IT STARTED WITH A COUGH
THE BIRTH OF DETROIT BEEHIVES

ALSO IN THIS ISSUE:
Don't Go "Off-Script" When it Comes to Treating for Varroa Mites
Three Bees in a Hive
Honey Bee Health Coalition
Looking at the Big Picture
2022 American Beekeeping Federation Conference & Tradeshow

JANUARY 5-8, 2022

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Olivarez Honey Bees, supports innovation and industry leaders who play key roles in beekeeping and sustainability of the industry. Albert Robertson is that leader, inventing the Saskatraz™ Queen Breeding Program in Saskatchewan Canada. OHB is partnering with Albert at our California location to produce Saskatraz™ Hybrid Queens. The Saskatraz™ Program was established with diverse genetics to enrich sustainable economic traits such as:

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**OUR EXCLUSIVE SASKATRAZ™ HYBRID QUEEN**

Olivarez Honey Bees.com  OHBEESHQ
Welcome to the ABF Quarterly. Summer is well underway, and stores are even beginning to feature back-to-school displays. We welcome these signs of normalcy to our daily routines!

As everyone in agriculture knows, we can’t do anything about the weather, but we sure can talk about it! Some parts of the country are getting way too much rain and others, like my area of North Dakota, are in a drought. North Dakota is looking at a huge loss for agriculture in general: crops either haven’t come up or are coming up short so many farmers have re-seeded their crops, hoping for a better outcome. Ranchers are selling cattle in record numbers due to a lack of pasture and a predicted poor hay crop. It’s a tough year for us – I’m guessing you all have experienced your share of tough times too, and we know they don’t last forever.

If the dry weather isn’t bad enough on its own, it has brought a new pest to our drought-ridden areas. Blister Beetles, from the Meloidae family of insects, are highly toxic to livestock. They contain Cantharidin oil which, if crushed or eaten, will form blisters internally in the livestock that consumes the contaminated feed. The beetles feed on grasshopper eggs, pollen and nectar and are most often found in blooming fields such as alfalfa and clover. It will move on after bloom or when the plant dries up. Ranchers have been advised to cut after bloom or to mow with a sickle mower to allow it to dry flat. They are also encouraged to refrain from crushing the beetle in. Spraying is not suggested because the dead bodies will still retain the toxic oils that are harmful when ingested. Texas A&M has more information on this topic which you can read at: https://extensionentomology.tamu.edu/insects/blister-beetles/

Honey bees do well when farmers and ranchers do well. So, for those who have insurance, it may turn out to be a good year. For those involved in government programs, this is the year that the influx of support may pay off for you as well. The news on honey prices is that the shortage of domestic honey may drive prices higher. Along with the impending anti-dumping lawsuit against Argentina, Brazil, India, Ukraine, and Vietnam, honey prices should rebound. This is good news for producers.

To help support the anti-dumping lawsuit, ABF encourages all members to consider a financial donation to the Honey Defense Fund. Every dollar makes a difference and will gladly be accepted. Fair trade in the market and stopping honey dumping will be a huge boost to all beekeepers. The commercial beekeepers will gain from price increases in the obvious ways. The small scale/serious sideliners will gain by the increase in their prices as well. Working together has always been a strength for ABF - let’s keep that momentum alive.

The news on almond pollination is that due to extreme drought conditions in California and lack of water for irrigation, the almond orchards will most likely experience their own trials. We are never sure of the price that is set for pollination until the last minute, but predictions are that prices will be lower. Beekeepers need to prepare for a slim year, do what we can to make up for lost revenue, and look toward a better 2022.

And as we look to kick off a strong 2022, register now for the annual ABF Conference & Tradeshow! The conference committee is making the final touches to the agenda as we speak, and the registration website is open. The annual ABF Conference & Tradeshow will be face-to-face January 5 - 8, 2022 at the South Point Casino in Las Vegas, Nevada. For those who like to drive, parking is free!

South Point Hotel in Las Vegas, Nevada.

Be aware that hotel and flight availability will fill up fast as other large conferences are planned in Las Vegas at the same time, and folks are ready to get together in person! So, register now, book your hotel room, and make that flight reservation. You don’t want to miss this event!

For more information:
Registration: https://bit.ly/ABFRegistration
Hotel: https://bit.ly/ABFHotel

Have a great summer everyone – January 2022 will be here before we know it!

Joan Gunter
ABF President
American Beekeeping Federation
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Proverbs 16:24
In this issue, I’d like to talk to you about legislative issues that are important to the honey industry. The American Beekeeping Federation and its partners have been active in several key legislative issues recently. I also want to update you on national issues of interest. I’ll also share some ideas on what we can do individually and as a group to advocate for positive changes.

The ABF signed The Truck Insurance Coalition’s letter opposing a proposed increase in liability insurance for motor carriers. The letter, sent to the Senate leadership in July, states ABF’s and its partners’ opposition to an amendment included in the House version of the INVEST in America Act. The provision calls for increasing the minimum liability insurance for commercial motor vehicles from $750,000 to $2 Million and directs this amount to be adjusted for inflation by the Federal Motor Carrier Safety Administration (FMCSA) every five years. The ABF stood against this increase in liability insurance for honeybee hauling nationwide.

ABF and industry partners joined in signing a letter to representatives opposing the Step-Up tax provision and the proposed changes to the estate tax exemption. The new proposal would increase taxes on both corporations and high net worth individuals, and it would be devastating to generational family farms! FYI: this is a big revenue generator for the government to the tune of $450-500 Billion! The Farm Bureau is proposing several exemptions, but it never hurts to contact your local representatives and voice your opposition as well. [Visit](https://www.natlawreview.com/article/impact-president-biden-s-tax-plan-estate-planning)

The Senate voted to approve a $1 trillion infrastructure bill and the House has begun considering the Highway Bill. While the overarching funding is for roads and bridges and broadband, there are a few pieces we wanted to highlight. The bill includes an apprenticeship pilot program for truck drivers under age 21 (Section 23022) and the backend 150-mile exemption for livestock hauls - which includes bees (Section 23108). The bill also contains a $2 million program for pollinator-friendly practices on roadsides and highway right-of-ways (Section 11528). These three pieces of the bill are good news for us in the bee industry!

The U.S. Army Corp of Engineers is taking action to help pollinators in Tulsa, Oklahoma. They are restricting the use of neonic pesticides on district-managed lands. Hopefully, this will lead to more districts following suit.

You can join in the fight to bring fair trade back into the U.S. Honey market by donating to the ABF Honey Defense Fund. Your dollars will be spent to support the anti-dumping lawsuit that is fighting honey imports from foreign manufacturers. Visit [http://bit.ly/HoneyDefenseFund](http://bit.ly/HoneyDefenseFund) to make your donation today.

For beekeepers who use ELAP, check to make sure your information is correct. Drought and fire aid will be coming and could possibly help beekeepers who qualify.

These are some of the most current issues that the ABF Legislative Committee has been supporting. If any ABF member is aware of other trends or issues that are important to our industry, please let me know so we can best support all our members. You can email me at Beeman.dan@icloud.com.

Thank you,
Dan Winter
ABF Vice President
Elimination of the Step-Up Tax Provision and the Reduction of Estate Tax Exemptions is Bad for the Future of Rural America

Beekeepers, livestock producers, dairymen, and all our family-run farms, ranches and other businesses produce the majority of our Gross Domestic Product and employ many Americans. Our family farms and ranches produce most of the food we eat and export. Currently the Administration and others are proposing an action that, if successful, will have a significant impact on our agricultural producers for generations to come.

Over 100 years ago, Congress passed the Revenue Act of 1923. In passing this tax legislation, Congress included a provision that has been a cornerstone of agricultural generational tax policy ever since. Congress then recognized the critical importance of family-run businesses and included language allowing an heir to inherit a business without assuming a crippling tax burden that would have changed the face of rural America and eliminate many of our family-owned farms and ranches.

The “step-up” created a 100 years ago basis currently in the tax code works this way: A farm, ranch, or any other business, agricultural or not, is covered by the provision. For example, say your operation was originally purchased for $500,000 but has now appreciated over many years to $4 million; it would be “stepped up” in value to $4 million when transferred to your heirs; however, no capital gains tax would be owed on the $3.5 million gain. Thus, the farmer, dairymen, beekeeper, or any family-owned business owner could leave his/her business to his/her children who hopefully could continue the operation of the business without having to face a huge tax burden.

The Administration’s proposal would eliminate the step-up provision and almost double the capital gains rate. The president’s tax proposal would, among other things, impose a 43.4% tax on $3 million of the appreciated value (the first $1 million would be exempted). Most people in rural America understand the reality that a major portion of an agricultural business is not liquid, sitting ready to be used to pay an unexpected tax bill, forcing heirs to sell property to meet the new tax burden. Elimination of the step-up provision may produce a lot of new revenue for the Treasury, but it is not sound tax policy for future generations in rural America, particularly given cropland values have roughly tripled over the past 25 years. Under current law, when the owner of a farm, ranch or other agricultural operation is subject to federal estate taxes. (Don’t understand this sentence.)

