



**National Bee
Diagnostic Centre**
Technology Access Centre

PO Box 1118
Beaverlodge, AB T0H 0C0
Ph: 780-357-7737
Email: NBDC@gprc.ab.ca
www.thenbdc.ca

March 22nd, 2016

Mr. Jake Berg
President
Saskatchewan Beekeepers' Association

Mr. Simon Lalonde
President
Saskatchewan Beekeepers Development Commission

Box 441, 101 South Ave E, Hafford
Saskatchewan, S0J 1A0
P: 306-314-9571
E: info@saskbeekeepers.com
www.saskbeekeepers.com

Dear Jake and Simon,

This letter is to address the concerns expressed by the SBA-SBDC Executive Board regarding your letter of January 27, 2016 in which you decline participation on behalf of your members in the 'National Honey Bee Health Survey' project conducted by the NBDC-TAC. I do feel it is important to take the opportunity to address some of your specific concerns related to the project:

1. *Timing of Sampling.* Samples are taken during mid- summer (July – August) when colony populations are at their peak and are not being treated for pests or diseases, allowing meaningful comparisons among regions and provinces during the same “window” in the season. Be aware that this type of survey is certainly not intended to replace beekeepers' evaluations of their own bee yards in spring or fall to make treatment decisions, but is meant to provide comparative health evaluation of colonies, particularly at a point in the season when mite and pathogen levels have the potential to build, but before they are treated. Ideally, a study such as this might sample at more than one time per year, but this would far exceed our projected budget based on the scope of the project.
2. As mentioned above, samples are being drawn from colonies when populations are at their peak, providing a comparison at a similar time point in colony development over the season. Calendar dates for sampling within this window may vary slightly, as seasonal growth



patterns vary by region across the country, especially for those regions with earlier spring conditions than the Prairies.

3. Our efforts to date have exclusively used trained personnel to collect all samples rather than relying on beekeepers themselves. This ensures the integrity of data collection and consistency in the way samples are taken. Within each province these personnel have been drawn from provincially-certified inspectors, technical transfer team members, the NBDC-TAC staff members, AAFC's bee technicians or other personnel recognized by provincial apicultural programs. In all cases, technicians are trained to follow a detailed sampling protocol to ensure consistency and repeatability.

In addition, you expressed concerns from our previous research projects presented by the NBDC-TAC staff at the SBA annual meetings.

1. The high sperm count from a queen spermatheca sample, from our project 'Queen Health Evaluation in Local and Imported Stock', was statistically determined to be an outlier (a piece of data that is very different from all the others in a set). As no residual sample was available for re-analysis, it was removed from the dataset. Of interest, the average sperm count in the study, which includes a large number of local and imported queens, was 5.5 million with counts as high as 9.2 million in some samples. This range of values is consistent with the scientific literature.
2. With respect to your questions about SBV infection, prevalence in honey bees varies greatly among regions and countries. In fact, this is precisely why we are doing a survey in Canada – to find out what our baseline levels of pathogens are across the country. The prevalence of SBV has been reported to be as low as 2% in Hungarian and United Kingdom apiaries and over 80% in Denmark and France (Baker & Schroeder, 2008; Tentcheva et al, 2004). The NBDC diagnostic data has found that it is very common in Canada as well (>80% incidence). SBV has been found in virgin queens (3%) and mated queens (29%) in France (Gauthier et al., 2011), and levels as high as 69% in queens from surveys in the US (Chen et al., 2005). Therefore, it is not surprising for us that the queen stock evaluated in our project had an infection rate between 27% and 36% which is entirely consistent with SBV being very common in North America apiaries.

Beekeepers are asked to participate in the 'National Honey Bee Health Survey' on a voluntary basis assuring the confidentiality of their results. They have been informed that incidences of reportable diseases will immediately be brought to the attention of their Provincial Apiculturist (PA). Regional and provincially compiled data will be available to the PAs and the general public once data is processed and a report is generated. No individual raw data is shared with any group, in order to protect beekeepers' privacy, but beekeepers are free to share their confidential report with their PA. Regionally summarized data can also be used to provide context for recommendations and area-wide management decisions.



**National Bee
Diagnostic Centre**
Technology Access Centre

PO Box 1118
Beaverlodge, AB T0H 0C0
Ph: 780-357-7737
Email: NBDC@gprc.ab.ca
www.thenbdc.ca

This project was initiated by desires of the Alberta and Manitoba Beekeepers who saw a national survey as a worthwhile goal to support bee health initiatives. Their application to the second intake on the GF2 program provided a very short window of opportunity to complete a grant submission. Ideally, more extensive consultation with every region in the country would certainly be desirable before the application was made, but this was simply not possible based on the timelines available. Nevertheless, because of the expanding nature of the project we have been successively reaching out and speaking to every province, PA and provincial association to explain the proposed objectives and work in the survey. This has included presenting the project to the SBA on several occasions over the last few years.

In order to complete a truly Canadian sampling set, we feel it is important for Saskatchewan to be represented. All other provinces will be sampled during the summer of 2016. The benefits of the data gathered and produced in the survey transcend regional or provincial boundaries. Indeed, similar initiatives are being carried out in most first-world countries. The involvement of Saskatchewan beekeepers will ensure they are given access to the same quality information that others are receiving across the country. This information is provided at no cost to participants and the data generated will ideally complement the province's existing programs.

This survey will represent a first baseline of pests, parasites and diseases affecting the honey bee industry in Canada, and may prove to be a progenitor for a more permanent national monitoring system in years to come. The NBDC-TAC hopes your Association will reconsider its participation and recognize the benefits of assessing Canadian honey bee stock in a standardized and systematic way.

Sincerely,

Carlos Castillo, PhD.
National Bee Diagnostic Centre
Grande Prairie Regional College
Beaverlodge Research Farm
AB T0H0C0



References

Baker A, Schroeder D (2008) Occurrence and genetic analysis of picorna-like viruses infecting worker bees of *Apis mellifera* L. populations in Devon, South West England. *J. Invert. Pathol* 98: 239-242.

Tentcheva D, Gauthier L, Zappulla N, Dainat B, Cousserans F, et al. (2004) Prevalence and seasonal variations of six bee viruses in *Apis mellifera* L. and *Varroa destructor* mite populations in France. *Appl Environ Microbiol* 70: 7185-7191

Gauthier L, Ravallec M, Tournaire M, Cousserans F, Bergoin M, et al. (2011) Viruses associated with ovarian degeneration in *Apis mellifera* L. queens. *PLoS ONE* 6(1): e16217. doi:10.1371/journal.pne.0016217

Chen YP, Pettis JS, Feldlaufer MF (2005) Detection of multiple viruses in queens of the honey bee *Apis mellifera* L. *J. Invert. Pathol* 90: 118-121