ABSTRACT

Effects of Roundup on Feeding Behavior of Larval Blue Dashers, *Pachydiplax longipennis*. KAYLEEN K. PARKER and CLAIRE FULLER, Biology Department, Murray State University, Murray, KY 42071.

Herbicides are widely used and prior research has shown that many herbicides are harmful to organisms and the environment. Herbicides enter aquatic environments through runoff or aerial dispersion from fields. The objective of this study was to determine if Roundup (active ingredient Glyphosate) causes negative effects on feeding behavior of larval *Pachydiplax longipennis*.Larvae were captured from rainwater-filled mesocosms at Hancock Biological Station in Murray, KY. Larvae were exposed to one of four concentrations of Roundup (0mg/L, 2.5mg/L, 5mg/L, or 10mg/L). *Daphnia* consumption trials were conducted at 7 and 14 days post-exposure. There were no significant differences among treatments for whether or not larvae ate offered *Daphnia* for Day 7 (χ2 =0.597, df =3) or Day 14 (χ2 =0.178, df =3). For the trials on Day 7, Roundup concentration did not have a significant effect on the time it took the larvae to consume 1, 2, or 4 *Daphnia*; however, exposure significantly increased the time it took the larvae to consume three *Daphnia* (P=0.036). For the trials on Day 14, concentration did not have a significant effect on the time it took to consume 1 or 2 *Daphnia*; however, Roundup significantly increased the time it took to consume 3 (P=0.010) or 4 *Daphnia* (P=0.029). Thus, Roundup slowed prey consumption, suggesting that it could have a negative impact on larval dragonfly predation and, consequently, their overall quality of life. More time to capture and consume food suggests higher energy usage during predation.