Today the exemptions in assets on estate taxes are $11.7 million per individual and $23.4 million per couple, protecting most agricultural operations from federal estate tax. Recently, several members of the House and Senate Agriculture Committee asked the Agricultural and Food Policy Center (AFPC) at Texas A&M to examine the many recent tax proposals that call for changes in the estate tax exemption levels and elimination of the stepped-up tax provision and report the impact of the proposals on agricultural producers. AFPC recently completed their study and issued its report in June entitled: “Economic Impacts of the Sensible Taxation and Equity Promotion Act” and “For the 99.5 Percent Act on AFPC’s Representative Farms and Ranches.” The “99.5 Percent Act” would decrease the current estate tax million exemptions to $3.5 million per individual and $7 million per couple. The “Economic Impacts of Sensible Taxation” would eliminate the stepped-up tax provision upon the death of the owner. Either one or both would have a significant impact on future agriculture generations. AFPC reported, based on its model, that if the current stepped-up provision is eliminated most farms and ranches would be burdened with an additional tax liability averaging $726,104 per operation. If the changes to the current estate tax exemptions as called for in the “99.5 Percent Act” became law, the AFPC found that most operations in the sample would be impacted with an additional tax liability averaging $2.17 million per farm. If both proposed tax changes became law, the study projects nearly every operation in the study would be impacted with an additional tax liability averaging $1.43 million per agricultural operation.

These tax proposals have gotten the attention of the House and Senate Agriculture Committee leadership. They realize the significant impact these and other proposed tax provisions would have on the future of rural America and what it will look like. They have conveyed their alarm to the Administration and Congressional leadership as have many national and state agricultural agriculture organizations. All agriculture producers need to make sure their members of Congress know what these changes would mean to them and to their families.
Q. My colonies seem to be getting much more defensive as the season progresses. What can I do to keep the sting down?

A. There are two or three things that may be going on with your colonies. First, as the colony grows during the season, it increases “defenders” as well, thus more possibilities of stings. However, I have also observed that our modern strains of bees have been selected for gentleness and that stinging is usually caused by robbing bees from other colonies. Other culprits may be skunks or other animals bothering the colony during the night. Both predatory issues can be reduced or eliminated by the use of a robbing screen.

Robbing screens were invented by Dr. Harry Laidlaw to prevent the robbing of his queen mating nucs. (Technically they are anti-robbing screens.) The researchers at the U.S.D.A. Bee Lab in Tucson adapted the idea to standard colonies, and I wrote about them in Bee Culture many years ago. A diagram of how they are made and a diagram of how they work on a colony, are shown. The vertical can be various heights, but should be at least four inches high to be most effective.

I can vouch for the efficacy of robbing screens for both robbing bees and skunks. While they can reduce mouse invasions of the hive, they do not prevent mice totally. You can use household window screening, but 8-mesh hardware cloth works the best, as it gives the screen more stability. I drill holes in the sides for the nails used to attach the screen to the hive. These holes allow the screen to be removed from the hive more readily. Another hint: Not all bottom boards are exactly the same width, so I make them to fit the narrow boards and use beeswax scraps to plug the gaps on the end if needed.

The screens can be used year-round, though some beekeepers remove them during winter. These screens also can be used in moving bee hives by just tacking a wooden strip over the upper entrance slot.

Q. I am considering starting with bees, but I am a little confused about the 8-frame hive vs. a 10-frame hive.

A. The answer is going to be a little mixed, but maybe I can shed some light on the subject.

The 10-frame deep Langstroth super (box) is the de-facto standard hive in the U.S. and Canada, which will become important if you ever want to sell your equipment. However, a Langstroth deep full of honey will weigh over 100 pounds, and lifting that much from the top of a colony that is four -five feet tall is a test of strength. Therefore, I strongly recommend using 8-frame, medium depth supers throughout the hive. By having all the frames alike, a single frame from one box can easily be exchanged with one from another box or hive.

When I started beekeeping 70+ years ago, there were commercial beekeepers that had mixed apiaries of 10- and 8-frame equipment, and I asked them which colonies wintered better. They all said the 8-frame hives were best. It turns out there are several reasons for this wintering advantage for 8-frame hives, but I won’t go into those here.

So, the answer comes down to strength, age (?), and re-sale value. For me, the choice is clearly in favor of the 8-frame equipment for the small or part-time beekeeper.
Each state having ABF members may appoint a State Delegate to serve as a liaison between ABF and its state association and local clubs. Each State Delegate acts as a Membership and Legislative Coordinator—communicating important membership and legislative information between ABF and the state and local clubs.

Let’s grow together! Don’t miss this opportunity to publicize your state meetings.

Let us know if you want your state more involved with the membership and legislative happenings and consider becoming a State Sponsor of the ABF.

Bi-monthly meetings of the American Beekeeping Federation State Delegates Assembly have been scheduled into the last half of 2021. Our July meeting, held with 27 State Delegates from 13 states, started with introductions of our ABF President, Vice-President, and the two State Delegate Board members. We reviewed the list of states that are lacking the required number of delegates and those that have no delegates.

We are currently recruiting delegates from the following eight states and the District of Columbia: Six of the eight states at this time don’t have any delegates.

Interested in serving as an ABF State Delegate? We would love to have you join us!

If you would like to serve as a state delegate from one of the above states, please contact your state association and have your name submitted to Debbie Seib at seibshoosierhoney@yahoo.com with the Subject: State Delegate or call 317-432-9578.

1. Within a week or two of new elections in your state: notify American Beekeeping Federation (ABF) at info@abfnet.org of the newly elected officers providing contact information to include address, phone and email.
2. From a state or local beekeepers association, please let ABF know what is affecting you at a local or state level and identify any support you may need from ABF.
3. Share information received from ABF regarding specific events and programs pertinent to your state and local associations.
4. Attend the bi-monthly State Delegates calls.
6. If you are the designated representative from your state association, plan to attend the State Delegates meeting at the ABF Annual Conference & Tradeshow. If so, send your name to Debbie Seib at seibshoosierhoney@yahoo.com by January 1st.
7. Send information about your state events to info@abfnet.org at ABF Headquarters so we can publish them in e-Buzz, the monthly newsletter.
8. Look for ways to promote ABF within your state and local associations.
9. Bring your suggestions to the ABF Membership Committee about how to recruit members to ABF.
10. If you have a great local or state story, ABF would love to include it in the ABF E-Buzz newsletter or ABF News section of the website. Contact info@abfnet.org for more information and a schedule of deadlines.

State Delegates Meetings are held the second Tuesday bi-monthly at 8 pm EST. The remaining two meetings scheduled for 2021 are below. Please add these to your calendar so you can attend!

September 14, 2021
November 9, 2021

Please contact me if you are from one of the eight states above, and you would like to be a state delegate. Debbie Seib at seibshoosierhoney@yahoo.com Subject: State Delegate or call 317-432-9578.
STATE MEETINGS

NORTH CAROLINA

• Summer (Fall) 2021 November 19-20, Hickory, NC
• Spring 2022 March 4-6, New Bern, NC
• Summer 2022 July 29-31, Hickory, NC

INDIANA

• The Beekeepers of Indiana Fall Conference and Workshops will be held at Blue Gate Inn/PAC in Shipshewana, Indiana on October 29-30, 2021. Our guest speakers are Ana Heck, University of Minnesota Bee Squad, and Selina Bruckner, Associate Professor at Auburn University.
• Breakout sessions will include "Transitioning from Sideline to Commercial", "Essential of Hive Inspections, What To Do," "How to Get Started in Beekeeping" and "Using Technology in Beekeeping"
• Saturday will include workshops for: Building Bee Equipment, Lighting Smokers, Making Candy Boards, Waxing Plastic Foundation, Feeding What and When
• We’ll have a raffle, an auction and a Honey show. New this year we will have a smoker contest.
• Cost per member is $40 and $50 for non-members. All children 15 or under may register for $25. You need to be register to attend Friday/ Saturday and participate in any of the events. Juice and coffee will be available Saturday morning and your registration includes an Amish Buffet lunch.
• More Information about the agenda, workshops, directions, link for hotel, etc has been posted on our website under https://indianabeekeeper.com/events/fall_conference; Products From The Hive with an emphasis on how-to for better sales for our beekeepers; Hive Maintenance emphasizes the newest best practices available; and a Journey To Mastery talk.

IN MEMORIAM

LEE HEINE

It is with much sadness to report that we have lost a true legend of the beekeeping industry. On Sunday morning, August 2, Lee Heine passed away peacefully at his home in Wisconsin after a two plus year battle with pancreatic cancer. Lee's contributions to this industry are immeasurable.

He was the Chair of the National Honey Board and guided it through some very trying times. Lee was always the "go-to" guy if you needed a connection with anyone in the beekeeping industry. He knew everyone. He is probably best known for his unbelievable social prowess. Everywhere Lee went he attracted a crowd. Even when he was around a group of strangers, they would congregate around him. He was literally magnetic. He was just that kind of person. People were obviously attracted to his kindness and laid-back attitude. Lee made every social situation enjoyable and was always so much fun at the ABF conventions. He will truly be missed by everyone.

Rest in Peace, Lee
Tim May
The Effects of Pathogen Virulence and Fungicides on the Increased Incidence of European Foulbrood in Honey Bee Colonies Associated with Commercial Blueberry Production

Introduction:
European foulbrood (EFB), caused by the bacterium Melissococcus plutonius, produces increased mortality in honeybee (Apis mellifera) larvae in colonies under environmental and nutritional stress. Recently, EFB has been reported more frequently in colonies across North America, especially associated with commercial blueberry pollination. Potential risk factors for EFB during blueberry pollination may include pesticide exposure and increased M. plutonius strain virulence.

Honeybee colonies pollinating blueberries are frequently exposed to combinations of pesticides, which also may act synergistically (1,2) to increase larval susceptibility to EFB by impacting immune function (3). Previous studies looking at the active ingredients of pesticide found a significant decrease in larval survival when subjected to unrealistically high doses of pesticides used in blueberry production (4). However, formulated products applied to blueberry fields contain active substances mixed with various adjuvants; there is a lack of scientific studies investigating the effects of these formulated compounds on honey bee larvae.

