 30°C and to 12.04 ♀/♀ at 35°C. The highest r_m occurred at 30°C (0.302 ♀/♀/day) and the lowest at 20°C (0.161 ♀/♀/day).

KEY WORDS: *Tetranychus urticae*; development; fecundity; apple cultivars.

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