

THE BUZZ ABOUT BEES

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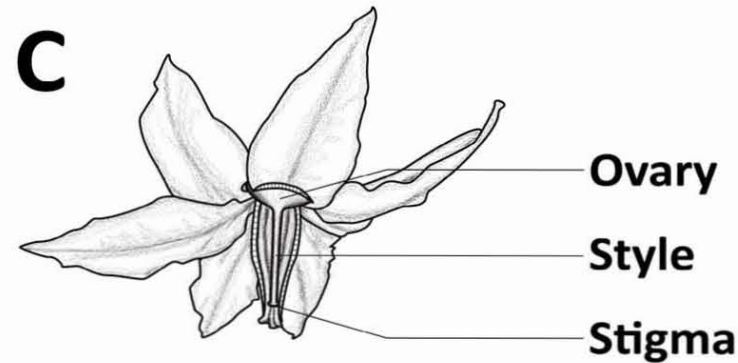
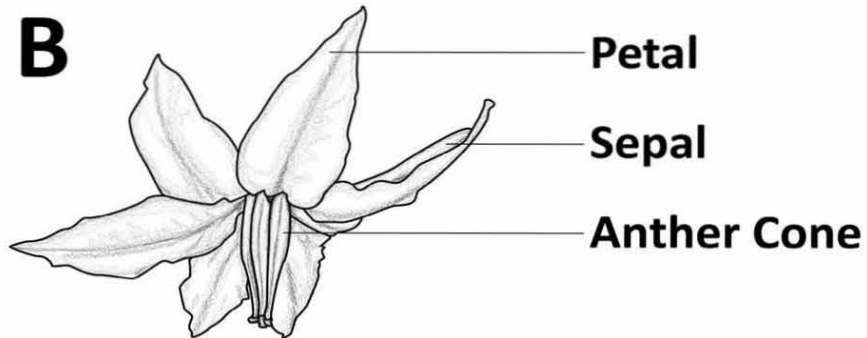


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Greenhouse Tomato Pollination




Buzz Pollination by *Bombus impatiens*

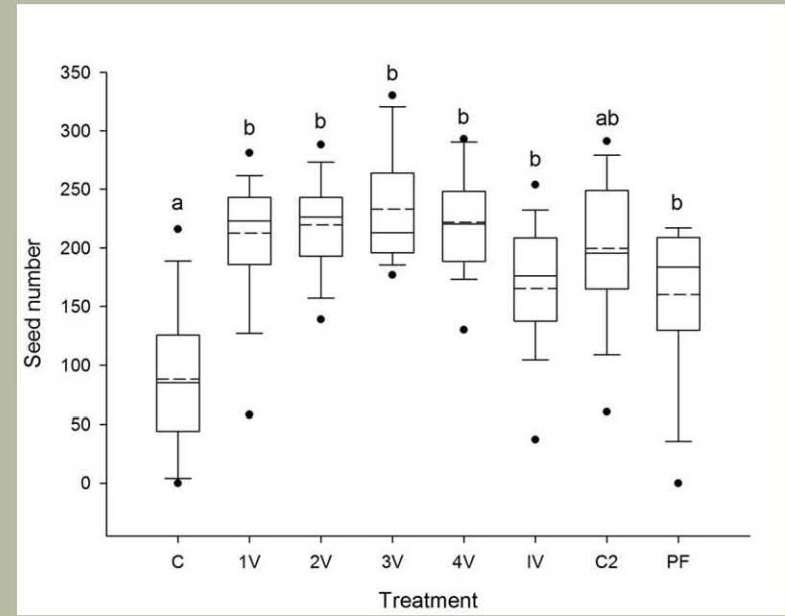
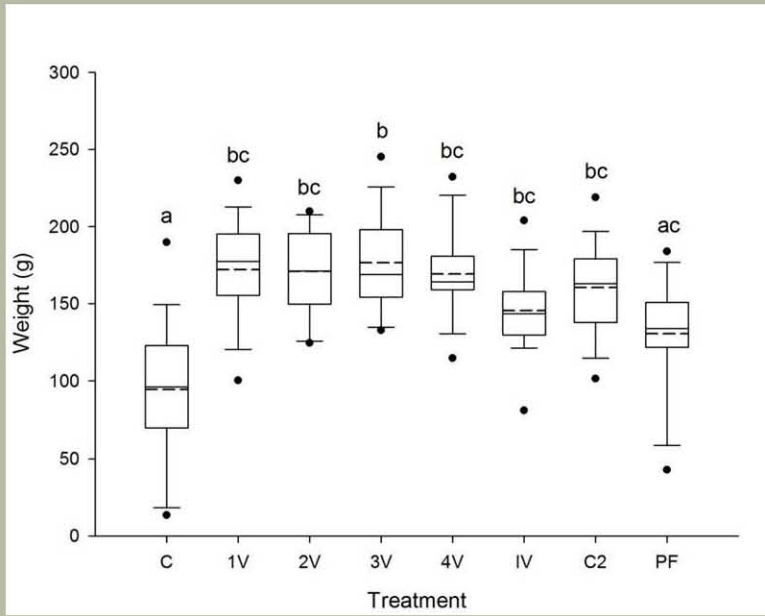


