SNEHA REDDY, COLLEEN J NOLAN, and CAROL Z PLAUTZ, Dept of Biology, Shepherd University, Shepherdstown, WV, 25443. The Effect of Chemical Constituents in Roundup on the Steroidogenic Pathway of *Lymnaea palustris*.

We have investigated the effects of chemical constituents in Roundup on the steroidogenic pathway of *Lymnaea palustris*. Roundup, a commonly used herbicide that is found in run offs to streams, lakes, and ponds, contains the chemicals POEA (surfactant), Diquat Dibromide (DD), and Glyphosate. It has been established that chemical constituents in Roundup such as DD and Glyphosate alter reproduction in aquatic animals. We tested the effects of Roundup's active ingredients (DD and Glyphosate) on *Lymnaea palustris*, the common pond snail. Specifically, we monitored fecundity and tested whether chronic treatment of snails in DD and Glyphosate would alter estradiol and testosterone concentration levels, thus providing a possible explanation for the altered fecundity. The snails (n=12 for each group) were placed in 350 mg/L Glyphosate or 14 mg/L DD for 3 weeks. Testosterone levels were lower in DD groups ($p<0.05$). A trend of lower testosterone was also observed in Glyphosate groups ($p>0.05$). Estradiol levels were moderately higher in Glyphosate and lower in DD, but these differences were not significant and hormone levels fluctuated over the course of the study. The fecundity of the DD snails significantly decreased, while fecundity in Glyphosate snails kept pace with controls. We further analyzed steroidogenic pathway components by conducting Western blot analysis on abundance of aromatase, which converts testosterone into estradiol. Aromatase levels are typically reduced in DD treated snails but comparable to or higher than controls in Glyphosate treated snails, although levels are highly variable.