Quack Quack, What's in My Water? What Effect Does the Concentration of Salicylic Acid (Aspirin) Have on the Growth of Lemna minor (Duckweed) While Under the Stress of Glyphosate (Roundup)?

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Eighty percent of the streams around the country sampled contained residues of drugs (USGS, 1999). The question is: What effect does the concentration of salicylic acid have on the growth of Lemna minor while under the stress of glyphosate? Twelve dilutions of aspirin were made in Lake Superior treated water (60, 80, 100, 120 and 140 ppm). Six of these dilutions were mixed with eight drops (0.17g) of glyphosate. Five clear plastic trial cups were filled with 40 milliliters of each dilution and one set with just water and another with water treated water and glyphosate. Six plants were placed in each cup and the number of fronds recorded. After seven days the number of fronds was again counted and the percentage change in frond number was calculated. The first hypothesis: If there is higher level of aspirin (SSA) in the water, then the frond growth rate will increase was supported. The frond growth increased as the concentration of Salicylic Acid increased when the concentrations of 100, 120, and 140 mg/L were compared to the control, $p<.019$. The second hypothesis was if there is a higher concentration of aspirin in the water then the frond production, while under the stress of glyphosate, will increase. The second hypothesis was supported as the concentration of SSA increased the frond production increased while under the stress of glyphosate, $p<.09$. It appears the presence of SSA has positive effects on duckweed even while under this abiotic stress.