In addition, virulence can vary across different strains of M. plutonius (5). An apparent sudden rise in prevalence of EFB may be consistent with spread of more virulent/pathogenic strains of M. plutonius among colonies involved in blueberry pollination. Using multi-locus sequence typing (MLST), M. plutonius has 34 sequence types which are used to further group the bacteria into three distinct categories characterized as extremely virulent (clonal complex (CC) 12), less virulent (CC3), and avirulent (CC13) (5). Strains belonging to CC12 are considered atypical based on facility of growth compared to strains belonging to CC3 and CC13 which do not grow as readily (5). Atypical (CC12) strains of M. plutonius were also able to maintain virulence following in vitro culturing and when inoculated into artificially reared honey bee larvae, they developed EFB whereas typical strains (CC3 and CC13) did not (6). While there is a sudden rise in the incidence of EFB associated with blueberry pollination, the relationship between M. plutonius strains found in blueberry-pollinating colonies and honey-producing colonies is unknown.

Outline of specific research experiments and results to date:
Objective 1. Determine if formulated fungicide exposure increases the susceptibility of larvae to European foulbrood in vitro

Experimental Design:
To test the hypothesis that fungicide exposure will increase larval susceptibility to EFB, we inoculated one-day old honey bee larvae with 50 colony forming units (CFU) of an atypical virulent strain of M. plutonius (figure 1), and simultaneously exposed the larvae to environmentally relevant concentrations of formulated fungicide products used in blueberry production. As several formulated fungicide products are used in combination, we aimed to mimic field scenarios in vitro by administering concentrations of fungicides based on field application rates for commercial blueberries, alone and in combination, to monitor for synergistic effects. Fungicide products were administered via larval diet and larval susceptibility to EFB was observed over 6 days.

Results to date:
To date, we have successfully inoculated artificially reared larvae with M. plutonius and tested the effects of two fungicides, Captan® (2400 ng/bee) and Kenja® (6 ng/bee), alone and in combination, to the susceptibility of EFB (figure 2). Surprisingly, when the fungicides Captan® or Kenja® were administered to infected larvae, we saw an increased larval survival from EFB by 33% compared to infected larvae fed a control diet.

We suspect that these fungicides may inhibit bacterial growth; however, when both Captan® and Kenja® were administered to larvae in combination, there was no change in larval survival compared to infected controls. Further experiments are needed to understand the interaction of these products together and in the presence of M. plutonius.

Objective 2. Compare the pathogenicity of different strains of M. plutonius associated with commercial blueberry pollination and honey production

Experimental Design:
To survey the prevalence of M. plutonius in North America, 407 samples were collected from EFB symptomatic colonies associated with both blueberry and non-blueberry pollinating beekeeping operations in Canada (British Columbia, Alberta, Saskatchewan, and the Maritime provinces) and the United States (Utah, Texas, and Michigan). We hypothesized that highly virulent strains will be more frequently identified in blueberry-pollinating colonies compared to honey-producing colonies, and that atypical strains of M. plutonius will be more pathogenic to larvae in vitro (consistent with...
previous findings outside of North America). Samples submitted to the lab were cultured on KSBHI media for 48 hours and monitored for growth; successfully cultured bacteria were Gram-stained and microscopically examined for identification of M. plutonius (figure 3). Gram positive bacterial samples were submitted for PCR for confirmation of M. plutonius isolation. Using an in vitro larval infection model of EFB, a subset of PCR positive samples were grown in liquid KSBHI media and inoculated into the diet of one-day old honey bee larvae to assess in vitro pathogenicity. Larval survival was monitored over 6 days. The sample subset of PCR positive bacterial strains were also submitted for MLST to identify the genetic sequence type and category the isolates belonged to (i.e. typical or atypical).

Results to date:

We aim to culture and confirm the identity of M. plutonius via PCR for all submitted samples. We have completed bacterial culture, Gram stain, and PCR for 75% of the 407 suspect EFB samples that were submitted, and we continue to process the remaining samples. Of those successfully cultured, 60% (183/304) of samples successfully grew gram-positive bacteria with colony forming units that resembled M. plutonius and 40% were PCR positive. We chose 8 different confirmed isolates of M. plutonius to test pathogenicity in vitro by inoculating one-day old honey bee larvae with 100 CFU of M. plutonius and monitoring survival over 6 days (figure 4). Seventy-two larvae were infected per isolate, and all 8 strains will be submitted for MLST to compare genetic sequence type. We have cultured both avirulent and highly virulent isolates of M. plutonius from colonies involved in blueberry pollination based on in vitro infection trials. Larvae inoculated with avirulent strains of M. plutonius in vitro showed up to 90.2% survival on average compared to 6.9% survival when inoculated with a highly virulent strain.

Variations in the MLST may explain this variation and results are pending; however, there is no clear association between blueberry pollination and highly pathogenic or genetically atypical strains. We plan to continue collecting samples from EFB symptomatic colonies in 2021 to compare changes in virulence within beekeeping operations, and between blueberry-pollinating and honey-producing operations to enhance our understanding on the increased prevalence of this disease.

Figure 3: M. plutonius grown on KSBHI media showing colony morphology (A, B) and respective Gram stain (C).

Figure 4: Percent survival of honey bee larvae (n = 72 per isolate) over 6 days after inoculation with 100 CFU of M. plutonius strains isolated from EFB outbreaks in British Colombia (BC), Alberta (AB), Oregon (OR), and Saskatchewan (SK). Two isolates were taken from each province or state. The blue and yellow bars represent blueberry-pollinating and honey-producing colonies, respectively. Lowercase letters indicate significance (p < 0.001).

How this research benefits bees, beekeepers, and the apiculture industry European foulbrood disease is economically important as it causes increased colony mortality with the potential of colony collapse and weakens colonies early in the season, decreasing their potential for honey production. Understanding the pathogenesis of this disease and the host, pathogen and environmental factors which contribute to its reported association with blueberry pollination are important steps in preventing future colony losses and improving honey bee colony health for the economic benefits for both beekeepers and blueberry growers in North America. In particular, we provide results to collaborating beekeepers to keep them informed about the relative risks of pesticide exposure, blueberry pollen, and M. plutonius strain virulence for the development of EFB in their colonies. By improving dialogue and cooperation between beekeepers, researchers, blueberry growers, and veterinarians, evidence-based policies and management practices can be designed and enhanced to mitigate the risk of EFB during blueberry pollination.

References

Commercial Beekeeper

SPOTLIGHT

JAY MILLER
2J Farms
Blackfoot, Idaho

WHEN AND WHY DID YOU GET INTO THE BEEKEEPING BUSINESS?
I was born into the family business which was started by my great grandfather, N.E. Miller. Why: I guess it was a life I understood. Long hours, low pay, hot, sweaty, achy back, hard, manual labor. Doesn’t everyone enjoy such a life? I packed honey for many years which was challenging, but I was poorly suited for selling into the grocers. I found that frustrating.

DESCRIBE WHAT YOUR BUSINESS CURRENTLY DOES IN THE INDUSTRY.
My father, Neil, always liked to have three revenue sources for his business. In his time it was honey production, almond pollination, and honey packing. I stayed with production and pollination but added bee storage as our third activity. Zac Browning showed me what he was doing, and we adopted it right away. After a while, adding a “Winter Bee Storage” service to our business made sense. We installed a refrigerated building to meet the specific needs of a certain group of bee guys and gals. For a while, after almond season, we would trek north to pollinate apples, cherries, and apricots, but, as the reward did not outweigh the effort, we stopped that venture then focused on making better nucs in California and bringing them home to Idaho.

Since I was twelve years-old, our family would summer in North Dakota for honey production. When I had a chance to buy one of Jim Powers’ operations from Dave Nelson, we changed our location from central North Dakota to northwest ND. Dad felt the weather pattern was similar, so we set up shop in Powers Lake, ND around 2012.

WHAT CHANGES HAVE YOU MADE TO ADAPT YOUR BUSINESS TO THE CURRENT INDUSTRY CLIMATE?
I am dismayed that the greatest country ever cannot hire good reliable local help. We have had to hire H2-A employees for the last three years in order to manage all our work. We have sold our trailers for bee hauling and now hire it all done. We manage our operation with TheBapp versus using paper records and worrying about which regulation we are not following and when we were going to get caught and fined. We randomly test our CDL licensed drivers and fire anyone caught smoking dope at work.

WHAT ARE THE FUTURE GOALS OF YOUR BUSINESS?
Secure our hives’ losses going in almonds at 9%. We currently run about 6,000 hives. We would like to increase those numbers in the spring and better manage our nucs, queens, and mites. We raise beautiful mites!

We also advocate for the public to more closely read their honey jar labels so folks know where their honey originates. We know people want to support local honey and honey producers so they need to be reminded to look past the pretty (misleading?) label and read where the honey came from. Support U.S. beekeepers!

We at 2J Farms have a great crew. I plan to take more pictures and label them so the contributions of these men and women to our success will be remembered, at least by me.

WHAT ARE YOUR MAJOR CONCERNS ABOUT THE BEEKEEPING INDUSTRY AND HOW THEY WILL AFFECT YOUR BUSINESS?
Mite control is problem #1! Adulterated honey is #2. Regulations we don’t know about is worrisome. Labor, benefits, wages, and health insurance costs are aggravating.
ARE YOU EXPERIENCING HIGHER THAN NORMAL ANNUAL LOSSES? IF SO, WHAT ARE YOU DOING TO PREVENT FUTURE LOSSES AND HOW ARE YOU MAKING UP FOR THOSE LOSSES?

