

Pollen deposition curve for bumble bees with alfalfa

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Patterns of pollinator visitation and pollen deposition may influence pollen transfer in sequentially visited flowers. The pattern of pollen deposition will determine how quickly pollen from a given donor is exhausted. Pollinators that deposit a greater proportion of the pollen collected from one pollen donor onto the first flowers visited in a foraging bout will have a more steeply declining pollen deposition curve. Pollen deposition curves with a steep decline may be associated with less gene flow. Pollen deposition curves were obtained in a greenhouse with common eastern bumble bees. Alfalfa plants transformed with the *Escherichia coli* β -glucuronidase (GUS) gene and carrying three alleles of the GUS gene were used as pollen donors in an experimental array with wild alfalfa plants. We counted the number of plants visited within each foraging bout, the number of racemes on a plant, and the number of flowers visited in succession per raceme. We recorded the distance traveled between each consecutively flowers visited in a foraging bout and the number of pollen grains containing the GUS gene deposited on each stigma. We obtained eight independent curves using a non-linear model. These data will contribute to describing pollen deposition curve for bumble bees and their potential for gene flow.