Behavioral adaptation to polylectism in bees

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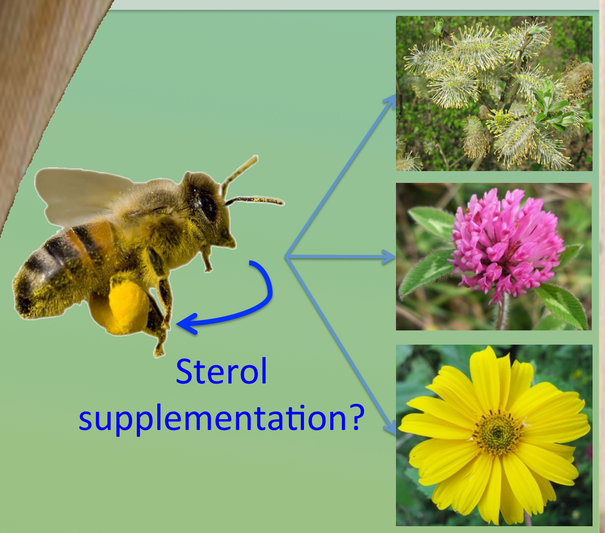
CONTEXT

Sterols are prime nutrients in pollen.
They are needed for cell membranes and molting but can not be synthesized de novo by bees.

As their contents are highly variable among floral species, they can constraint floral choices of generalist bees (i.e. polylectic).

STUDY

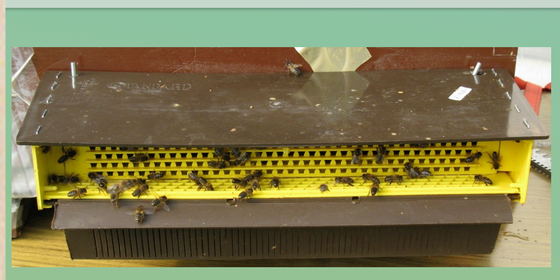


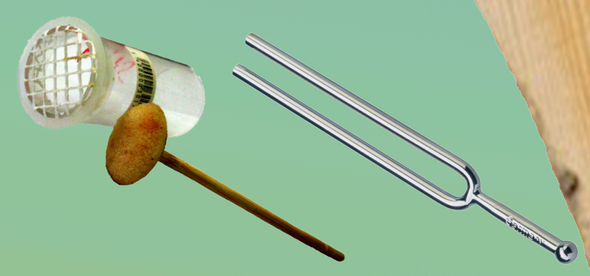
Question: how do polylectic bees cope with sterol variation to ensure larvae development?

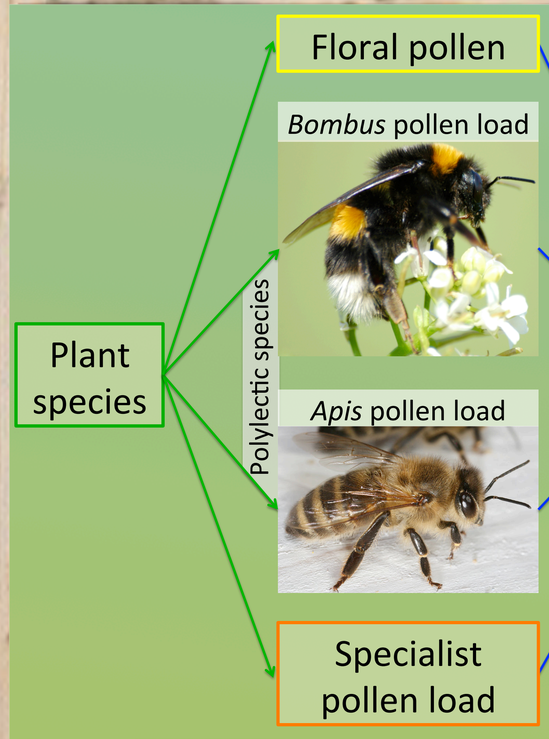
Hypothesis: Behavior of sterol supplementation in their pollen loads

Experiment: Comparison of sterol content of generalist pollen loads, specialist pollen loads and floral pollen

MATERIAL AND METHODS

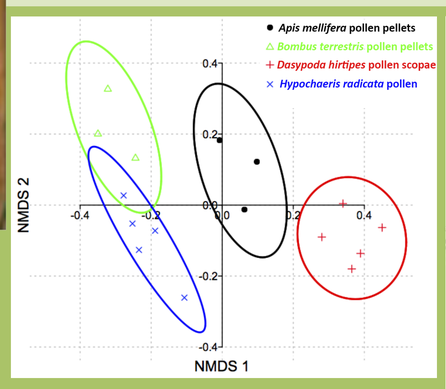






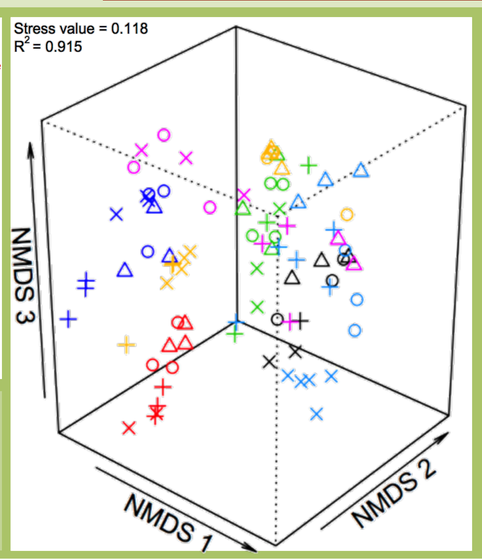
SPECIALIST MODELS AND THEIR HOST PLANTS

RESULTS AND CONCLUSION



Cholesterol: IC Value = 0,68

∂7-avenasterol: IC Value = 0,64



- Polylectic bees do not add any sterol in their pollen loads
- C27-phytosterols seem to be important for Melittidae family and probably played a role in wasp-bee transition
- *Dasypoda hirtipes* seems to supplement its pollen loads with cholesterol and delta7-avenasterol