The fitness cost of *Pseudomonas* on aphids measured through fecundity has only been demonstrated in aphid populations (Hendry, Clark, and Baltrus 2016). To assess the impacts of strain #22o on individual aphid fitness, a single aphid fecundity assay was performed. This experiment was separated into two rounds with the aim of better understanding the effects on aphid fecundity and survival that *P. pergaminensis* #220 has on individual winged alates. In round one, single, two-week old, *V. faba* plants were sprayed with the attractive *P. pergaminensis* #220 at an OD600 of 0.20 ± 0.02 in a consistent manner with the other experiments detailed above. Control plants were sprayed with 10 mM MgCl2 buffer. Plants were air dried for one hour, in which, one alate was collected for each experimental plant for a total of 40 alates. After drying, working one plant at a time, an alate was added to the base of the plant before being covered with a perforated plastic bag and secured with an elastic band. Pots were then arranged in an experimental tent maintained at 22° C ± 2° and 85% ± 10% humidity. Additionally, the tent was kept on a 16:8h light:dark cycle mimicking summer conditions to maintain parthenogenic reproduction in the aphids. The aphids were left undisturbed to for six-to-seven-days after being added to the tent.

After the six-to-seven-day growth period, the pots were removed from the tent and each plant was individually deconstructed to allow for accurate counting of aphid nymphs, location of the alate, and for sampling of epiphytic growth on the *V. faba* leaves. It was recorded if the alate was still alive and how many nymphs were present for each individual plant. 10 leaf disks were taken from across all leaves of the plant to ensure regions of the leaves where aphid honeydew was deposited was sampled. Sampling of epiphytic bacteria on each plant followed the same protocol as the epiphytic growth assay, with only the 10-2 dilution being plated in accordance with preliminary testing regarding producing countable colonies. All leaf washes were plated on KB plates with ampicillin and nystatin and only colony counts between 20-200 were counted. After deconstruction of each plant, if the alate survived, it was moved to another single *V. faba* plant ,that was not sprayed or altered, to begin round two. Each pot was again covered with a perforated bag and secured in the same manner as round one. All pots were then added back to the same experimental tent which continued to be maintained under the same conditions for another six-to-seven days of growth.

After the second growth period, the plants were deconstructed, alate survival was recorded, and nymphs were counted. All surviving alates were then sampled for *Pseudomonas* infection using the same protocol as in the ecological trap experiment, with the substitution of rifampicin with 30µg/mL nystatin in the KB plates used. An individual was similarly categorized as infected if five or more fluorescent CFUs were present two days later after