

Illinois State Beekeepers Association



BULLETIN

1891-2019



MESSAGE FROM THE PRESIDENT

Corky Schnadt

The fall meeting was well attended with nearly every chair in the auditorium filled.

We had speakers covering many subjects: from the business side of beekeeping to scientific information about Integrated Pest Management to practical tips for overwintering bees and making beeswax candles.

On behalf of the entire Board, I want to thank those at the meeting for voting unanimously to retain in their current positions for 2020 all the Board members whose terms were expiring. It was a joy working with every member of the Board this past year.

Something new: Starting with this Bulletin, you can download the Bulletin from the link emailed to you. Now you can enjoy the Bulletin in color and take advantage of clickable links in the articles. We will continue to mail the Bulletin to everyone for now and will start moving those who are interested to an online-only version in the future.

Hope to see you at the ABF Conference in Schaumburg, Illinois from January 8 through 11, 2020.

Best wishes to you and yours in the coming holiday season and Happy New Year!

Corky

CONGRATULATIONS TO THE 2020 ILLINOIS STATE BEEKEEPERS ASSOCIATION BOARD

Thanks to the unanimous vote of the membership at the annual meeting. The following board members are returning for another term:

- Corky Schnadt, Hainesville, IL – President (1-year term)
- Rose Leedle, Mulkeytown, IL – Vice-President (1-year term)
- Charity Davis-Woodard, Dorsey, IL – Secretary (1-year term)
- David Nellis, Ava, IL – Treasurer (1-year term)
- Larry Kregel, Marengo, IL – Northern Region Director (3-year term)

2020 AMERICAN BEEKEEPING FEDERATION CONFERENCE & TRADESHOW

Renaissance Schaumburg Convention Center Hotel
Schaumburg, Illinois
January 8-11, 2020



The ABF Conference & Tradeshow is right around the corner, and it's taking place in your neck of the woods! The Illinois State Beekeepers Association is pleased to join the American Beekeeping Federation in hosting beekeepers from across the United States and the world.

Experience the Future of Beekeeping!

The 2020 ABF Conference & Tradeshow promises more education, more research, and more networking than ever before. We're partnering with industry experts, researchers, exhibitors and your beekeeping peers to bring you all the latest in best practices and bee health.

Don't miss this opportunity to network with 900+ beekeepers and meet with 100+ companies providing beekeeping products and services—all in one location. The expo hall is open for four days, including Saturday, to give you plenty of time to shop.

Register today.

ISBA members are eligible to register at the ABF member rate! Use promo code **ISBA2020** at checkout. Visit the conference website: www.abfconference.com

Education for All Beekeeping Skill Levels

- Keynotes by thought-leaders Dr. Samuel Ramsey, University of Maryland, Dr. Jonathan Lundgren, Blue Dasher Farm, and Dr. May Berenbaum, University of Illinois at Urbana-Champaign
- 80 distinguished speakers discussing hot topics and trending issues
- 20 interactive and hands-on workshops
- Tradeshow packed with the latest beekeeping innovations
- Kids and Bees program for the next generation of beekeepers

Optional Activities

- 2020 American Honey Show to show off your bees' talent
- Thursday night social with dinner and show at the IMPROV
- Exclusive meeting of the nation's commercial beekeepers
- ABF banquet and coronation of the 2020 American Honey Queen and Princess

KIDS AND BEES: FUN FOR THE WHOLE FAMILY

On Friday, January 10, from 9:00 am to 12:00 pm, hundreds of little feet will pitter-patter through the halls, dodging beekeepers as they wander their way to their very own beekeeping event. Plan now to bring your elementary-aged kids to the renowned Kids and Bees program. This free, educational session has been a featured event during the ABF Conference & Tradeshow for over 20 years and is a don't-miss opportunity for school groups, home-schooled kids, scouts, and clubs.



For more information on volunteering or to sign up, contact us at thehive@beegirl.org or 541-709-1127.

