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Abstract

Mosquitoes are known to choose oviposition habitats actively based on their suitability for survival of their offspring. They thus avoid laying eggs in dangerous habitats with aquatic predators through detection of their cues. Visual, tactile, and chemical cues emitted by certain predators have been shown to reduce oviposition in some mosquitoes, which in turn may affect their adult population sizes. However, those tests tend to be limited to species from temperate regions. Moreover, mosquito oviposition response to predator cues have been shown to be predator specific, but this has not been investigated for many potential predators worldwide. In the African subtropics, temporary ponds can be important mosquito breeding habitats and the same habitats are also used by a group of specialized killifish that can survive dry periods using drought resistant eggs. Although they are reported as mosquito predators, it is unknown whether mosquitoes actively avoid laying eggs in ponds with annual killifish. We investigated this using the mosquito *Culex quinquefasciatus* and the free and caged killifish *Nothobranchius neumanni* in the outdoor mesocosm experiments in Tanzania. We found that *Cx. quinquefasciatus* had 71% lower oviposition in mesocosms with free swimming killifish and 68% lower oviposition in mesocosms with caged killifish. We conclude that predator-released chemical cues alone are enough to explain the observed responses. If the cues can be isolated and chemically identified can be developed into a biological mosquito control strategy and used to safeguard public health in areas where mosquito borne diseases are endemic.