

The Bee Informed Partnership
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The BIP Box – Posted Dec 26, 2016

Getting ready for the season

After working through samples even in December, we look forward to a short window of time where we prepare for the upcoming almond season, reflect about what we've done in the past year, and strategize how we want to move forward. It has been a busy and exciting year for the Bee Informed Partnership and we are learning and maturing as an organization. There is still much we want to do but having some quiet time to just think is refreshing. We are excited to gather at the American Beekeeping Conference in Galveston and spend a few days face to face with all our technical transfer teams and debrief from this hectic year. It is rare, happening only twice a year, that we get to meet all in one room so it is a bit like the holidays all over again.

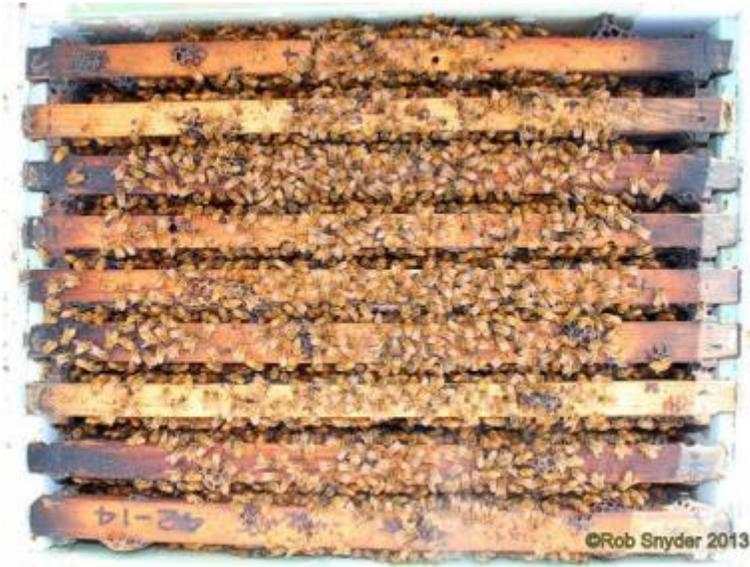
Stakeholder meeting

For those of you who are involved with our technical transfer teams, please do come to our Stakeholder meeting on Saturday (January 14th) from 9-11 to learn about some of this year's case studies. If you are thinking of joining a tech team and want to learn more about them, please stop by as well. It is a great time to meet our teams as well as many of the beekeepers already involved.

BIP Data hot off the press:

Since this time of year is when we hope that bees are well prepared for winter and going into almonds strong, we've prepared the average varroa and nosema data a little differently. Fall is a challenging time for some beekeepers so we wanted to take a look at fall (October-December) averages from last year compared to this year. In addition, we are finding that frames of bees (something we record in every colony assessment) help inform the data much better than those two averages alone. Averages for nosema and varroa loads across all tech teams in the October-December timeframe are 0.29 million spores/bee and 1.69 mites/100 bees respectively. This represents an almost 16% increase in varroa mite loads from last year during this same time frame and a 30% decrease in nosema spore load for the same period. Looking at

frames of bees across all tech teams in the October-December window, the value is ~7.6 frames of bees and this represents a roughly 10% decrease from last year's fall value of 8.4 frames of bees.



Estimating frames of bees. In this box, the bees appear as if they are in a circle, with the densest part in the middle. There are 9 total frames, with about 7 totally covered in bees and the outer 2 partially covered. In this case each of the outer 2 frames is counted as a half. This box has 8 frames of bees.

Photo by Rob Snyder, courtesy of the Bee Informed Partnership.

The BIP Box – Posted Nov 18, 2016

A Time of Thanks and Giving

The Bee Informed Partnership is entering into a time of growth. We are receiving requests from commercial beekeepers to expand the technical transfer teams to other areas of the country. For this, we are grateful. We are excited to continue to serve some beekeepers who have been with us for more than 5 years and we are thrilled to meet new participants. We truly have the best job in the world. As our teams try to service as many beekeepers as possible, additional funds are needed to create new teams, get them on the ground and working with more operations because **we know that they have a measurable impact**. For the first time, we are trying our hand at a crowdfunding campaign to raise money in support of the new and current teams. As the holiday season approaches, if you have someone in your family who has everything and cannot think of what to give them, think of us. **Your gift to support our teams will also have a measurable impact**. Every dollar will go into the support of one of our teams and since we are a nonprofit, your gift is fully tax deductible. Here is the link to donate or share our campaign: <http://igg.me/at/beetechteams>

We all want to make a difference and now you can. Thank you from all of us.