UNIVERSITY OF ILLINOIS BEES AND BEEKEEPING SHORT COURSE

April 18, 2020

Lectures, hands-on workshops, and informal discussions on:

- Bee Anatomy
- Bee Breeding & Genetics
- Bee Diseases, Parasites and Pests
- Bee Health
- Bee Learning
- Bee Nutrition
- Colony Collapse Disorder
- Pesticides & Bees
- Pollination
- Sting Allergies
- Swarm Control
- Wintering in the Midwest

INSTRUCTORS: Prof. Gene Robinson, Prof. May Berenbaum, Prof. Adam Dolezal, and Members of the University of Illinois Bee Research Facility staff

GUEST INSTRUCTOR: Dr. Juliana Rangel, Texas A&M University

LOCATION: Bee Research Facility and Carl R. Woese Institute for Genomic Biology—both new, state-of-the-art buildings. The Bee Research Facility has specially designed flight cages that will allow us to do hands-on bee work indoors regardless of the weather, if necessary. Those choosing to participate in the hands-on activities must bring and wear **their own** protective veils, suits, or gloves. Non-participants can view from outside the flight cages.

FEE: \$100 includes course materials, refreshments and lunch

DATE & TIME: Saturday April 18, 2020, 8:30 AM – 5:00 PM

REGISTRATION: OPENS JANUARY 13, 2020: Email: lcundiff@illinois.edu; Phone: (217) 265-7614

Payment by credit card is the only means to register for the 2020 course.

To pay by credit card, watch Facebook for link information:

<https://www.facebook.com/IllinoisBeeShortCourse/>

LIMITED TO 50 PARTICIPANTS, SO REGISTER EARLY!

Sponsored by:

Department of Entomology

School of Integrative Biology

Carl R. Woese Institute for Genomic Biology

Dadant & Sons

WE “MITE” NOT KNOW WE’RE LOSING UNTIL IT’S TOO LATE

Alison Sankey and Adam Dolezal

Bee Research Facility/Department of Entomology
University of Illinois at Urbana-Champaign

As beekeepers and scientists, we make colony management decisions based upon best management practices in order to keep the honey bees at the University of Illinois Bee Research Facility healthy. We are stringent in our varroa mite monitoring and treatment program; this involves monthly alcohol washes, regular drone comb removal, brood breaks when possible, and chemical treatment when necessary. This approach, which most would consider an application of Integrated Pest Management (IPM), combines monitoring with a hierarchy of responses. In theory, this allows beekeepers to make scaled decisions that keep pest pressure down while reducing unnecessary applications/treatments. For the U of I bee research labs, this comprehensive approach to mite control is applied very rigorously – more so that would likely be practical for most beekeepers – but it is important for us to ensure our bees are healthy enough for experiments (which are often yet another stress the bees face).

In spite of this regime, sometimes the mites win. Without the intensive level of monitoring done on all of our colonies, we might not know that we’re losing the fight until it’s too late. During this past summer, we discovered a colony where the mites were winning despite our best efforts, and this wasn’t easily visible - even to the trained eye. We’ve shared the story of this colony, referred to here as Mite Colony (MC), with many beekeepers, including attendees of the Illinois State Beekeepers Association fall meeting, and received a lot of interesting feedback- while there are still mysteries, we think there is something to be learned from this experience as a case study in the difficulties of IPM in beekeeping.

A bit of background on MC and a similar colony in the same apiary, who we’ll call Healthy Colony (HC), for comparison. Both colonies’ queens were purchased from the same large commercial queen producer and installed in 2018. They received oxalic acid vapor treatments during winter 2018.

Beginning with inspections in the spring of 2019, both colonies seemed optimal- queens with quality brood patterns and strong enough to require splitting in May to prevent swarming. While alcohol washes showed that the mite levels in MC were above the treatment threshold that we maintain for our research colonies (the relatively stringent 1% or 3 mites/300 bees), the levels were just surpassing the threshold established by the Honey Bee Health Coalition (2-5% or 6-15 mites/300 bees; <https://honeybeehealthcoalition.org/varroa/>). As a result, all colonies in the apiary, including MC and HC, were treated using Mite Away Quick Strips (formic acid strips) during the middle of June.

For weeks after the treatment, both colonies seemed to have responded positively. If it weren’t for the unique experimental setups of the many research projects conducted at the University of Illinois Bee Research Facility, we may not have realized something insidious was happening inside MC. Specifically, most experiments at the Bee Lab begin with “day-old” honey bees; these are collected by storing brood frames with newly emerging bees in an incubator and brushing the day-old bees from the frame daily. These “day-olds” allow us to age-match bees for experiments and, because they cannot fly, aid in setting up experiments. When setting up the experiments, which often involves plastic bins filled with thousands of crawling bees, we monitor them for mites and signs of Deformed Wing Virus (DWV).