A. Morse

Objectives

- Determine the influence of the number of bee visits and duration on fruit quality
 - Determine the effect of vibration (buzz) physical characteristics (frequency and amplitude) on tomato fruit quality
 - Determine if *B. impatiens* is capable of evaluating pollen availability during buzz pollination
 - Determine if the buzz pollination physical characteristics are different for different plant species
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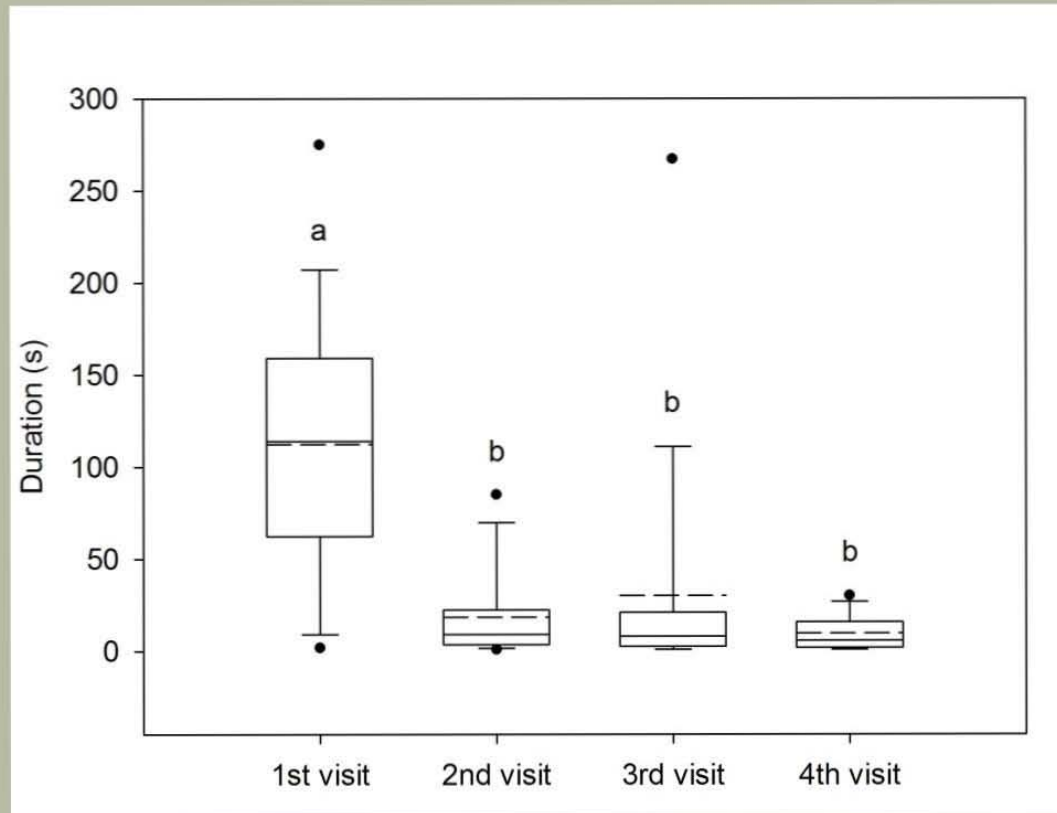
Influence of bee visits on fruit quality



Fruit weight resulting from non visited flowers (control – C), flowers that received one visit (1V), two visits (2V), three visits (3V), four visits (4V) and free visitation for eight hours (IV) and for one visit to flowers with silicon on their surface (control – C2) and with the anther cone pore blocked with silicon (PF). Dashed line: mean. Solid line: median.

Seed number resulting from non visited flowers (control – C), flowers that received one visit (1V), two visits (2V), three visits (3V), four visits (4V) and free visitation for eight hours (IV) and for one visit to flowers with silicon on their surface (control – C2) and with the anther cone pore blocked with silicon (PF).

Duration of the first, second, third and fourth visits of *Bombus impatiens* to tomato flowers. Same letters (a–b) indicate that those groups were statistically not separated (Friedman: $p > 0.05$). Dashed line: mean. Solid line: median.



- Mean number of pollen grains per tomato flower was $96,561 \pm 28,220$.
- After one visit, 58% of the pollen was removed.
- After four visits, 68% of the pollen was removed.

Laser doppler vibrometer was used to determine the vibration characteristics of buzz pollination

