

**THE EFFECTS OF AMMONIA ON THE DEVELOPMENT, SURVIVAL,
AND METAMORPHIC SUCCESS OF
STROMBUS GIGAS VELIGERS**

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The Florida Keys queen conch population was once a vital fishery, but heavy fishing pressure forced the closure of the commercial fishery in 1976. Since the closure the recovery of the population has been minimal due to low recruitment of veligers. The queen conch larval stage lasts 2-6 weeks and during this time veliger survival may be affected by contaminants. Ammonia enters the water through sewage leaching and agricultural runoff. Ammonia is toxic to coral planulae, but toxicity of NH₃ to queen conch larvae has not been established.

This study examined the effects of NH₃ on new hatch, 5 days old, 10 days old, and competent veligers. The treatments tested were artificial seawater; natural seawater; and 1, 10, 100 and 1000 µM of ammonia. Development, mortality and an LC₅₀ was determined for each larval stage. Newly hatched veligers exposed to ammonia had a 15-30% increase in mortality over the control (after how many hours?). Five day old veligers had 100% mortality in the NH₃ treatments at 96 hours and an LC₅₀ of 0.8 µM. Ten day old and competent veligers were robust and able to withstand exposure to levels below 1000 µM, with LC₅₀'s of 429 and 576 µM, respectively. Metamorphosis was observed in all treatments (put a range here), with natural seawater having the greatest metamorphic success. This study reveals that exposure to NH₃ can compromise the development, survival, and metamorphic success of *Strombus gigas*. The findings of this study will assist in understanding the role ammonia has on recruitment of veligers in the Florida Keys.