On July 22nd, brood frames of newly emerging bees were collected from 8 colonies including both MC and HC. On July 23rd, during the experimental setup (which involved individually tagging each individual bee!), high levels of phoretic mites and bees with deformed wings were observed. The 6.7% mite load (188 mites/2823 bees) was alarming considering the day-olds used in experiments the previous week had 0.6% and 0.8% mite loads. On July 24th, we followed up by doing alcohol washes on the day-old bees and found that while HC had

Continued...

an undesirable 5.3% mite load, MC had a mind blowing 51% mite load.

We returned to the colonies on July 24th to do an alcohol wash on the nurse bees, per normal alcohol wash procedures; surprisingly, the levels of mite infestation were barely above our very low threshold. While we did see bees with DWV being removed from the colony entrance at MC, the queen was still laying well and the brood pattern remained good. By this point, the colony had also nearly filled 3 medium supers with honey.

Throughout the rest of the summer, we continued to monitor MC and HC. MC's mite levels rose exponentially, and HC's rose predictably. It took 3-4 weeks from our initial observation for the MC colony to have mite levels that would really warrant treatment, but this rise occurred dramatically. At this point most beekeepers would have performed a brood break, done another mite treatment,

requeened the colony, or any combination of these to try and remedy the mite and virus issues. However, since we're researchers with a keen interest in honey bee health and colony dynamics, we wanted to record in real-time the changes in the colony as a result of the mites. Before an inevitable collapse, we collected as many samples from MC as we could; frames of honey, pollen, bees and brood are all in the chest freezer. Collecting the queen, marked red (the queen color of 2018) and while she walked across a frame completely laid full with eggs, was the hardest. She had continued to do the best job she could in spite of the mites and virus overrunning her colony. We think that's the lesson to take away from this saga- even when we're trying our best to be responsible beekeepers sometimes things can still fall apart around us. The most important thing to do is not write off a failure as an anomaly and move on, but share your experience with others in the hopes that they have some insight to share!

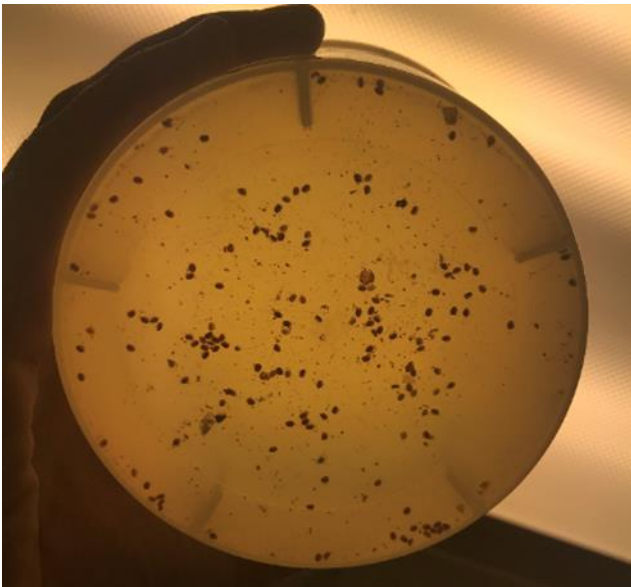


Photo of alcohol wash container; we estimated 153 mites in our 300 bee wash – over 50% infestation!



The colony looked very healthy on the surface, with good brood patterns, strong population, and lots of honey. Washes on nurse bees were comparatively low until 3+ weeks later, when mite levels were >30 per 300 bees (~10%). This was despite “day-old” bees exhibiting >50% infestation earlier in the summer.

IT'S TIME FOR THE OA DRENCH! HERE'S HOW

Eleanor Schumacher

Oxalic Acid has become one of the most popular miticides American beekeepers use. This organic acid is especially valuable because it doesn't build up in the wax, making it a safer choice for bees in the long run. But a lot of beekeepers are worried about the safety of oxalic acid for human health. It's well known that the vaporization technique of treating for varroa mites has to be done very carefully. Oxalic acid is a very strong acid – on the pH scale of 0 - 14, OA registers at 1.4. Beekeepers need to wear protective gear, like gloves and goggles, and above all, use the correct respirator – either a full-face or a half-face mask with organic acid/acid vapor cartridges. Beyond that, some of the vaporizer wands designed for insertion into hive entrances have caught frames on fire when the comb and wooden frames get too hot from the wand. For these reasons, some beekeepers are afraid of oxalic acid, and miss out on this great treatment – a treatment for which mites haven't yet developed a resistance.

