Lymphatic filariasis (LF) is the leading cause of disability in South Pacific regions, where >96% of the population are at risk. As part of the current global campaign, Mass Drug Administration (MDA) has reduced LF prevalence, but vector biology can complicate the MDA strategy. Obligate vector mosquitoes provide additional targets to break LF transmission, but existing methods are largely ineffective for controlling the primary vector throughout much of the South Pacific: Aedes polynesiensis. We demonstrate that interspecific hybridization and introgression results in an A. polynesiensis strain (‘CP’ strain) that is stably infected with endosymbiotic Wolbachia bacteria from Aedes riversi. The CP strain is bi-directionally incompatible with naturally infected mosquitoes, resulting in female sterility. CP males are equally competitive, resulting in population elimination when CP males are introduced into wild type A. polynesiensis lab populations. The results support the continued development of a vector elimination strategy to supplement ongoing MDA efforts.

Number of words in abstract: 150
Keywords: dengue - elephntiasis - insect
Technical area: Health Challenges in the Pacific: Infectious Disease, Non-Communicable Disease and the Health Workforce
Special session: Not specified
Presentation: Oral presentation preferred
Special equipment: No special equipment