



# Greenhouse Sweet & Hot Peppers

*Capiscum annuum*



## Mating & Breeding System

Cultivars of this plant include both sweet peppers and many varieties of hot peppers, all originating from Latin America. This information is largely limited to sweet bell peppers, since production of hot peppers in Ontario rarely reaches a commercial scale beyond local markets. However, much of the information still applies to hot pepper varieties. Hot pepper growers who prefer controlled cross-breeding should take steps to prevent open pollination.

Pepper flowers are self-fertile, and most flowers can set fruit without cross-pollination. Even so, peppers still produce both pollen and nectar. The style is generally longer than the surrounding stamens, and the stigma is usually receptive prior to the release of pollen.

Like many members of the Solanaceae plant family, peppers require physical agitation by wind or “buzz pollinators” to release pollen from porous anthers.

## Pollination, Quality & Yield

Although it is known that fruit set and yield are related to the bearing capability of the plant, researchers in different parts of the world (including Ontario) have found significant increases in fruit weight, fruit size, and seed number in greenhouse-grown hot peppers pollinated by bumble bees. Interestingly, similar improvements were found with the drone fly *Eristalis tenax* (Syrphidae), even though the fly does not buzz-pollinate.

## Pollination Recommendations

In windless greenhouses, insect activity is generally required to facilitate both self- and cross-pollination in pepper crops. While it is possible to use honey bees in greenhouses, they do not like the still air and tend to try to escape to forage outside. In addition, honey bees are not capable of buzz pollination.

Commercial availability of bumblebees (*Bombus impatiens*), which are excellent buzz-pollinators, is now fully established in Ontario. A single hive of bumble bees can pollinate 3000 square meters of greenhouse sweet peppers.



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## References

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