At this point, I'll admit it. I am one of the beekeepers afraid to use oxalic acid. I've heard horror stories about beekeepers getting rushed to the hospital after an accidental whiff of OA, or hives going up in flames. But I won't be ashamed! There are bunches of us in Illinois afraid to use the OA vapor technique. So many of us, in fact, that we might start a club next year at the ISBA Fall Meeting. Mid-November is the perfect time to get together to plan our alternate oxalic acid treatment strategy. We may call ourselves the "OA Drenchers Club". Our fellow beekeepers may call us "Polar Bears", doing the unthinkable – drizzling sugar syrup directly onto our bees – in the cold!

The drench, also known as the dribble method, is a very particular treatment. It's only appropriate

to perform the drench when the colony is broodless, because the acid is known to kill brood. This treatment may also kill a small percent of your worker population, so it should only be performed once annually, and shouldn't be done on very weak colonies or small, struggling clusters.

Outdoor temperatures should be cold. The drench works best when bees are tightly clustered. Dr. Marion Ellis, researcher from University of Nebraska, recommends performing this treatment when temperatures are between 32 and 41 degrees. While it sounds counterintuitive and against every rule of beekeeping to crack into a cozy, propolized hive to shower your bees with syrup in the winter, there are beekeepers worldwide who have routinely drenched their bees in these temperatures, as well as temperatures dipping into the 20s, and their YouTube videos and anecdotal testimonies can be found all over the internet. That said, common sense will ensure that most of us will look for that warm 40-degree day between Thanksgiving and Christmas to drench our bees.

Now that we've covered the key topics of protective gear for the beekeeper and appropriate outdoor temperature, it's time to get the job done. Now we move to the important questions: Where do we purchase oxalic acid? How do we administer the treatment? What does the label say? First, it's common knowledge that oxalic acid has been around for a long time, widely available at the hardware store in plastic jars labeled "Wood Bleach". So, if Grandpa used generic wood bleach to brighten his deck, and then turned around and drenched his bees with the same product, he was breaking the rules, and might have hurt his bees.

Oxalic acid for the treatment of varroa mites has to be between 95% to 100% pure to be safe for bees and effective against mites. Popular blogger Rusty Burlaw of “Honey Bee Suite” discusses this in her helpful guide to the oxalic acid drench. She mentions that her go-to oxalic acid of choice is Savogran 10501 Wood Bleach, which is 99.6% pure. She also mentions that other brands should have their purity information on their MSDS (Material Safety Data Sheet) label. Per the Illinois General Assembly’s Illinois Pesticide Act (415 ILCS 60/1 et seq.), “All products offered for sale within the state of Illinois that make a “pesticidal” claim must be registered with the Illinois Department of Agriculture.” So, oxalic acid products without specific labeling for varroa mite control are not permitted for use in beehives per the Illinois Pesticide Board. That said, Illinois-legal oxalic acid is widely available and easy to come by. For example, inexpensive Brushy Mountain Oxalic Acid packages are still available at Dadant Beekeeping Supplies, but newer on the market is Api Bioxal, neatly packaged with very clear instructions for use.

The instructions:

Based on what was mentioned above, you will follow oxalic acid product label instructions when you administer varroa treatment for your hive. However, for review (and for Grandpa’s sake), here we will share instructions for the oxalic acid drench method, beginning with the United States Department of Agriculture’s Agricultural Research Service’s Bee Research Laboratory label for the common chemical Oxalic Acid Dihydrate, approved by U.S. EPA in 2015. Then we will discuss tips distilled from other popular authorities, including Marion Ellis, Randy Oliver, and Rusty Berlew.

Oxalic Acid Dihydrate for varroa mite control on bees. EPA Reg. No. 91266-1

Personal protective equipment for the drench method: Long-sleeved shirt and long pants, socks, and shoes, chemical resistant gloves, goggles, and half-face respirator with cartridge and/or particulate filter.

Mixing the Solution: Dissolve 35g of Oxalic Acid Dihydrate in 1 liter of 1:1 sugar and warm water. Smoke the bees down from the top bars. With a syringe or an applicator, trickle **5ml** of this solution directly onto the bees in each occupied bee space in each brood box. The maximum dose is 50 ml per colony whether bees are in nucs, singles, or multiple brood chambers. Under certain unfavorable conditions (e.g. weak colonies, unfavorable overwintering conditions), this application method may cause some bee mortality or overwintering bee loss.

