LANE COUNTY BEEKEEPERS ASSOCIATION
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March 2023 NEWSLETTER

President's Message
by Fonta Molyneaux

Spring is on the horizon! Even with these very cold and snowy conditions we've been enduring the last few weeks and know how quick Oregon is prone to pivot from season to season!

I am excited to be planning my seasonal queen rearing project here on the farm! So far I have lost only two hives out of 40! So I'll have plenty of bees to work with this season!

For new beekeepers the first year with an overwintered hive can be intimidating. They come out of winter ready to stretch out the brood nest and swarm. Making splits is a valuable tool for suppressing swarms, reducing mite pressure and replacing hives that didn't make it or are aging out. A google search will provide so many variations on splitting that it's hard to know where to start! However, one of my favorite parts of teaching others is demystifying complicated tasks into easy and accessible practices. This month I'll be doing a presentation on making splits, which happens to be my favorite part of beekeeping. I use several easy methods that produce excellent locally-adapted queens through frame based queen rearing, and I'm so excited to share them with you at our general meeting.

In my experience even if you have a way of doing something in beekeeping its very advantageous to learn more than one way to do it. Weather and seasonal influences guide the methods that I choose each season so that these young queens and clusters the best chance to be well-mated and ready to build out a brood nest! You can never have too many tricks in your beekeeping bag!

In my presentation, I'll outline not only a basic split for beginners, but more advanced methods that produce more queens. After taking many classes on the topic I have found the devil is in the details. So not only will I share my recipes for making increase step by step, I'll also provide a handout that gives you the direction to replicate these methods in your own apiary!

I look forward to sharing my passion for bioregional queen rearing with the club for the very first time. Please join us!

GENERAL MEETING
March 21, 2023
In-Person Meeting
Come early to socialize and share your Questions with experience beekeepers.
Social 7:00pm-7:30pm

Early Session
Doors open at 6:00pm
Session Starts at 6:15pm
Topic: Yellow Jackets
Speaker: Ken Ograin
Fireside Room

General Meeting
Topic: Making Splits
Speaker: Fonta Molyneaux
Program begins at 7:30pm

Trinity United Methodist Church
440 Maxwell Road, Eugene
Turn West off River Road (South of Beltline)

Inside this Issue:

Upcoming Events & Announcements

April 21st-22nd- Glory Bee Drive-Through to Pick Up Bees Packages
Package Bees 8:00am-Noon
May 6th - Pick up for Nucs 8:30 am-10:00pm

May 20th-21st - Wildflower Festival
Location: Mt Pisgah, Eugene

June 19th -25th - Pollinator Week
LCBA will be participating.

June 30-July 1 - Oregon Honey Festival
Location: Talent Oregon

July 7th-9th - Oregon County Fair
Location: Veneta, OR

July 20th-24th - Lane County Fair
LCBA will have a display booth.

Honey Bee Pheromone Communication

The Western Apicultural Society held a webinar earlier this month on honeybee pheromones. Honeybees (*Apis mellifera*) have one of the most complex phermonal communications systems found in nature.

There are 15 known glands that produce an array of compounds. These chemical messengers secreted by a queen, drone, worker bee or laying working bee elicit a response in other bees.

The chemical messages are received by the bee's antenna and other body parts and are produced as a volatile or non-volatile liquid and transmitted by direct contact as a liquid or vapor.

Some of the pheromones used by honeybees are alarm, brood recognition, forager, drone, nasanov scent and several queen pheromones.

If you want to learn about pheromones this is the video for you. Ken and I learned a lot.

Click on link to view: https://youtu.be/-c0ZX5IbCnA

Nancy Ograin, Editor

Congratulations Jeff Warren!

Jeff Warren was winner of our honey drawing at the February meeting. He won a $25 gift certificate to Down to Earth. All proceeds from our honey sales go to the OSU Bee Lab for research.

Thanks Jeff for donating all these past years!

This is just our way to thank you for supporting our bee lab. We are happy to accept any amount of honey!
If you would like to contribute contact Katharine Hunt. keehhunt@gmail.com 541-607-0106

LCBA Swarm List

Reminder to let us know if you would like to remain on the swarm list or for those new members who would like to be added. You **must** have experience in removing swarms.

Membership dues must be current.

Contact Nancy or Judy:
Nancy nancy.ograin@gmail.com 541-935-7065
Judy judyscher@gmail.com 541-344-2114

It's Membership Renewal Time!

If you would like to continue receive the monthly newsletter and meeting information please renew by March 31st if you have not already done so. Dues are $25 per household per calendar year (Jan-Dec 2023).

