



BVS, Inc has been providing screening services to beekeepers since 2008. BVS, Inc is located in Florence, Montana (just south of Missoula). We are using the IVDS technology that was licensed to BVS, Inc. from the Army's Edgewood Chemical and Biological Center. This technology makes rapid and inexpensive virus detection available to the public through the BVS, Inc. license from the Army. BVS has several projects that have demonstrated the utility and capability of IVDS funded through Project Apis m, the Almond Board of California, Montana, Idaho and California State Associations and several individuals and other groups. Dave Wick the CEO of BVS, Inc has made presentations at the state and national conventions over the last three years. We are currently working on nutrition and essential oil projects to evaluate the effect on viral loads in honey bees.

BVS is also working on a virus screening project that may be of interest. It would be very beneficial to map the distribution, frequency, diversity and intensity of the viral loads around the country. The data would show trends and relationships of bee viral loads to other factors, it could also serve as a tool for management. The request is for as many hobbyist beekeepers as willing to send in at least one sample for the year and if possible 3 samples for the year, (as early as possible, midsummer, and early fall). Because the project is being offered nationwide and will involve many samples I think it is best to ask each participant to pay \$50 for each sample they send, the data will give the beekeeper a snapshot of their colony(ies) and will give a composite picture regionally and nationally of the bee viral data that applies to so many other interactions involving bees. I am asking for aggregate samples from as many beekeepers as possible. This could be a part of the ongoing screening that is also underway and the 3 samples per season will lend itself to single apiary monitoring as well.

My reasoning and concept of the ongoing screening is as follows; It is well documented that bees carry viruses. Many of these viruses are latent in the bees (J. Chen – USDA ARS). The popular and current virus testing only indicates the presence or absence of viruses, with some exceptions for indicators of higher levels. These methods are time consuming and expensive to use in order to be comprehensive. The method I am presenting and using is a shift from the other methods. I use this technology licensed from the Army that counts individual virus particles and produces a reading of all intact viruses both in concentration (counts) and in diversity (different types of viruses) in one test. When bees are stressed by various conditions (shipping, weather, poor nutrition, pests, Nosema, pesticides, treatments to control pests and Nosema... etc.) the viral load (diversity and counts) changes, the latent (inactive) viruses often become active, the normal counts increase and sometimes the increase is enough to overcome the bees and they die or they just don't thrive. So with screening you can see the health of the bees by monitoring the normal viral load and the stress related changes in that viral load. The treatment for a bad situation is anywhere from "stop doing what you are doing....", to "way to go", and better timing of multiple treatments, better nutrition schedule, and the use of essential oils and more.

All that to say monthly aggregate monitoring is the best application of our technology, and at a good price for the return. I recommend 6 aggregate samples per month for commercial beekeepers, 1-2 samples per month for smaller scale beekeepers or even the 3 samples per season as stated above. The cost for the samples is \$50.00 per sample. Aggregate samples are about 200 bees (foragers) in a zip lock baggie (do not add anything else) making up a representative sample from a yard (bees from 3-6 colonies) . Mail via USPS flat rate box (about \$5.00) to:

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5501 Hwy 93 N., Suite 6
Florence, MT 59833 referenced

But back to the main point of my email, I am asking for individual beekeepers (hobbyist) and small commercial operations to help map the bee viral load regionally, and nationally. Thank you for your help, and if you need more information please call or email me at 406-369-4214, mrwick@bvs-inc.us

Best regards,
Dave

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