Tips from the pros:

Measure in grams. The vast majority of instructions for the OA drench solution measure OA crystals in grams. While it is true that Randy Oliver’s OA treatment table includes three different recipes, resulting in three choices of OA drench strength, and while a simple recipe using American kitchen measurements does exist (one ounce of oxalic acid, or two tablespoons to 1½ cups of sugar and 1½ cups of water will create a mixture for 15 hives), the OA solution should be measured by grams.

Use distilled water. Not sure if you have hard water, or if your water is mineralized? You might want to make a small test batch of OA solution to find out. OA reacts with certain minerals – especially calcium, which bonds with the acid, making deposits, and keeping it from dissolving properly. A white substance in your mixture will show that your water is too mineralized for use in your OA solution.

Stirred, not shaken. The OA mixture can build up pressure when shaken, and could burst from

the mixing container in unpredictable ways (i.e. in your eye). To be safe, stir the mixture, and stir until the OA crystals are dissolved.

Use a syringe with clearly visible 5 ml measurements: According to Randy Oliver, it's easiest to dispense 5ml of OA solution evenly over each seam of bees using a 60ml syringe. These syringes are easy to come by – they can be picked up at any feed store. Because some syringes are measured in increments of 10 rather than 5, beekeepers need to take care not to over apply. 5ml is the maximum amount per seam of bees – more will hurt them.

Work with a partner: This time of year, bees have ideally stored away a deep full of capped honey, or at least a whole bunch of overhead stores. To dribble the OA solution directly on the bees, you will often need to lift the top deep to get to the cluster. A hive with a top deep full of honey will be easier to treat with all of the bees clustered in the bottom box. However, it's highly probable that the cluster will be split between both the top and bottom box, and the drench will need to be applied both over *and under* the cluster. This means one person will tip the top box up, splitting up the cluster and exposing the bees clustered in the bottom of the top box. The other beekeeper will divide the 5ml-per-seam solution between all seams in the cluster of the bottom box, and then the seams in the tipped-up top box. In other words, the 5ml will be split between boxes, with more of the solution spent on the box with the larger bee population.

Look for results: If you use a screened bottom board with a mite board or tray, take time to admire your work – look at your mite drop. An

oxalic acid drench performed in a broodless winter period is documented as being between 90% to 95% effective. You'll be able to observe a significant number of mites dropping for up to one week.

More is not better! 5ml per seam is the maximum amount of solution tolerable to the bees. Also, this treatment is only safe to perform once annually. OA is a very strong acid, and the drench solution has a much stronger effect than vaporization. It can be additionally harmful if performed on a colony without honey stores. Hungry bees will choose to digest more of the solution, which is harder on their gut.

The November/December application of an oxalic acid solution is a critical weapon against varroa mites. When the colony is completely broodless, all of the mites are exposed and vulnerable to the acid. While oxalic acid can inflict a little harm on the bees, the mites are far more susceptible to oxalic acid, and the trade-off of a slightly shortened worker lifespan is worth it. If you've wanted to use oxalic acid to knock your mite population down but you've been afraid of this powerful chemical, suit up and give this simple treatment a try. Hopefully you have found enough information here to go out and give your bees something they really want this holiday season – a virtually mite-free winter.

For more information, Randy Oliver's many articles on oxalic acid and the dribble method can supplement and tell you more, and so can his Oxalic Acid Treatment Table, which lists three different strengths of drench application, with easy-to-follow solution ratios.

<i>Oxalic strength</i> →	<i>“Hot”</i> 4.2% w:v	<i>“Medium”</i> 3.2% w:v	<i>“Weak”</i> 2.5% w:v	Notes
OA crystals	1	0.75	0.6	Oxalic crystals must be measured by weight. Sugar and water are about the same by weight or volume (1 pint of either granulated sugar or water weigh 1 lb)
Sucrose	10	10	10	
Dist. Water	10	10	10	
OA crystals	60g	45g	35g	
Sucrose	600g	600g	600g	Makes 1 liter Treats about 20 colonies
Dist. water	600ml	600ml	600ml	
OA crystals	100g	75g	60g	
Sucrose	1 kg	1 kg	1 kg	Makes 1700ml Treats about 33 colonies
Dist. water	1 liter	1 liter	1 liter	
OA crystals	232g	174g	139g	
Sucrose	5 lb	5 lb	5 lb	Makes 1+ gallon Treats about 75 colonies
Dist. water	2.5 qt	2.5 qt	2.5 qt	
OA crystals	1112g (2lb 7oz)	834g (1lb 13.4oz)	667g (1lb 7.5oz)	
Sucrose	25 lb	25 lb	25 lb	Makes 5 gallons Treats about 375 colonies
Dist. water	3 gal	3 gal	3 gal	

