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Introduction

Bumble bees have evolved in a manner in which they are unable to create their own wax, due to this the bumble bee has adapted in a way where they gather natural sourced wax and manipulate it to create protective linings over their nests. Due to this trait we are studying how bumble bee behaviors change with different types of wax, one being an artificial soft and manipulative style of dental wax and the other being natural bee's wax.

Methods

- 8 chambers labeled 1-8, each chamber has 4 bees.
- Each chamber has pollen patty in plastic tray. 4 chambers has artificial dental wax covering patty and 4 chambers have bees wax covering patty.
- each chamber has 1:1 glucose water mixture for sustenance.
- Ethogram used to observe state behaviors and wax-based behaviors.
- wax based behaviors (manipulation, inspection, pollen patty inspection) are timed.
- State behaviors are not timed.
- we had four conservation periods each 45 minutes long
- analyzed data through T-test.
- Used P-value of .05 as standard.

Results

- Wax manipulation was significant difference between the groups. P-Value: 0.01653
- Social interactions was almost significant. P-Value: 0.0792

Conclusions

Through our observations and analysis, we can determine that the bees were more interested in the artificial wax than the bees' wax. Our current presumption is that this is due to the artificial wax being a foreign substance.

Artificial dental wax



Natural bees wax



Figure 2 – General behaviors

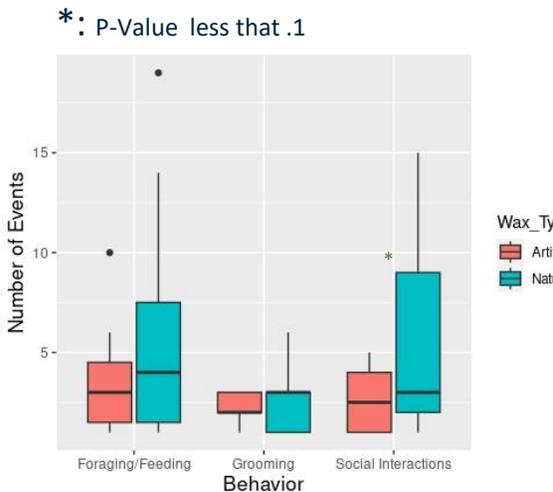
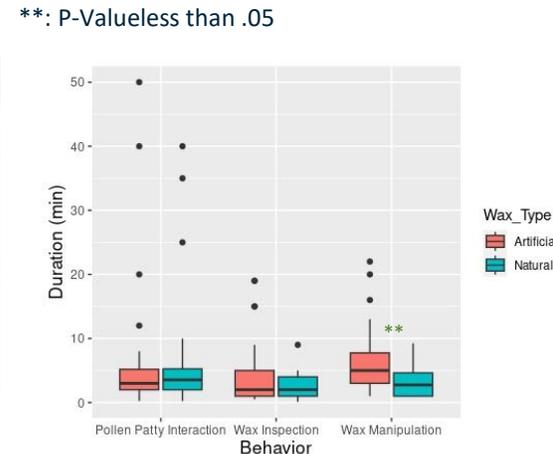


Figure 1 – Wax related behaviors



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