We are up and down year-to-year with losses. Mites are always a problem, but queens, either from cells or mated, are highly variable as well. Starving hives is a sad admission of poor management, but we seem to have a few of those each year - less all the time, but still.

How do we make up for those losses? We make lots of nucs and splits in the spring. We pull a three-frame nuc "lift" on top of the parent hive just after pollination while we’re in California and add a cell after we pull it off. When we get the parent to Idaho, we split it and add a queen to the queenless side. For us, a three-way-split is the way to increase numbers and have strong enough hives to make a honey crop.

WHAT IS THE STRANGEST THING YOU’VE SEEN IN A BEE YARD?
Since this is a family rated profile I would prefer not to elaborate or explain!

WHAT IS THE MOST PRODUCTIVE CROP OR FLOWER THAT YOU’VE SEEN YOUR BEES WORK?
My son-in-law stands 6'4", and I’m 6'2". We have a picture of us standing in a yellow sweet clover patch that was almost seven feet tall. I love communing with potential!

WHAT IS YOUR FAVORITE TYPE OF HONEY?
We lived in Florida for over four years, buying and selling honey. I really learned to appreciate good Orange honey. Water White, Sweet Clover and Alfalfa honey are all dear friends.

WITHOUT MENTIONING NAMES, WHAT IS THE BEST AND WORST BEEKEEPING ADVICE YOU’VE EVER RECEIVED?
Best: Do what you should do - when you should do it. Worst advice: You really don’t have to zip your veil all the way after dark

WHAT IS YOUR FAVORITE BEEKEEPING TASK?
We stack bees in our storage cellar eight-pallets high. I am anxious setting them up and very happy taking them down! I really enjoy supering, but my staff says I’m too slow to tackle robbing anymore.

WHAT BEEKEEPING TOOL OR PIECE OF EQUIPMENT DO YOU ENJOY WORKING WITH THE MOST?
My phone.

WHAT DO YOU THINK THE BEEKEEPING INDUSTRY WILL LOOK LIKE IN THE FUTURE?
If we can get the next generation of beekeepers to join the American Beekeeping Federation and advocate on important issues, I see a future. If we fail to bring them in, their individual voices may not enjoy the amplification needed to be heard. If we in the honey industry are not able to influence important legislative and market issues concerning bees and honey, I see problems for future generations and the future of the business.
IT STARTED WITH A COUGH

AND HAS LED TO AN URBAN EMPTY LOT BEEKEEPING REVOLUTION:
THE BIRTH OF DETROIT BEEHIVES

By: Melanie Margarita Kirby
It started with a cough that got worse and worse. It wouldn't go away. Months went by, and the cough stayed, piercing and whole-body shaking. After visiting various doctors and trying all sorts of recommended medicines, Timothy Paule was skeptical that he would find something to relieve this nagging cough, much less find out what was causing it. Then, one day he went into his corner convenience store, and the owner behind the counter heard his cough. He said to Timothy, "Why not try this honey?"

Timothy says that he initially dismissed the suggestion - he had already tried store-bought honey, and it hadn't helped. But the owner wanted to help and persisted, "Why not try this local, raw honey? It is distinct. It isn't your typical run of the mill honey." And so, Timothy bought a jar, and headed home. He ended up going back several times and bought all the raw, local honey he could from the store owner. When Timothy asked him where it came from, the owner shared that it came from a beekeeper who managed his hives nearby. And that was the start of an amazing journey that would take Timothy and his partner, Nicole Lindsey, on an amazing and astounding journey into the world of beekeeping.

Flash forward five years and now Timothy and Nicole are the founders of the fast-growing Detroit Hives enterprise. Back in 2016, if you had told them that they would be turning vacant lots in inner city Detroit into apiaries, they wouldn’t have believed you. But this is what they do, and the inspiration came from the chance encounter of finding local honey at the convenience store and the growing potential for revitalization of vacant spaces in the city. I Zoomed with Timothy and Nicole earlier this spring, and they shared a little bit about themselves and what brought them to this chance opportunity. Timothy said that he has always been creative. He is a skilled photographer and has used the arts to navigate positive personal and social change to support emotional health. They heard that vacant lots were being sold within the city for $100. They began to imagine what they would do if they were able to purchase one. They wanted to do something out of the ordinary that would pique the interest of the community and also provide educational opportunities and expose area youth to the natural world. They initially considered establishing a peacock farm, but the magic of that local honey that had soothed Timothy's cough came to mind. He became so interested in learning more about the health benefits of honey that he began to wonder: What if they started managing hives on the vacant lot? What if…

Knowing they had no idea how to do keep bees, they began their research and enrolled in a beekeeping class in 2016. They then applied for a community grant with their pitch: to purchase a lot and establish some hives. In 2017, they were awarded $1,600 and were able to purchase the lot, their first hives, and embark on the adventure of a lifetime. And now, they are on an upward trajectory - spearheading an organization that has additional investors which allows them to develop programming and beekeeping ventures to the tune of a quarter million dollars. Detroit Hives is a 501c(3) non-profit organization working to create sustainable communities and bee populations by transforming vacant lots into pollinator-friendly spaces. They now manage several apiaries in the city and provide a variety of programming for area youth and local communities. Who knew that a cough would lead Timothy and Nicole to create an evolving organization with the purpose of bringing diversity and awareness to bee stewardship through inner-city rebuilding efforts in Detroit communities?

The bees find those willing to follow. They have found so many of us by chance and others through family and friends. Despite our differences in location, urban or rural, west coast or east coast, north or south, what unites us is our love for these blessed winged angels of agriculture. Each of our journeys is special, and being able to share them makes our industry stronger. Together we lift our bees and each other up! Follow Timothy’s and Nicole’s journey and support their efforts by visiting their website: www.detroithives.org and on Instagram @detroithives.
DON’T GO “OFF SCRIPT”

WHEN IT COMES TO TREATING FOR VARROA MITES

By Paul Kozak (Provincial Apiarist – Ontario Ministry of Agriculture, Food and Rural Affairs) and Jim Coneybeare (Ontario Beekeepers’ Association (OBA) President)
Managing the health of honey bees in Ontario is becoming increasingly complicated. Honey bee pests and diseases, especially varroa mites, are persistent and unforgiving. A honey bee colony will eventually die without regular intervention to manage high levels of varroa infestation. Several chemical varroa treatments are legally registered (on-script) for use in Ontario. Beekeepers should be aware of these treatments and ensure that they are used properly. These treatments are listed in the Ontario Treatment Recommendations for Honey Bee Disease and Mite Control document. This official document includes input from specialists at the Ontario Ministry of Agriculture, Food and Rural Affairs, University of Guelph researchers, and the Ontario Beekeepers’ Association and covers legal treatment options for varroa, as well as other honey bee pests and diseases.

See: http://www.omafra.gov.on.ca/english/food/inspection/bees/2017-treatment.htm

The complexity and effort required to maintain healthy bee colonies can make it challenging for beekeepers to keep up with their management. These challenges may lead beekeepers astray in search of any easy answer or “quick fix” to managing varroa. Enter the internet. Through blogs, discussion panels, and, if you’re not online, there’s good ol’ word of mouth, you may come across new, seemingly promising options and recipes for controlling varroa mites. What could possibly go wrong? Well for starters, the control method may not be legally registered, tested or intended for use in Ontario. These control methods have been termed off-script treatments. There are many serious consequences to using off-script treatments, including:

• May be ineffective at controlling the target pest or disease.
• May accelerate the development of resistance among the target pest or disease population, thus rendering the active ingredient ineffective.
• May impact the honey bees leading to death or further colony health issues.
• Waste of resources (time and money).
• Honey may become contaminated by the treatment.
• The treatment may harm the user or applicator.
• The applicator may encounter fines through regulatory action if using unregistered or off-label treatments.

Recently, there has been widespread interest in the use of oxalic acid, specifically off-label application methods, in Canada and the USA. This is one such example of off-script treatment. Although oxalic acid has been registered in Canada for over a decade, the recent registration of oxalic acid in the USA has led to a surge of interest in this compound. Along with this interest came the question: How do I use this stuff?

A compound or active ingredient, such as oxalic acid, will kill varroa in a honey bee colony. However, the application method of this treatment is critical, as is the time of year, the environmental conditions (specific to each region), and the development of the hive at the time of application. This is why it is recommended that beekeepers in Ontario only use registered chemical treatments that are supported by research trials from reputable sources. For example, a trade journal (not a peer reviewed scientific journal) or a blog or private website (not associated with a university, college or professional association) from someone tinkering with a treatment should not be used to make treatment decisions. The trials on how the compound works may also have been conducted in very different regions (Florida or California vs. Ontario) where the colony conditions could be very different. Ontario is fortunate to have researchers at universities and the OBA’s Technology Transfer Program (which works with universities) to carry out sound research trials under Ontario conditions.

For oxalic acid – neither the glycerin method nor the fumigation method is considered acceptable in Ontario, with the former method being illegal while the latter method is hazardous to the user (oxalic acid fumes can permanently scar lung tissue). The only method where oxalic acid has been adequately tested under Ontario conditions through region-specific research is the drizzle method. Therefore, this is the only method of oxalic acid treatment currently listed in the Ontario Treatment Recommendations for Honey Bee Disease and Mite Control (see link above).

If a treatment is not listed in the Ontario Treatment Recommendations for Honey Bee Disease and Mite Control, it should not be used. Even information from other reputable and official sources should not be used if it is not specific to Ontario. Other provinces and states may have different legally available treatment options than Ontario.

