

About the Project

BC Bee Breeders' Association Queen Testing Project Assessing Sustainable Honey Bee Stock in British Columbia 2006 to 2008

The Varroa mite has taken a large toll on BC hives in the past few years. Conventional treatments are no longer restraining the growth of this pest and the subsequent havoc it so often brings to the honey bee immune system. Clearly integrated Varroa mite management must change. The BC Bee Breeders' Association (BCBBA) believes that the long-term answer for controlling this pest is to find bees that can successfully resist the mite.

Queen breeders across Canada have initiated programs to achieve this goal. The BC Bee Breeders' Queen Testing Project intends to define which stocks perform best under BC conditions and management techniques. Commercial BC beekeepers emphasize early spring build-up for both nuc and package bee sales, and for fruit and berry pollination while not compromising honey production.

The project has two goals. These are to test Varroa-resistant stock in BC conditions to distinguish which queens merit further selection. And secondly to produce daughters from the best queens, making these available for sale to BC beekeepers. The beekeepers will then trial the queens and incorporate the more resistant stock into their operations.

The sponsors for the BCBBA Queen Testing Project are: the BC Honey Producers' Association (BCHPA), the Beekeeping Industry Development Initiative (BIDI), the BCBBA itself, Honeybee Centre, Jinglepot Apiaries and Kettle Valley Queens. Funding for the project is 50% by BIDI, 25% from the BCHPA and BCBBA and 25% from the Honeybee Centre, Jinglepot Apiaries, and Kettle Valley Queens. \$119,611 has been budgeted for the three-year project; this includes in-kind donations of material and labour.

The experimental queens are from the Saskatraz Project, Pedersen Apiaries, John Gruzka, Dr. Szabo, Bruce Smirl (from Dr. Currie's work at the University of Manitoba), Francois Petit and two BC stocks known to have survived high Varroa levels for two seasons. The project also includes three control lines from: a Vancouver Island breeder, a southern BC breeder (this line is known to be susceptible to Varroa mites) and a well known non-Canadian queen producer. The controls will provide baseline data on honey production, winter survival and other key traits with which to compare the experimental stocks.

The BCBBA Queen Testing Project started in Grand Forks, in May of 2006. One hundred and five packages treated with fluvalinate strips were established in three geographically remote yards. In July the package queens were pulled and the experimental queens, with the addition of twenty Varroa mites each, were introduced into the project hives. The hives were monitored monthly from May to

October for Varroa mites using the natural drop detection method. A fall assessment measured the area of brood, pollen and honey in the bottom brood chamber frames, as well as the cluster size.

In 2007 the hives were monitored for overwintering ability, spring build-up, honey production, cluster size, Varroa levels, hygienic behaviour, temperament and fall brood area. In 2008, daughter queens from hives with low Varroa infestation, good economic characters and high hygienic ability will be produced for BC beekeepers.

If the project queens show high promise, then BC Bee Breeders' will be enlisted to maintain these selected lines. These breeders will also be encouraged to carry out further testing of other promising stock.

This Varroa resistant breeding project is just one of several happening across Canada. To better pool our resources and information, it's occurred to us while carrying out this project that the formation of a national queen breeders' group would be of benefit.

Elizabeth Huxter
Kettle Valley Queens
BIDI Queen Testing Project Manager
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