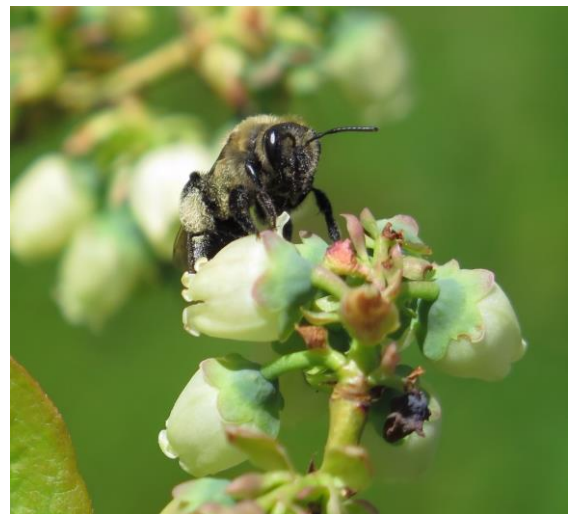


Variation in pollinator potential to carry a blueberry fungal pathogen and assessment of transfer efficiency in two managed bee species

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Many crops need pollinators to produce fruits or seeds. However, pollinators can also carry some diseases that infect crops when they come in contact with flowers. Highbush blueberry, is an economically important crop whose yield can be reduced up to 80% by mummyberry disease, which is vectored to flowers by pollinators. This creates a challenge for management since pollinators are needed to maximize yield but also vector a highly damaged disease. We collected floral visitors to blueberry plants and used molecular techniques to identify the visitors and measure how many pathogen spores were carried by each visiting species. We also conducted an experiment in cages to determine whether two commercially managed pollinator species, honey bees and bumble bees, differ in how many pathogen spores they transfer to flowers. We found that bees, flies, and wasps were all common visitors, and that all bee species and several fly and wasp species carried the pathogen. Of the bee species, honey bees were carrying mummyberry most often, although of bees that were carrying mummy berry, a solitary bee carried the most spores. Solitary and social bees carried more spores than flies. In cage trials, we found no differences between honey bees and bumble bees in terms of

transferring mummy berry to flowers. However, we noticed that honey bees were more inclined to forage on infected tissues, which may explain why they carried mummyberry most often in our field collections. This research demonstrates the variety of floral visitors that carry mummyberry and that two common commercial pollinator species have similar potential to vector mummyberry to blueberry flowers during a single visit.



Andrena bee visiting a blueberry flower.
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