



# Buckwheat

*Fagopyrum esculentum*



## Mating & Breeding System

Most production of buckwheat in Canada takes place in Manitoba. Ontario grows buckwheat on about 6,000 acres. Buckwheat has two different types of flowers—pin flowers and thrum flowers. Both have only one ovule. Pin flowers have short stamens with a long style, and thrum flowers have long stamens and a short style. A plant will usually produce only pin flowers or thrum flowers, mechanism that helps promote outcrossing. Stamens are organized in an inner and outer ring. An insect foraging for nectar must pass between the two rings, and gets covered in pollen in the process. Depending on whether they are foraging on pin or thrum flowers, insect visitors will get pollen on the part of their body that is most likely to touch the stigma of the opposite flower type during foraging.

## Pollination, Quality & Yield

Under good growing conditions, buckwheat produces abundant nectar with a very high sugar content. Honey bees are enthusiastic foragers of buckwheat flowers, and a highly desirable dark honey is produced by their efforts.

## Pollination Recommendations

In large fields and in areas where wild pollinators are lacking, it is advisable to add honey bees. The optimal stocking rate is estimated at 2-5 hives per hectare. While buckwheat will benefit from multiple insect visits, pollen tube growth and fertilization tends to occur very quickly (i.e., in 5-20 minutes, depending on flower type). Honey bees work the flowers very quickly, spending only a few seconds at each, and thus probably saturate the field at the above stocking rates. Other pollinators should still be encouraged, as honey bees tend to concentrate on thrum flowers (which produce more nectar), and they are not especially efficient at transferring pollen between thrum and pin flowers. Much of the existing research on buckwheat pollination is from Europe and Russia. Modern varieties, which may have different degrees of self-compatibility and nectar production, should be studied under Ontario conditions. Buckwheat could have an important role as a high quality honey plant and as a source of nutrition for wild pollinators of all types servicing other crops.



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