Auto-dissemination: A Novel and Effective Tool in Mosquito Control?

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Mosquitoes are small and deadly pests. They transmit various diseases, causing over 700,000 human deaths annually, making mosquito control essential. A novel mosquito trap, the In2Care trap, utilizes auto-dissemination (mosquitoes spread larvicide to multiple breeding sites) to control Aedes mosquitoes. While this trap has been tested in laboratory and semifield settings, field studies are rare. This experiment tests the trap's efficacy in a field setting. An In2Care trap was set up and sentinel cups were placed various distances from the trap, for two and eight-week periods. The cups' contents were poured into observation cups to observe larval mortality. If the larvicide was spread, death would be noted. However, the average adult emergence rate for each distance, the two-week cups, and the eight-week cups was over 80%. The expected emergence rate was 20%. Chi-square analysis was utilized to statistically analyze the data. Therefore, it can be concluded that the In2Care trap is ineffective in the field. This may be due to variables such as mosquito activity and the number of breeding areas outside. In the future, it would be interesting to determine how to improve the trap's efficacy, possibly by adjusting the amount of larvicide used or the number of traps in a certain area. These findings will aid vector control districts, private pest control, and their clients by informing them that the In2Care trap was ineffective in this scenario, allowing them to focus their efforts in other areas of mosquito control to better benefit the public and their health.