Blogs are quite useful for exchanging information on broader management such as fixing equipment or tips on how to best convince a new landowner to host a bee yard. However, blogs should not be relied on for critical information that relates to honey bee health or disease.

Another scenario of off-script treatment may be a so-called non-chemical control method such as mineral oil or small-cell foundation. There are people out there claiming that their non-chemical method kills varroa mites. These methods may kill a varroa mite or two. However, the effectiveness of the treatment may not be adequate to prevent varroa from damaging or killing a colony. An effective varroa treatment must kill hundreds or even thousands of varroa mites. It is also possible that the treatment does not work at all. Yet the person running the blog may claim that they have never lost a colony – but offers no proof to support this claim. Non-chemical control methods or cultural control will only be listed in the Ontario Treatment Recommendations for Honey Bee Disease and Mite Control if they have been demonstrated to be effective at controlling the target pest and have been registered for use in Ontario (if there is an active ingredient or chemical). Even then, Ontario beekeepers must seriously consider using a registered chemical treatment in addition to cultural control methods in order to effectively manage the levels of varroa in a colony.

It is important to note that recommended and legal treatments are not all perfect – each one has their own set of advantages and disadvantages -but, don’t be discouraged by this. There is always a proportion of varroa mites that survive a treatment. Ideally, treatments will kill over 85% of the varroa in a colony. Treatments may vary by environmental conditions or timing of application or be prone to resistance, and colonies can be re-infested by varroa mites from nearby colonies that were not treated (your own or someone else’s).

We are fortunate in Ontario to have established treatment thresholds for varroa which are linked to reliable monitoring methods (e.g., alcohol wash, ether roll or bottom board drop) and numerous legally registered treatments that can be used in rotation as part of an effective Integrated Pest Management strategy. Beekeepers can even choose organic chemical treatments such as organic acids (e.g., formic and/or oxalic acid) and essential oils (e.g., thymol).

Prior to treating your colonies for varroa, it is extremely important to monitor colonies regularly to determine if treatment is required and then to monitor the colonies again after a treatment has been applied to determine if it has been effective in controlling the varroa infestation. Lastly, use treatments in rotation (i.e., don’t use the same type of treatment or active ingredient in fall as you did in spring) to reduce the risk of varroa mites developing resistance to treatments.

More applications and compounds are always being examined by reputable researchers as suitable and effective treatment options to manage varroa mites. If new compounds and application methods are found to be effective (i.e., kill enough mites to make it worthwhile), safe (for the bees, the honey and the user) and sensible, then they will be registered for use in Ontario.

In short, the risks associated with using off-script treatments are high and rarely worth the reward. Keep your bees healthy - stay on script!
THREE BEES IN A HIVE

by: Debbie Seib

As beekeepers, we are all aware of the three types of bees in our hives: queen, worker bees and drones. We know, for the health and wellbeing of our colonies, we need all three. Each one has its own purpose and contribution to the survival of the hive.

The same is true of our beekeeping industry. We have three levels of beekeepers: commercial, serious sideliners and hobbyist. And while we may use different terms, our purpose is the same. Without all three levels, our industry would struggle for survival along with the economic impact not only to our industry but others as well. Let’s take a look at each level and delve into why each is important.

HOBBYIST

Hobby beekeepers keep a few hives for their enjoyment. During leisure time, they’ll watch bees go in and out of the hive. They paint their hives in wonderful decorative designs using the hives as a way to express their view on things they enjoy: mountains, flowers, sports teams, small houses, etc.

And although little to none of their income is from their hives, they will spend thousands to purchase that special looking hive, beekeeping equipment, bee jewelry, clothing, hats and anything that will identify them as a beekeeper while they are out and about.

Hobby beekeepers get started in many ways: a friend, a co-worker, a local club in their neighborhood, a swarm lands in their yard and they decide to keep it; they see an advertisement for an event and decide to check it out. However they got started, they are now beekeepers and proud to let everyone know it.

Their small number of hives serve a purpose in pollinating neighborhood gardens and flower beds. They may produce small amounts of honey and hive products which they sell at farmers markets and use to educate the public about the importance of honey bees. They volunteer to help manage beekeeping events.

In order to be a beekeeper, you have to have bees. Hobby beekeepers can acquire their bees through a gift, collect a swarm, a cutout (not likely); however, the majority of hobby beekeepers purchase packages or nucleus colonies from a serious sideliners or commercial beekeepers.

So what is the difference between a hobbyist and serious sideliners?

SERIOUS SIDELINER

A beekeeper is considered a serious sideliners if they run tens of hives and spend a majority of their time keeping bees. Many of them sell bees to hobbyists, raise queens to sell to local beekeepers or sell equipment.

A portion of their income is derived from beekeeping, but they usually have another source of income as well. They may produce excess honey that they sell to local stores and other beekeepers. Many are authors of books and submit periodic articles for magazines. They are more likely to participate in scientific studies than hobbyists. Sideliners are those who try to produce enough income from their bees to cover their costs with a little left over.

Most sideliners have a registered beekeeping business, have designed (or had someone else design) their own logo, and are knowledgeable on state and national laws and regulations.

The majority of sideliners run less than 200 hives, so they handle most of the small pollination contracts local to them. They may take 2 – 30 hives to one location. Since they are only moving a small amount at a time, their equipment is not as large (or expensive) as commercial beekeepers, using a truck pulling a trailer vs. a semi.

These beekeepers will spend a significant amount of time presenting to groups, serving on committees in their state, managing state-wide events, and serving on core groups for local clubs, state and national boards.

Where do their bees come from? Many will split their hives in the spring to double or quadruple their hive population, but as they sell bees to hobby beekeepers, their numbers will decrease, so they always have an ebb and flow to the number of colonies they run. They also purchase bees from commercial beekeepers, mostly packages, to increase their numbers or to replace a significant loss.

How do you become a commercial beekeeper and how is that different from serious sideliners?

COMMERCIAL

If your sole income is from beekeeping and the beekeeping industry and you’re paying your bills and supporting your household from this effort, you are considered a commercial beekeeper. Some will say if you exceed a certain number of hives, you are commercial. As with all things in beekeeping, ask five beekeepers a question, and you’ll get seven different answers. So, we’ll just leave the definition as above.

Many commercial beekeepers inherited a family business that has been passed down through four or five generations. Learning about beekeeping from father, grandfather and sometimes even great grandfathers was a way of life, and, because of that, they grew up loving and respecting the importance of bees. (I recognize that women are beekeepers too, but this is a more recent development in the last 40-50 years.)

Next, we have commercial beekeepers who moved from serious sideliners to commercial by growing their business over time. They gradually increased the number of hives they managed until all their time was consumed by maintaining and managing their hives. They no longer have other employment as this has become their full-time job.

And finally, we have commercial beekeepers who grew overnight either by purchasing a commercial operation or purchasing several smaller sideliners operations. These people may initially struggle as they decide where they want to focus: honey producer, pollination for large industries (e.g., almonds), queen producer for other commercial operations, selling hives to hobby and sideliners beekeepers. As a great man once told me - A good commercial beekeeper will have several avenues of income stream.

Our commercial beekeepers will be heavily involved in legislation that affects all levels of beekeepers. They recognize issues that positively or negatively impact our industry and are more than willing to get involved to effect change. Answering endless questions and giving unselfishly of their time, they mentor and educate those that would like to become commercial and share their knowledge to prevent others from making some of the costly mistakes they themselves have made.

Commercial beekeepers are critical for industries that need large numbers of hives for pollination, to produce a significant amount of the honey consumed in the U.S., and to supply bees for current and wannabee beekeepers each year.

We beekeepers are like a hive with three types of bees, and we need to recognize and realize that we need all three to survive.
Frames - Plastic
- Super Strong and Durable
- Safe - FDA food grade plastic
- Easy to use - No Assembly Required

Frames - Wood
- Stronger than Industry Standard
- New 1/2” thick end bars - 3/4” top bars
- Assembled, Glued, and Stapled

Snap-in Foundations
- Impervious to wax moths, rodents, and hive beetles
- Preferred by Professional Beekeepers
- Precision molded, perfect cells
- Easy to use - Snaps into wood frames

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- Assembled, Primed, & Painted

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National Honey Board (NHB) and Project Apis m. joined together in 2020 to create a ‘one stop shop’ for honey bee research. They have loaded more than 680 research projects into a databased housed on the Bee Health Collective (BHC) website, where it’s as simple as typing in a keyword – like ‘pollination’ – to find the latest science related to that topic.

The BHC was designed as a platform to bring researchers and beekeepers together by offering a centralized location and improved access to information. The BHC is a storehouse of credible research about honey bee health, hive management, beekeeping and pollination.

And the Bee Health Collective is more than just the Research Database section!

The About Honey Bees section contains up-to-date statistics presented through infographics, images and narrative about topics such as honey bee health, beekeeping, pollination and honey. The Bee Bulletin Board lists employment, funding and scholarship opportunities. Together, these three sections make resources easily accessible for beekeepers and researchers.

What’s more, the Bee Health Collective website has information and statistics on the economics of beekeeping from the USDA-NASS, including a breakdown of production, supplies and equipment costs. Did you know a beekeeper could spend more than $40,000 per year on feed?

Since its launch in August 2020, over 100 jobs and funding opportunities have been posted on the Bee Bulletin Board. Among the job opportunities listed are beekeeper, educator, farm manager, entomologist, sales manager and apiary inspector. Top tier organizations and universities alike have shown strong participation, including job and funding opportunity listings from Oregon State, Purdue, North Carolina State University, USDA, National Science Foundation and National Institute for Food and Agriculture.

