Assessing quality control methods of commercially reared *Phytoseiulus persimilis* for biological control

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In 2024, we evaluated the quality of commercial *Phytoseiulus persimilis*, a key predatory mite used to manage twospotted spider mites (*Tetranychus urticae*) in California strawberries. Three evaluation methods were tested: the lab's original "Old Method," which uses a heated lamp to drive mites down onto sticky cards through a sieve; the International Organization for Biological Control's (IOBC) subsampling method to estimate live and dead mites; and a reverse Berlese method that uses light to draw mites upward (Fig. 1). Thirty bottles were assessed to compare mite recovery rates and method reliability. Using the Old Method, recovery dropped from roughly 70% in 2k bottles to 40% in 4k bottles. IOBC recovery ranged from roughly 50% to over 60%, with greater variability in the 4K bottles. The recovery using reverse Berlese method was consistent for 2k bottles, around 90%, but fell to around 60% in 4k bottles (Fig. 2). These preliminary results highlight the variation in quality and method reliability, emphasizing the need for continued testing.

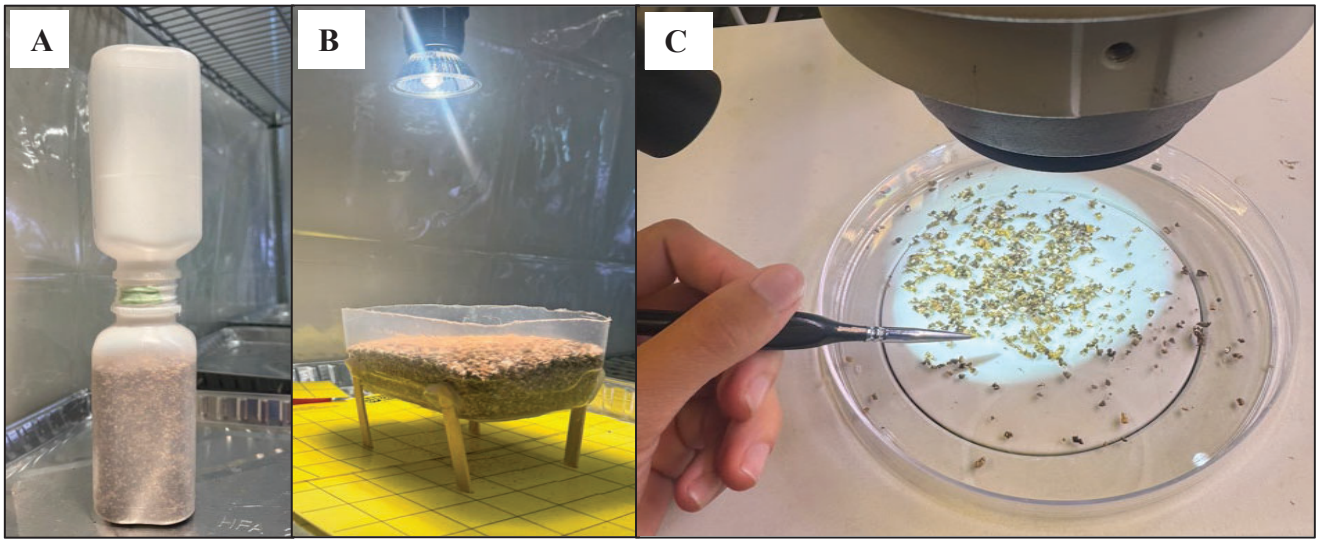

Figure 1. Methods used to assess the quality of *Phytoseiulus persimilis*: the reverse Berlese method (A), the "Old Method" (B), and the IOBC subsampling method (C).

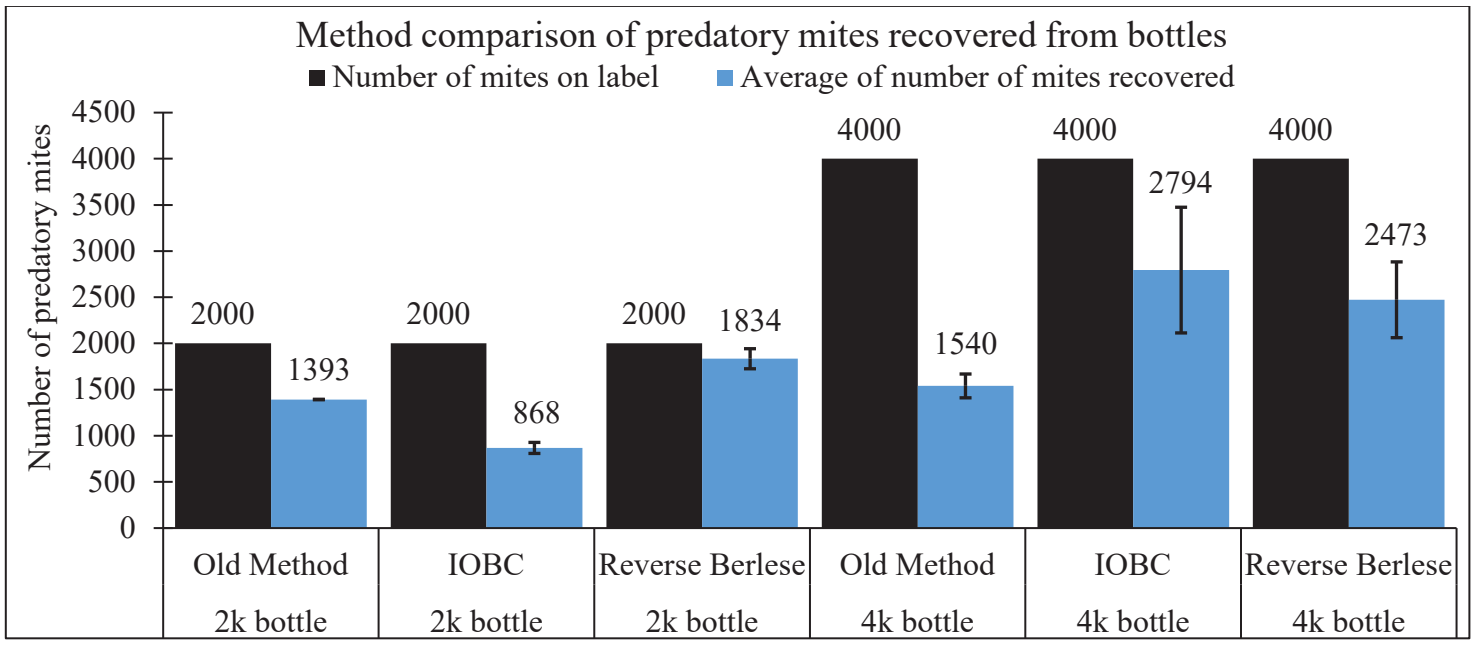

Figure 2. Comparison between the labeled number of mites (2k or 4k) and the average number of mites recovered using the "Old Method", IOBC, and reverse Berlese methods. Error bars represent the standard error of the mean. Data has not been analyzed for statistical differences.