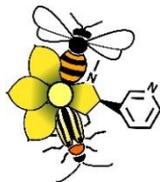


# Squash bees (*Peponapis pruinosa*) as pollinators of pumpkin and squash crops in the Ohio Valley



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



# 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.

**Honey  
bee**



© Swallowtail Garden Seeds

**Male  
squash bee**



© K.L.J Hung

**Bumble  
bee**



© USFWS

**Female  
squash bee**



© USDA

## 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/](http://ucanr.edu/squash_bees/)