What’s ahead for the BHC? According to Danielle Downey, executive director of Project Apis m., “The focus for our second year is to get the word out to the industry and attract even more users to the website. We want to build on the success we’ve had so far partnering with leading organizations to share job opening, funding opportunities and, of course, new studies.”

Plans for the coming year include adding a blog featuring content from well-known people and organizations in the honey industry, such as the Bee Informed Partnership, Project Apis m., NHB and USDA. Outreach to all of the state and national beekeeping organizations is also a part of the plan.

The BHC database also recently expanded to include international research with the addition of Canadian Research projects.

The BHC would like to thank the USDA, the Almond Board of California and the Bee Informed Partnership for their sponsorship, which will allow the BHC to continue expansion and development throughout the upcoming months.

Visit BeeHealthCollective.org to list a job or check out the latest in bee health research. And please help spread the word about this resource for the beekeeping industry.
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BEES, HONEY, AND STATE FAIRS
by: Apiary Inspectors of America
A much-beloved agricultural tradition is the state fair, and honey bees provide a favorite experience for fair-goers. Although each fair is different in size and scale, state apiarists play a role coordinating the bees and honey competitions, supervising the observation hive, working with other agricultural industries to host commodity breakfasts, or demonstrate the benefits of honey in culinary arts.

Fairs began in the Champagne region of Medieval France. Originally designed to promote quality livestock, the Fairs expanded during the 12th and 13th centuries to include textiles, leather, cloth, and spices. Six cities, located on ancient trade routes, worked collaboratively to ensure traveler safety, monetary credit, and quality of goods. According to Wikipedia, the series of six fairs, each lasting more than six weeks, were spaced through the year’s calendar: the fair of Lagny-sur-Marne began on 2 January; the fair at Bar-sur-Aube on the Tuesday before mid-Lent; the “May fair” of Provins on the Tuesday before Ascension; the “fair of St. John” or the “hot fair” of Troyes on the first Tuesday after the fortnight of St. John’s Day (24 June); the fair of St. Ayoul of Provins on the Exaltation of the Cross (14 September); the “fair of St. Remi” or the “cold fair” of Troyes on the day following All Saint’s Day (that is, on 2 November). Scheduled on a seasonal basis, these medieval fairs played an important part in establishing an interconnected European economy. Their success depended upon communities working together to establish credit lines, authenticity standards for merchandise, and safety and security for travelers going to and from France.

Fairs in the 21st century do not last six weeks, but state apiarists have to prepare throughout the year to prepare for the two weeks of a typical fair. Judges need to be invited well in advance of the Fair to share rules and judging schedule. With some states, a Bees and Honey judge will also judge the 4-H categories. Make sure that the contract with the judge clearly states exactly which classes and categories the judge will cover.

Some states have a honey culinary competition. If the Honey Culinary competition is in Bees and Honey, then another judge may need to be invited. When I was editor of the BeeLines, I would include tips from a honey culinary judge to help the competitors prepare their entries. Some common tips for competitors are as follows: Use fresh ingredients, especially flour, butter, spices. A judge wants to see what the competitor does with honey as an ingredient. “It’s not about the pretties,” according to Honey Culinary Judge Jill True. At the Kentucky State Fair, recipes are required, and honey must be the primary sweetener. If the recipe does not list honey as the primary sweetener, the entry is disqualified. Pennsylvania State Apiarist Karen Roccasecca is “lucky enough to be given custody of the recipe copies of honey food products.” She copies them for the PA State Beekeepers newsletter.

Entries in the observation hive category have been declining for years because so many details of a good observation hive out of a competitor’s control (i.e., are drones still available? will it be sunny the day before the observation hive is stocked, etc.). North Carolina’s state apiarist Don Hopkins tried to encourage entries in this category by raising prize premiums. Unlike other entries, competitors in the observation hive category can pick up the observation hives after judging. The “heartbeat” of a Bees and Honey Exhibit is an observation hive placed so that all may see the honey bees. Some states have a permanent observation hive with appropriate egress for the bees to go in and out via a tube in the building or shelter. Nucs to restock the observation hive need to be placed where they will not be the target of mischief nor inadvertently endanger fair-goers. The weekend before the Fair, I will purchase sugar syrup, clear Gorilla tape, and a couple of rolls of landscape burlap (smoker fuel). In Pennsylvania, the “Tools of the Trade” display usually is up each year and would be an aid if the observation hive was opened/knock over and broke, etc.

The pandemic forced many fairs to cancel in 2020, but Royal Winter Fair in Toronto, held in winter, will continue in 2021. According to Paul Kozak, this is one of the bigger events in Canada. There are honey vendors as well as a booth run by the Ontario Beekeepers’ Association, University of Guelph Honey Bee Research Center and others. There is an exhibition and awards for various categories of honey, wax.

Just as the medieval Champagne Fairs declined due to a variety of factors (i.e., Bubonic plague in the 14th century), some states have discontinued their state fairs, focusing on 4-H events and honey festivals. According to Michigan State Apiarist Mike Hansen, “Michigan has a lot of county 4 H youth fairs. A lot of animals are shown, including livestock, horses, chickens, and rabbits, are shown by kids. There is a midway….They offer shows, tractor pulls, etc. Generally they have a day where a circus is there, the circus is usually free and aimed at kids. It’s a really nice fair with something for everyone, but the strong tie to 4H makes it a real draw for families. There is a Michigan Honey Festival.”

State Fairs offer invaluable opportunities for the public to meet and interact with the American Honey Queen or American Honey Princess. The American Honey Queen Program coordinator Anna Kettlewell begins creating a travel itinerary for both the Queen and Princess at the beginning of the year. As soon as Kettlewell sets a schedule, I start reaching out to 4-H coordinators and the Kentucky Proud Cooking Stage coordinator. Since the Kentucky State Beekeepers Association has created a Certified Kentucky Honey Program, the coordinator tries to create interview opportunities with local television stations. The American Honey Queen and Princess are great ambassadors for the honey industry and good-naturedly help with honey sales or explaining the criteria for the honey categories. This year’s American Honey Queen and Princess are Jennifer Hinkel and Virginia Allen.

I don’t know that anything quite matches the sound of schoolkids’ feet pitter-pattering from the schoolbus to the observation hive or the wonder in their voices when one successfully finds the queen in the observation hive. Every year, I’m astounded at the creativity of competitors in displays, culinary arts, and beeswax products. The conversations with the general public indicate genuine concern for honey bees and all pollinators as well as willingness to consider how to help. To finish off the Bees and Honey Exhibit, I have budgeted some funds to buy pollinator plants and place in their state fairs, focusing on 4-H events and honey festivals. According to Michigan State Apiarist Mike Hansen, “Michigan has a lot of county 4 H youth fairs. A lot of animals are shown, including livestock, horses, chickens, and rabbits, are shown by kids. There is a midway….They offer shows, tractor pulls, etc. Generally they have a day where a circus is there, the circus is usually free and aimed at kids. It’s a really nice fair with something for everyone, but the strong tie to 4H makes it a real draw for families. There is a Michigan Honey Festival.”

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Resources:

- Eastern Apiculture Society, “An Overview of Do’s and Don’ts”
  http://www.easternapiculture.org/resources/honey-show-tips.html
- Eastern Apiculture Society, “Honey Show Prep”
  http://www.easternapiculture.org/resources/honey-show-prep.html
ABF has had continuous representation on the Honey Bee Health Coalition (HBHC) since its inception in 2013. The Coalition brings together beekeepers, growers, researchers, government agencies, agribusinesses, conservation groups, manufacturers, and consumer brands in a collegial, collaborative discussion to seek ways to improve the overall health of honey bees. Coalition members work together and through the organizations/groups they represent to explore the means to assist in implementing solutions that might help beekeepers and those who depend upon healthy pollinators to achieve and maintain healthy populations of honey bees.

Their effort is to promote strategies that develop high-quality, bee-friendly environments from rural farmland to densely populated urban landscapes to sprawling suburban areas. For details on the Honey Bee Health Coalition, which I hope all ABF members are by now familiar with, visit http://honeybehealthcoalition.org. If you are not aware of this group, I recommend you check out the four-part series written by Jerry Hayes, editor of Bee Culture Magazine beginning with the September 2020 BC issue. As Jerry sums up the rationale of HBHC: “We are all in this together.”

The effort of the Coalition, ably facilitated by the Keystone Policy Center, has and continues to revolve around three major working groups. The focus is the four Ps – Parasites, Pathogens, Pesticides and Poor nutrition and forage. HBHC has developed an extensive library of resources and has produced a number of high-quality vetted resources for beekeepers and farmers. To access: enter the HBHC site and choose the drop-down How we help bees. All materials are free.

Varroa Control Guide for Commercial Beekeepers

Beekeepers are generally aware that any solution to varroa mites that depends upon a single chemical is not going to be permanent. Apistan and Checkmite+, miticides that were once highly effective in controlling mite populations, are no longer reliable. Varroa mites have developed resistance to them. Despite increasing the amount (dosage) or the frequency of use, a chemical that does not consistently reduce mite numbers is indicative of developing a resistance and is potentially disastrous if being relied upon for mite control. While alternative (organic) chemicals and non-chemical methods can be substituted, they are harder to use, less effective and take precious time and more training to ensure they reduce mite numbers.