BIP Data hot off the press:

Averages for nosema and varroa loads across all tech teams thus far in November are at 0.18 million spores/bee and 0.79 mites/100 bees respectively.



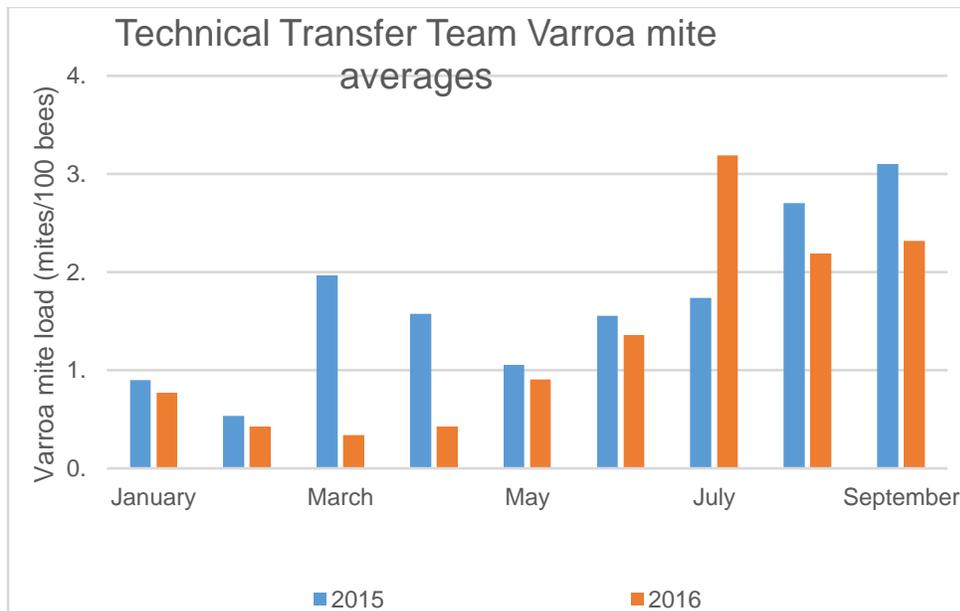
Ben Sallmann (CA tech team) trains new tech team members to assess a colony in Texas. *Photo courtesy of the Bee Informed Partnership.*

The BIP Box – Posted Oct 21, 2016

The sampling season is winding down

October is usually the month when our samples start slowing down as beekeepers finish treatments, extract honey and start buttoning up their colonies for winter. This year has been a little different and most of our technical transfer teams have been able to sample well into October. This big push in the fall brings our sample number to 8,675 varroa samples and 8,675 nosema samples for a total of over 17,000 samples just from the technical transfer teams alone.

With this amount of data, we can begin to do trend analysis not only between regions but as an overall health indicator. Fall trends are something we particularly pay close attention to as varroa levels are usually a good measure of how well bees will fare over the winter. A positive trend going into the winter of 2016 is illustrated below. We can see that for this year, **the averages from all 5 technical transfer teams** are lower every month, with the exception of July, and specifically for the months of August and September. We will be keeping a very close eye as we close out October and November to see if those values stay below last year's values.



To indicate how low these values are, we can compare them to the APHIS National survey samples. September varroa averages from the APHIS national survey indicate a varroa mite load of 6.02 mites/100 bees, a value that is more than 2.6 times the value we are seeing from commercial beekeepers in our technical transfer teams this year.

BIP Data hot off the press:

Averages for nosema and varroa loads across all tech teams thus far in October are at 0.09 million spores/bee and 1.09 mites/100 bees respectively, with the varroa significantly lower than last month.

The BIP Box – Posted Sept 20, 2016

BIP Technical Transfer Teams are expanding!

Our Bee Informed Partnership Technical Transfer Teams are the eyes, hands and heart of our organization. Through them, we are able to work and collaborate directly with ~90-100 commercial beekeepers around the country. We currently have 5 teams and are looking to fill some slots within those teams and perhaps start a few new teams. If this work interests you and you think you have the skills, please contact us directly. For more information on the requirements for this posting, please click [here](#). If you know of someone who may be interested, please send them this information. Applications will be received until Friday, September 30th.

