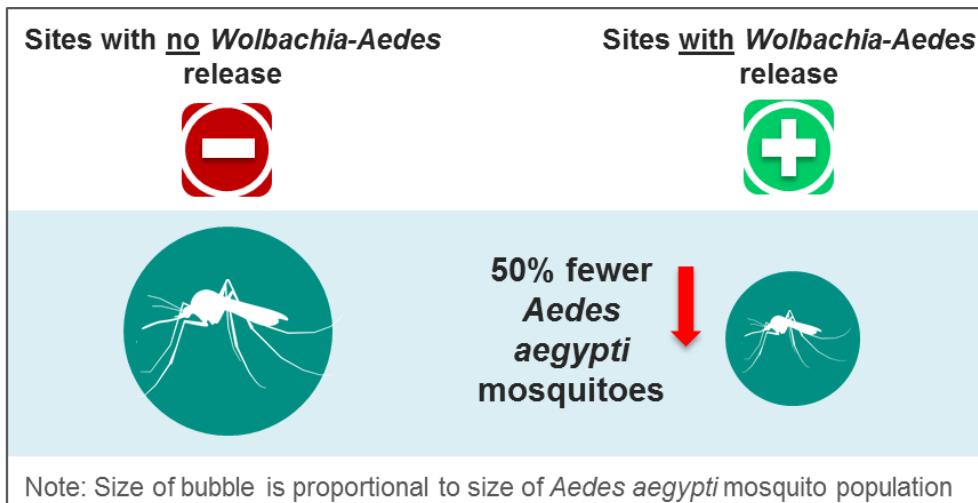


SUMMARY OF KEY FINDINGS FROM PHASE 1 WOLBACHIA FIELD STUDY

- 1) ***Wolbachia* technology has the potential to suppress the *Aedes aegypti* mosquito population in the community.**

At sites where the male *Wolbachia-Aedes* mosquitoes were released, much fewer *Aedes aegypti* adult mosquitoes were found.



*Sites had similar *Aedes aegypti* populations before the release.

*Fig. 1. Infographic showing the impact of male *Wolbachia-Aedes* mosquitoes on the urban *Aedes aegypti* population at the study sites*

At the release sites, half of the collected *Aedes* mosquito eggs did not hatch, which provided strong indication that the released *Wolbachia-Aedes* males had successfully competed with the urban *Aedes* males and mated with some of the urban *Aedes aegypti* females.

A larger reduction in egg hatch and adult population will be necessary to achieve suppression of the urban *Aedes* mosquito population. If we have lower levels of urban *Aedes* to start with, it will be easier to achieve this goal. Continued community effort in keeping the mosquito population low, especially during periods when weather conditions are conducive for mosquito breeding, is thus important to enable effective suppression through the release of male *Wolbachia-Aedes* mosquitoes.

- 2) **Singapore's high-rise and densely built urban environment poses unique challenges.**

- i. *Aedes aegypti* mosquitoes moved easily from surrounding areas into the release sites. This reduced the suppression effect of *Wolbachia-Aedes* at the release sites.
- ii. *Wolbachia-Aedes* released at ground level achieved less suppression for high-rise blocks that had more *Aedes aegypti* mosquitoes at higher floors.



Fig. 2. Infographic showing the easy movement and migration of mosquitoes at the study sites

- 3) More frequent releases can help keep the number of *Wolbachia-Aedes* males in the field more constant, and thus achieve better suppression effect.

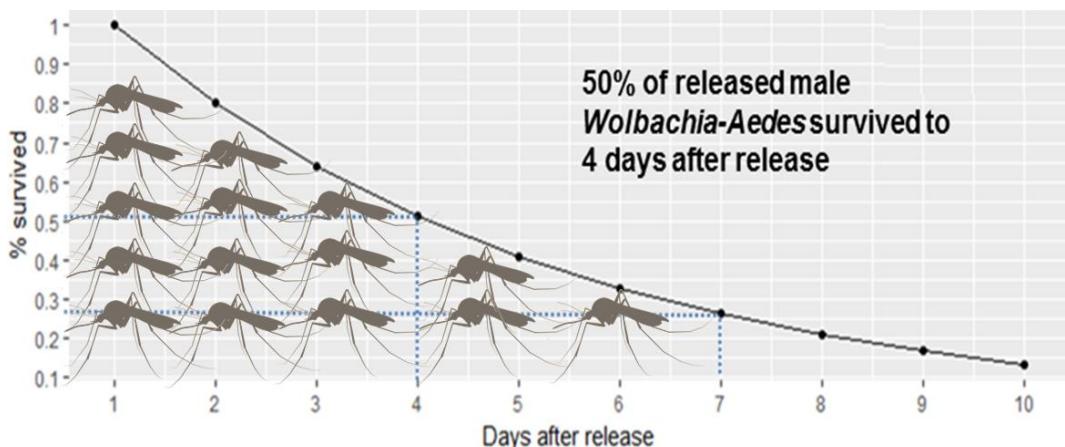


Fig. 3. Graph showing the lifespan of the released male Wolbachia-Aedes mosquitoes

- 4) Small releases of female *Wolbachia-Aedes* over time may eventually result in *Wolbachia-Aedes* taking over as the dominant mosquito strain, and hamper the continued use of *Wolbachia-Aedes* to suppress the *Aedes* population in those areas.

- i. Although only a very small number of female *Wolbachia-Aedes* mosquitoes may slip through the sorting process during production, the cumulative effect of successive releases over time may eventually result in *Wolbachia-Aedes* taking over as the dominant mosquito strain, and hamper the continued use of *Wolbachia-Aedes* mosquitoes to suppress the *Aedes* population in those areas.
- ii. Existing manual methods for removing female *Wolbachia-Aedes* mosquitoes, when production numbers are small, cannot be scaled up cost-effectively to cater for higher production numbers. Improvements to existing methods will have to be explored.

- 5) Further studies will help refine our release and deployment strategies to achieve better suppression effect. This is necessary to ensure we apply this new technology in the most effective way in our unique urban environment.