The increasing probability that varroa mites will develop resistance to amitraz, first described in the early 2000s by USDA scientists, and more recently by Rinkevich (2020) of the USDA Baton Rouge Lab, poses a serious threat to the long-term financial health of every commercial beekeeper. A newly created HBHC Guide to Varroa Mite Controls for Commercial Beekeeping Operations uses a case study of six different commercial beekeepers across the U.S. to examine how beekeepers might incorporate several different approaches delay resistance development of resistance to approved and off-label miticides. The guide aims to help commercial beekeepers evaluate a variety of their varroa control methods that can be integrated into a management plan to protect bees and their beekeeping business. It highlights the experiences of beekeepers who are having success as they implement alternative strategies to seek to limit their reliance on amitraz and avoid using unregistered products or application methods.

Due to the pandemic, the HBHC has cancelled its twice-yearly in-person meetings and instead met via Zoom, just as ABF and state and local beekeeping groups have had to do. We have been arranging in-depth discussions on key issues within the task forces with the help of government agency officials, commercial beekeepers and those who have a perspective to see the bigger picture. Additionally, HBHC along with (or) in partnership with the USDA co-organized a “Grand Challenge Workshop: Creating pollinator landscapes and beekeeping practices for a changing climate.” Over 125 stakeholders were included on this Zoom meeting. Topics included: Climate Change, Seed Mixtures for Pollinator Nutrition and Bee-pollinated Crops, Overwintering Colonies in Storage Buildings, and Improving Honeybee Nutrition. Results?

Bee Biosecurity

One of the potential focuses of the Hive Management Task Force is bee biosecurity, a way to look at Best Management Practices. Canada (CFIA - http://honeycouncil.ca/canadian-beepkepers-practical-handbook-to-bee-biosecurity-and-food-safety/) and the UK (DEFRA - http://www.defra-ni.gov.uk/articles/biosecurity) both have created food and apiary biosecurity documents. Biosecurity represents the ordinary and special precautions livestock farmers take to reduce the risks of disease transmission. It includes actions to protect a threat from being introduced to their animals and farm as well as having a plan for handling animals who develop signs of being unhealthy. They have a relationship with a veterinarian who is involved in regular animal care visits to help ensure healthy animals.

Honey bees are too often not considered livestock. State apiary inspection services are often under plant care divisions of governance. Inspectors are not veterinarians - as is the case in many other countries. Meghan Milbrath, who is both beekeeper and livestock farmer, says “biosecurity is a key part of raising livestock …[but] in the beekeeping world [beekeepers]…rarely discuss biosecurity and almost no one has detailed biosecurity plans for their beekeeping operation.”

HBHC hopes to explore bee biosecurity and climate change in further discussions. As always, your input is welcome and appreciated.

Sources and Resources

WHEN AND WHY DID YOU GET INTO THE BEEKEEPING BUSINESS?
I began beekeeping at 13 years old in 1964. In 1967, I taught the Boy Scouts Beekeeping Merit Badge. Years later, my wife and I bought a farm and a few hives which we turned into 200-300 hives in about three years. We joined the Etowah County Beekeepers Association and at that time, we only had about 10 hives. People wanted to buy beekeeping supplies. We ordered frames, wax foundations and everything you would need to start beekeeping and we opened our business, Lookout Mountain Honeybees.

DESCRIBE WHAT YOUR BUSINESS CURRENTLY DOES FOR THE INDUSTRY.
We keep up with all the current beekeeping news and pass on new beekeeping trends and ideas to others through our website. We host beginning beekeeping classes in the spring and advanced beekeeping classes in mid-summer. We give presentations to local clubs and at several state annual meetings.

WHAT CHANGES HAVE YOU MADE TO ADAPT YOUR BUSINESS TO THE CURRENT INDUSTRY?
We make it a priority to stay up-to-date on the latest in beekeeping equipment and much more.

WHAT ARE YOUR FUTURE GOALS OF YOUR BUSINESS?
We strive to keep beekeeping top-of-mind to the general public, stressing how important the honey bee is to our existence.

WHAT ARE YOUR CONCERNS ABOUT THE BEEKEEPING INDUSTRY AND HOW THEY WILL AFFECT YOUR BUSINESS?
The current rate at which our industry’s numbers are dropping, in large part due to the pressures created by other businesses polluting our earth and impacting the honey bee. We always encourage beekeepers to join the American Beekeeping Federation.

ARE YOU EXPERIENCING HIGHER THAN NORMAL ANNUAL LOSSES?
Thankfully, our losses have been minimal. The biggest loss we experienced was three years ago when a crop farmer next door to our apiary fogged his crops with two different pesticides and fertilizers. As a result, we lost nearly half our colonies. We have since made provisions with that farmer not to spray, which he agreed to after we were forced to move our remaining colonies, and he realized his next crop was not as productive without the free pollination provided by our bees!

WHAT IS THE STRANGEST THING YOU HAVE SEEN IN A BEE YARD?
The white-eyed drone is one of the strangest things I’ve seen in our bee yard.

WHAT IS THE MOST PRODUCTIVE CROP OR FLOWER THAT YOU’VE SEEN YOUR BEES WORK?
The White Dutch Clover and the Tulip Poplar are the most productive crops I’ve seen.

WHAT IS YOUR FAVORITE TYPE OF HONEY?
My favorite honey is muscadine.

WITHOUT MENTIONING NAMES, WHAT IS THE BEST AND WORST BEEKEEPING ADVICE YOU’VE EVER RECEIVED?
The worst advice I received was a warning that we would lose our bees because of the method we were using to treat our bees for mites. Fortunately, we didn’t listen, and the next spring this individual had to purchase Queens and bees from us because his mite treatments didn’t work. We still fog our hives with mineral oil and winter green.

WHAT IS YOUR FAVORITE BEEKEEPING TASK?
I enjoy raising queens.

WHAT BEEKEEPING TOOL OR PIECE OF EQUIPMENT DO YOU ENJOY WORKING WITH THE MOST?
I enjoy like the instrumental insemination equipment we use for our first spring queens.

WHAT IS THE MOST IMPORTANT PIECE OF ADVICE YOU CAN GIVE TO A YOUNG AND FUTURE SIDELINER BEEKEEPERS?
Keep your equipment updated, keep your bees healthy, and work towards maintaining a clean, green planet.

WHY ARE YOU A MEMBER OF THE ABF?
I joined ABF for the education and to work with both new and seasoned beekeepers, and for the latest in lobbying, research and education that the ABF offers.
Some of the sweetest words I’ve heard this year are, “Our event is on, and we want the Honey Queen or Princess to promote with us!” It is exciting to me the American Honey Queen Committee, and especially important to our Committee members who work specifically on the Honey Queen and Princess honey recipe brochures. It not only means that we are sending brochures to more parts of the country to spread the word about honey, but it also means that our supply of brochures will decrease, meaning a successful promotional year!

In 2020, we placed our normal order for recipe brochures but due to the cancellation of many large events, many of them are still in storage in Nebraska. Since, like honey, recipes never spoil, these brochures are for sale to members and organizations seeking high quality honey information and as an addition to any booth, exhibit, farmers market, educational venue, or store. Contact Tami Kuehl, the Queen Program’s brochure distributor at cbinvoices@cooknbeals.com to place an order for 2020 or 2021 brochures. For those of you hosting the Queen or Princess for an event, the brochures come to you free of charge; otherwise, the brochures can find their way to you for $10 per 100 plus shipping.

Believe it or not, work is beginning now on the 2022 American Honey Queen and Princess recipe brochure. Over the last several years, we’ve chosen a theme for our brochures (e.g., grilling and picnics, international, no-stove cooking, savory honey, breakfast, etc.), which has provided the queens great talking points, demonstratable recipes, and variety.

For the 2022 brochure, we’d love to hear from you. What kinds of recipes are your customers talking about? What types of recipes are consumers seeking that use honey? What recipes do you have that might be a great addition to our annual recipe brochures? We are seeking your input on the following:

• Brochure Themes – How can we tie recipes together in a single brochure?
• Recipes – Types of recipes you’d like to see - or share with us your favorite recipes
• Industry Facts – The brochures contain facts, such as honey substitution, pollination, and alternate uses of honey. What do your customers need or want?

Please email Tami Kuehl (cbinvoices@cooknbeals.com) or me at honeyqueen99@hotmail.com with your ideas. As we continue to pursue promotions in all states and territories this year and beyond, featuring regional favorites and specialties would be exciting! With your help regarding themes, new recipe options, and tips and tricks, we hope to develop a series of brochures to support even more nationwide honey promotions.

Let’s find more ways to get the 2020 and 2021 recipe brochures into the public with our American Honey Queen and Princess! Contact me with promotional and educational opportunities in your area. We are continuing to accept in-person and virtual event requests. To schedule promotions in your area, contact me at honeyqueen99@hotmail.com.
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How quickly the year is flying by! Summer means the return of delicious honey lemonade and other honey treats to keep cool and enjoy with the company of friends and family. Princess Virginia and I are well on our way to reaching our collective goal this year to promote honey and beekeeping in all 50 states and U.S. territories!

On April 9, I visited with 18 K-2 and 4th grade students at Elsie Whilow Stokes School in Washington, D.C. The students already had a great understanding of bees because their teacher lets them learn and work with the her as she tends to the school’s hives. We expanded their knowledge about the role of the beekeeper and the costs associated with keeping bees.

That evening, my presentation, “All About Bees,” was a hit when I visited virtually with the library in Tiverton, Rhode Island. Then I buzzed to the West coast for a virtual presentation with students at Dine College in Tsaile, Arizona. During my presentation to the Livestock Production, Animal Nutrition, and Zoology Classes, we discussed reasons why people keep bees, and I gave a brief Beekeeping 101 course to 24 students.