New York Sampling

Earlier this summer, the Bee Informed Partnership was asked to help the New York Department of Agriculture sample 30 beekeepers throughout the Empire State. We have had the good fortune of working with [Dr. Scott McArt](#) (Research Scientist, Cornell University) and [Emma](#)

[Mullen](#) (Cornell University Honey Bee Extension Associate) to provide this service with the goal of helping them determine how beekeeper management practices are related to disease levels and honey production. Dan Wyns of our Pacific Northwest team at Oregon State University, in addition to Andrew Garavito from our UMD lab, hit the road for 2 weeks in September. The days were long, but we got to meet such a great range of beekeepers with varying management practices in very different landscapes. Surprising to those of us from Oregon and Maryland was the intense nectar flow in and around Ithaca due to the proliferate goldenrod, aster and Japanese knotweed (a highly invasive species related to buckwheat). Knotweed is also known locally as bamboo due to its hollow stems and raised nodes. Many colonies had 2-3 supers on in this area to capture this intense flow, and bear fencing seemed a requirement in most remote locations.

We were able to meet 10 commercial beekeepers in NY and hope that if all goes well a Technical Transfer Team serving this community, as well as others along the East Coast may be on the ground soon.

Honey super near Ithaca, New York in mid September. Note the reddish brown honey from the goldenrod and Japanese knotweed. Photo courtesy of the Bee Informed Partnership.



Bee Informed Partnership NY team photo. From left to right are Emma Mullen (Cornell), Andrew Garavito (BIP), Dan Wyns (BIP) and Karen Rennich (BIP). Photo courtesy of Emma Mullen.



BIP Data hot off the press:

Averages for Nosema and Varroa loads across all tech teams thus far in September are at 0.08 million spores/bee and 4.96 mites/100 bees respectively. We've seen a wide range in Varroa this month as mite levels creep up. The median mite levels are at 1.89 mites/100 bees with a range of 0 – 38.

The BIP Box – Posted Aug 22, 2016

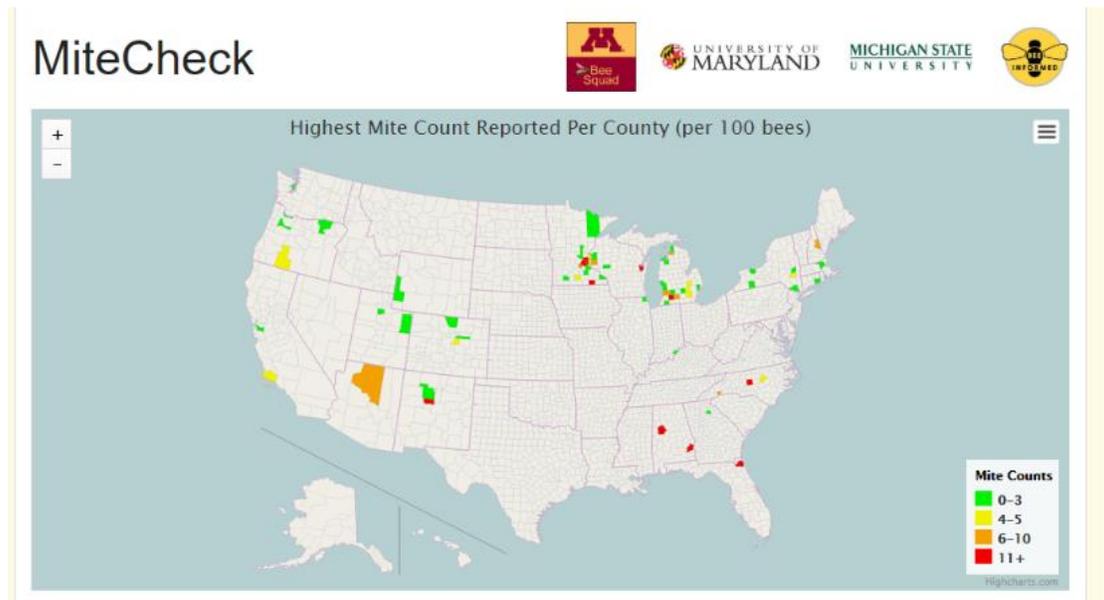
MiteCheck: for the health of your colony

The dog days of summer have, technically, just passed and late August is traditionally the time when beekeepers are stripping off any remaining honey supers and treating their colonies for varroa mites. August is also the beginning of the winter management cycle as beekeepers try to get their colonies as well fed and healthy before winter bees are bred. This is the month we also begin to see the precipitous increase in varroa mite population, which, if left unchecked, can devastate a colony by late fall.