KALAMAZOO BEE SCHOOL, KALAMAZOO, MICHIGAN

Kalamazoo Bee School is a day-long event featuring a keynote speaker followed by breakout sessions for beginners to intermediate through experienced beekeepers. It is an amazing networking opportunity if you are curious about beekeeping or thinking of getting your own hives. Raffle tickets will be sold throughout the day for a number of prize packages. Winners will be announced toward the end of the day, with grand prize winners after the last session. Vendors will be available throughout the day selling bees, bee-related equipment, and other products.

Our [annual bee school](#) is February 15, and registration is now open. There’s even an early-bee special, so save some money—and perhaps even take care of a few Christmas gifts—by signing up now.

Our keynote speaker is the amazing, super-knowledgeable and super-engaging Dr. James Tew. We also have two queen rearing experts, a comb honey presenter, lots of bee-ginners sessions, LOTS of vendors from whom you can purchase bees, supplies and equipment. More details in the months ahead, but while we do a school every year, 2020’s [annual bee school](#) with Dr. James Tew is one you don’t want to miss.

PHOTO HIGHLIGHTS, ISBA ANNUAL FALL MEETING.



Corky with Steve Chard, former Chief Apiary Inspector. He received the new award for Outstanding Contributions to Beekeeping. The award is also being named after him.



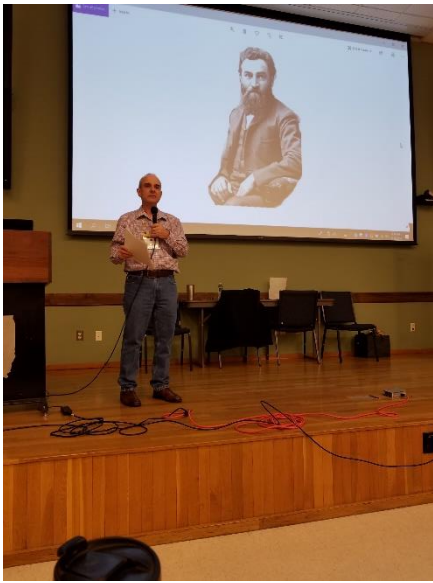
Doug Leedle was awarded the Illinois State Beekeeper of the Year. He's pictured here with David Nellis, Treasurer, and Corky Schnadt, President.



The Pioneer Award was given to Karen Pruiett. Pictured L-R, President Corky Schnadt, Rena Wilson-Jones, and Central Region Director Bryan Miller



CONGRATULATIONS!



Gary Reuter, University of Minnesota and his presentation, *The Differences between Summer & Winter Bees*.

President Corky Schnadt discusses CP Dadant, great great grandfather to Gabe Dadant, and the continuous relationship ISBA has had from Charles Dadant (Gabe's great, great, great grandfather) to Charles Dadant III, Gabe's son, who was in the audience.

CP Dadant was on first Board and was a charter member along with his father, Charles. There were 15 charter members.



Above and left – Dr. Adam Dolezal, University of Illinois, discussing Integrated Pest Management.

Below – Vendors





Illinois State Beekeepers Association
PO Box 21094
Springfield, IL 62708

Membership in the Illinois State Beekeepers Association is open to all persons interested in bees and beekeeping. Beekeepers are urged to join through their local Associations or individually if no local Associations are available. Dues are **\$10** for the calendar year January 1 – December 31 only. Dues include a subscription to this newsletter, the ISBA Bulletin.

Make checks for membership payable to: ISBA and mail to: Illinois State Beekeepers Association – Membership, PO Box 21094, Springfield, IL, 62708

Address changes: Send old and new address six weeks prior to date of change when practical to the Association Secretary. At-large members can email the change to the ISBA Membership Director at spetrilli45@gmail.com

American Bee Journal

\$23.80 – 1 year

\$45.05 – 2 years

\$63.75 – 3 years

<http://www.ilsba.com/links.html>

(888) 922-1293

Bee Culture

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\$20 – 1 year, BEEKeeping Your First 3 Years

www.beeculture.com