Next, I buzzed in to join nearly 100 3rd and 4th grade students in central Wisconsin on April 27. They had learned the basics about bees the week before from Wisconsin Honey Queen Anna Evenson, so I talked about the many jobs available in the beekeeping industry. Over 60 students participated in the live and zoom presentations.

In-person events resumed for me in May when I went to Mount Pleasant, Wisconsin to my first 4-H meeting of the year. As a 4-H alumna, I shared how the All-4-One club members could get involved in their county 4-H beekeeping project. On May 10 I visited with 50 members of the Cloverview 4-H in Waterford, Wisconsin where they learned about topics that would be covered in the 4-H Beekeeping Project and how honey can be used in place of cane sugar when cooking and baking. Bees and flowers were the main topics at the Burlington Back 40 4-H meeting on May 20 in Burlington, Wisconsin.

On May 4, I met with my local mayor and the Franklin City Council in Franklin, Wisconsin. I shared how easy and important it is to incorporate pollinator- and bee-friendly flowers into city gardens as well as encouraging new residential developments to consider native blooming plants and trees. I was proud to be presented with a proclamation in recognition of my accomplishments in promoting the beekeeping industry.

The BeeWeaver Honey Farm hosted me on May 27-30 in Navasota, Texas, at their annual BuzzFest, which was the talk of the hive! The theme of the festival was health through honey, which I incorporated into my demonstrations throughout the day for the 1,300 visitors. It’s easy to beautify yourself with products from the hive; you can moisturize with a honey and almond oilfacemask or pamper yourself with a beeswax lotion! Thank you to Laura and Danny Weaver for inviting me and hosting me for this event.

Bees, beekeepers, and the environmental role that each play was the focus of my visit with Bloomberg employees in the San Francisco, California, office. The employees tuned in for my presentation on June 3 as part of the company’s educational opportunity for employees and their families. The 200 employees received gift boxes containing pure California sage honey supplied by Beekeeper and Beekeeperman and several beeswax products, such as lip balms and beeswax food wrap, supplied by 2012 American Honey Queen Alyssa Fine (Pittsburgh Honey/Abielle Beauté). Thank you to Danica Fine for arranging this opportunity.

On June 10, I made a virtual stop at the Pojoaque Valley School District Middle School Mindset Math (math and science camp) in New Mexico to discuss all things honey bees, including the financial costs associated with becoming a beekeeper. We also explored how honey can be a substitute in a favorite recipe like honey chocolate chip cookies and how honey can alter the amount of liquid required for a recipe - both great math and science-based activities!

The Wisconsin Honey Producers Association invited me to attend its in-person meeting in Wisconsin Rapids on June 12. It was a delight to update members on my promotions as the 2020 Wisconsin Honey Queen and share information about the ABF. Wisconsin adventures continued on June 15 when I presented at the Roden Barnyard Adventures farm camp in West Bend. Campers learned about a different segment of agricultural life each day and this day was all things honey bee!

From the role of the queen bee to what roles honey bees play in pollinating Wisconsin agriculture, the topics got everyone excited about our favorite pollinating insect. We finished our morning with a delicious snack made possible by honey bees. Try the apple “bagel” recipe I demonstrated:

- ¼ C. chunky peanut butter
- 1 Tbsp. Honey
- 1 Granny Smith apple
- 2 Tbsp dried cranberries

Combine peanut butter and honey in a small bowl. Cut 1/2” from top and bottom of apple, discard. Cut remaining apple into 4 horizontal slices. Spread 2 slices with peanut butter mixture. Sprinkle with cranberries, then top with remaining apple. Enjoy!

Please consider inviting Princess Virginia or me to promote with you at your meetings, festivals, farmers markets, and fairs. We can bring extra attention to your event while highlighting the beauty of honey bees. With your help, we can work toward our goal of promoting in all 50 states.

Be sure to follow our Facebook page as well as our “Buzzing Across America” blog to stay up to date on our planned promotions. To schedule a promotional event with me or Princess Virginia, contact Anna Kettlewell at 414-545-5514 or honeyqueen99@hotmail.com.
Hello, ABF members! As normal activities resume, we are traveling more often while presenting online and in-person. Let’s pick up in late March. On March 29, I met with Mayor Paul Voelker of Richardson, Texas. We discussed how the city can continue its efforts to support honeybees and local beekeepers by spraying pesticides at night to limit bee exposure, notifying the residents about the spraying so hives can be relocated, and seeding empty fields with wildflower mixes annually to help beautify the areas. It was energizing to hear that the city plans to continue supporting honeybees and beekeepers!

In April, I taught 30 students from Amity High School in Woodbridge, Connecticut about the year’s work of a beekeeper. Since many students had some experience in beekeeping, I took them a step further and dove into swarms, which they found fascinating. Special thanks to Ted and Becky of Jones Apiary for arranging this presentation, their continued support of the American Honey Queen Program, and sharing their beekeeping passion with new beekeepers.

I connected with 66 middle school students at Dr. Martin Luther King Jr. Social Justice Middle School virtually in May as well. I gave five presentations to the science students, showing them the different jobs of worker bees. My school presentations continued with a virtual presentation to Our Lady of Confidence Day School in Willow Grove, Pennsylvania, where I spoke about how honeybees pollinate plants.

I traveled to East Texas and presented to the Marshall Beekeepers Association on April 8 where I talked about the challenges of beginning and more advanced beekeeping operations. On April 20, I gave a cooking-with-honey demonstration virtually to the Maumee Valley Beekeeper Meeting in Ohio when I showed how to make Chinese Moo Goo Gai Pan from the 2021 American Honey Queen honey recipe brochure. The flavors melded perfectly with the sweetness from the honey and the quick bite of fresh ginger root.

Have you received your recipe brochures yet this year? If you’re hosting Queen Jennifer or me at an event, you’ll receive a copy free of charge, but you can also purchase brochures by contacting Tami Kuehl at cbinvoices@cooknbeals.com.

On May 15, I visited the Jane Douglas Chapter of the Daughters of the American Revolution in Dallas and demonstrated how to arrange a pollinator garden using trees, bushes/hedges, vines, wildflowers, and ground cover.

On June 3, I visited with 100 members of the East Texas Beekeepers Association and demonstrated how the flavor of honey will influence a recipe. I made two batches of No-Bake Energy Bites, one with buckwheat honey and the other with cranberry honey. Try giving samples of a recipe using multiple types of honey to help your customers taste the differences in honey varieties. Next, I virtually joined the Northeastern Kansas Beekeepers Association’s Beekeeper Fun Day and showed how to incorporate honey into recipes, including substitution tips, which are easy and important to pass along to honey consumers. Thank you to Louann Hausner for coordinating my presentation and to the NEKBA for hosting a great educational event.

I am preparing for my upcoming promotions in North Carolina, Texas, New Jersey, and Indiana. Stay tuned and check out the American Honey Queen Facebook page at https://www.facebook.com/AmericanHoneyQueenProgram for event updates. Our schedule is filling up fast, so contact us soon so we can visit your state and complete our map of promoting in all U.S. states and territories this year. Contact Anna Kettlewell at 414,545,5514 or honeyqueen99@hotmail.com.
The following have contributed to ABF during the months of April, May, June and July 2021. These donations enable ABF to fund programs and services that benefit members and the American beekeeping industry.

**Honey Queen Fund**
- Leslee Alvarez, TX
- James Rodenberg, MT
- Keith Lehmann, FL
- Mike Klem, OH
- Patty Combs-Bialik, KY
- Brian Higgins, GA

**Honey Defense Fund**
- Nola Salisbury, CO
- Joan Gunter, ND
- Daniel Winter, NY
- Virginia Webb, GA
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- Roy Pfaltzgraff, CO
- Larry Krause, KY
- Jay Miller, ID
- Donald Schmidt, SD
- Charles Mráz, VT
- Robert Duffy, IN
- Thomas Lindeman, PA
- Kevin Calvey, OK
- James Rodenberg, MT
- Patricia & Lance Sundberg, MT
- Patty Combs-Bialik, KY
- Peter Genier, HI
- Brian Higgins, GA
- Daniel Geer, TN

**Foundation**
- Nicole Mendoza, CO
- Nola Salisbury, CO
- Deborah Hooks-Ward, NC
- Rhonda Mattson, CA
- Linda Mizer, NY
- Elizabeth Montoya, CA - A group of my third graders, raised this money to help the bees by hosting a bake sale!
- Andrea Greynolds, MI
- etsy.com/shop/tekoro
- Ronald Uzzell, FL
- Bradley Bechthold, IA
- Holli May Thomas - Gallery 1111 - The Pollinator Project
- James Rodenberg, MT
- Keith Lehmann, FL
- Patty Combs-Bialik, KY
- Tracy Middlebrooks, GA
- Robert Sears, MO
- Brian Higgins, GA
- Gail Hibbeln - In memory of Elizabeth Mueller
- Marie Diesburg - In memory of Joanna Diesburg
- Rick Sutton, KY - In Memory of Bob Harvey

**Research Fund**
- Victoria Kleber, PA
- Bradley Bechthold, IA
- James Rodenberg, MT
- Samantha Reaume, MI
- Keith Lehmann, FL
- Joe Daly, OH
- Patty Combs-Bialik, KY
- Tracy Middlebrooks, GA
- Brian Higgins, GA

**Friend of the Bees**
- Olga Nikolayeva, CA
- Thomas Lindeman, PA
- Tony Shaw, MA
- James Rodenberg, MT
- Mike Klem, OH
- Patty Combs-Bialik, KY
- Tracy Middlebrooks, GA
- Keith Lehmann, FL
- Brian Higgins, GA

**Legislative Fund**
- Todd Youngblood, TX
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- Robert McDonell, IL
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