Our team at the Bee Informed Partnership and the University of Maryland are thrilled to collaborate with the University of Minnesota and Michigan State University to promote a simple and non-destructive way to monitor for mites in your colonies. MiteCheck is an online monitoring platform that allows you to enter your mite levels and view levels in your region. This tool enables you to see potential mite infestation problems from nearby yards that could create health issues for your colonies if robbing or drifting occurs. Limiting the varroa viral complex to your colonies is critical this time of year and maintaining yards with low mite levels will significantly increase the chances of winter survival.

By entering your data at MiteCheck.com, you add to our growing database of the seasonal and geographical spread of varroa mites and it permits you to determine how at risk your colonies

are. This citizen science project is growing and over 20 states are currently monitoring and reporting as part of this exciting project.



MiteCheck heat map from the [online site](#). Note how many regions are already reporting mites in excess of recommended thresholds (<3 mites/100 bees).



MiteCheck kit in handy bucket containing everything you need for monitoring your colonies: powdered sugar, scoop, jar with mesh lid, instructions, water bottle, tub

Kits can be made or purchased from [Mann Lake](#) and the [UMN bookstore](#).

BIP Data hot off the press:

Averages for *Nosema* and *Varroa* loads across all tech teams thus far in August are at 0.16 million spores/bee and 2.1 mites/100 bees respectively.

The BIP Box – Posted Jul 21, 2016

It is hot everywhere, and especially at BIP

Mid July is the beginning of the hottest time of the year in most regions of the US. It is the perfect time to eat cold watermelon and limit work outside to the morning and dusk, if you can. Our tech teams, and most beekeepers, don't always have that luxury. In July, tech teams are alternately avoiding both heat stroke and getting stuck in the mud off the beaten path on their way to a sampling yard. But for 3 days in July, we were able to get everyone together at the University of Maryland for our first (and hopefully annual) tech team summit.

Thanks to generous funding from Project Apis m. and the California Almond Board, we were able to kick off our newest endeavor and one we are all very excited about: A Commercial Beekeeping Manual. Suggested to us by a few commercial beekeepers last year, the idea was just too good to pass up and we spent a majority of the tech team summit covering the full gamut of topics you would expect in a commercial beekeeping guide, from what makes a good operation to crop specific management techniques to a guide to knots and locks. This pocket guide will be produced in full color, graphic heavy and ready in 2017. Look for it on the bestseller list. If you have content you think absolutely needs to be included, please contact us. If we don't have it already, we'll try to incorporate it.

July Averages for *Nosema* and *Varroa* loads thus far are at 0.05 million spores/bee and 3.69 mites/100 bees respectively; however this average only represents one team and 32 samples.



Honey bee in watermelon pollination, Oregon. Pollination and contracts are part of the commercial beekeeping guide.

The BIP Box – Posted Jun 16, 2016

Honey flows start, supers are going on and that means a bounty of samples

The summer field season is hard upon us and all of our tech teams are sampling their beekeepers to complete health assessments before honey supers go on. This means that our University of Maryland Lab is deep into sample processing. Our lab is the central processing

facility for all of the BIP tech teams and for the USDA/APHIS National survey samples. This year, we are on target to process >14,000 *Varroa* and noseema samples. June and September are traditionally our 'killer' months in the lab where it is not unheard of to have both *Varroa* shaker units (Burrell Scientific wrist action shakers for those who are interested) going in parallel while our team of 6 full time trained technicians and a cadre of >15 undergraduates systematically and methodically log hundreds of arriving samples, enter all field notes from the tech teams, count bees, count mites, and count noseema spores, enter those data into logbooks, double and triple check, sign off on accuracy and finally generate a report that can be sent to beekeepers and tech teams in usually less than a week from the time it was received at our lab. We then wash those bottles, fill them up and send them back out. It is our version of the circle of life. To make all this happen, a delicate and precise dance must occur and it is only after years of developing field protocols by our amazing tech teams and lab protocols by our equally dedicated lab staff, can that dance be achieved and maintained with precision. Averages for Nosema and *Varroa* loads across all tech teams thus far in June are at 0.70 million spores/bee and 1.1 mites/100 bees respectively.



Newly arrived sample bottles from the field wait on a bed of samples in queue for processing in our UMD lab