Squash bees (*Peponapis pruinosa*) as pollinators of pumpkin and squash crops in the Ohio Valley

Squash bees are wild, native bees that can be harnessed to enhance pollination of *Cucurbita* (pumpkin and squash) crops.

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Biology of squash bees

- Squash bees consume all of their dietary pollen and most of their nectar from *Cucurbita* (pumpkin and squash) flowers.
- Squash bees are solitary. Each female bee excavates her own nest burrow in the soil, often directly beneath pumpkin and squash plants.
- In the Ohio Valley, squash bees are active from June to September, with peak activity in July and August.

Why harness squash bees?

- Squash bees are widespread and readily colonize pumpkin and squash fields, often in large numbers.
- When squash bees are abundant, they can fully pollinate a crop field each day in the first two hours after dawn. In these scenarios, there is no need for supplemental pollination by managed honey bees or bumble bees.
- Since squash bees are specialists on *Cucurbita*, they offer excellent pollination services to pumpkin and squash crops (however, they offer no pollination service to other crops).

How to distinguish squash bees from similar looking honey and bumble bees

- Squash bees fly much faster, and begin flying earlier in the day, around dawn.
- Squash bees have pale hair bands on their abdomens, and hairy hind legs (females) or long antennae (males).

Farm management practices that may benefit squash bee populations:

- Having natural habitat or urban landscapes surrounding crop fields, and grassy margins immediately adjacent to crop fields. These provide undisturbed nesting areas.
- Practicing no-till agriculture. Up to 50% of immature squash bees in their soil nests may be killed by tilling.
- Practice organic or low-pesticide farming. Squash bees may be harmed by pesticides, just like other insects.
- Having *Cucurbita* crops in the same vicinity from one year to the next.
- The website below contains a digital simulation that projects the population growth of squash bees, based on tilling practice and the locations of squash fields from one year to the next: http://ucanr.edu/squash_bees/