Pay by check, PayPal or credit card. Mail checks to Polly Habliston, LCBA Treasurer, 1258 Dalton Drive, Eugene, OR 97404. Click on link below for membership form and to pay online. http://www.lcbaor.org/membership.htm

Thanks for supporting LCBA!

Upcoming Tentative Meeting Topics

General Meeting			Early Session
Apr	**18**	All About Swarms	Bee Math
May	**16**	Understanding the Brood Nest	All Things Comb
Jun	**20**	Varroa Mites	Honey Extracting
July	**18**	Unsung Bee Diseases	Treatment Options
Aug	**15**	Early Fall Preparation	Q&A

Oregon State University
HONEY BEE LAB

Volunteers Needed to Help Collect Pollen For Pollen Database

Dr. Ramesh Sagili is developing a pollen nutritional database. He talked about the grant he received last year at our January meeting. The hope is someday when you go to the USDA listing of backyard plants it will tell you the pollen nutritional composition. Bees can't tell what plants have the best pollen, they seek out the plants with the most nectar, which may not be the best pollen source.

The pollen nutritional composition database generated from our findings will serve as a robust tool for beekeepers, researcher, policy makers and growers in selecting plants for habitat development in a scientific way rather than being based on just attractiveness of a plant species to bees. This database will be the first of it's kind for bee forage plants in North American and will benefit all bee pollinators, native and managed.

If you would like to help out with collecting pollen for the study, contact Dr. Ramesh Sagili at: Ramesh.Sagili@oregonstate.edu

PDF file on pollen collection methods and other details:
Pollen_Collection_Factsheet.pdf (lcbaor.org)

Link to the training video (the video starts after about 30 seconds):
https://oregonstate.box.com/s/wl8tngbid8qmkofovcvfd29uqndbfxit

Interested volunteers can fill the following spreadsheet, so that it will allow us to contact them periodically as part of this project:
https://docs.google.com/spreadsheets/d/14N3VypqJRQdIA2kxUq5sLTgjprQG8j_yA7MbAfBE03o/edit?usp=sharing

Google form to request sample jars for pollen collection:
https://docs.google.com/forms/d/1c3rAhdzkRpZSEXV0mstJgIrqf4e9qKaVjwyH22XJJeY/edit




Collection Methods

Welcome New Members

Lyndsie Brett	Eugene
Tammy McCoy	Veneta
Jess Jessup	Mapleton
Jantzen Lloyd	Eugene
Taj Morgan	Eugene
Laura Efron & Ken Butters	Eugene

New Member Info

Check out our February newsletter for things you should be doing to prepare for getting your bees. There is also a list of helpful videos and useful links page 3

BeeNewsFeb23.pdf (lcbaor.org)

Spring Equinox, Excerpt from Honey Bee Suite, Rusty Burlew

As the spring equinox approaches, I like to remind beekeepers that spring can be tricky. If you're not paying attention, it's easy to lose a colony to starvation. In spring, several different things happen all at once to overwintered colonies. Most experienced beekeepers know what to look for, but it can be a little overwhelming if this is your first spring as a beekeeper.

Your colony is growing: As we approach spring, the food stores are at their lowest level just as the number of bees increases dramatically. In the past, many colonies have fought their way through winter winds, freezing temperatures, increasing pathogens, and long hours of darkness only to die of starvation just days before the first nectar flow. Don't make this mistake! If you have any doubts about their food supply, check on your bees soon.

Feeding frequency: If your bees didn't have sufficient honey for the entire winter, you may have already begun feeding them on a regular schedule. If you have been feeding once every two weeks, for example, you may need to increase that to once a week or even more. I can't emphasize enough that if the colony is healthy, its food requirement will explode. **Check your colony for food.**

Don't confuse pollen with nectar: That sounds silly, right? But just because you see early spring bees bringing in loads of pollen, you shouldn't assume they are also collecting nectar. Lots of plants, especially trees, shed gallons of spring pollen without producing a drop of nectar. It's easy, especially as a beginner, to see load after yellow load of pollen coming in and assume all is well. **Check your colony for food.**

Warmth is deceiving: It's easy to be lulled into complacency by warm breezes. On warm spring days when the sun is out, so are the bees. They zip around the bee yard, looking robust, but it may be an illusion. They can't eat warmth and sunshine. So even though it makes them playful, don't assume they have enough. **Check your colony for food**

Starvation is on us: So many bee ailments are hard to control; mites, viruses, brood diseases, temperature extremes, predators, and pesticides are difficult-to-control moving targets. Even experienced beekeepers can fail to manage all the assaults on their bees, but starvation is different. Starvation is different and is easy to avoid. Food management falls squarely on the shoulders of the beekeepers. So by now, you know: **Check your colony for food.**

The year, the vernal or spring equinox occurs on March 20th. The worst aspect of the spring equinox is its proximity to the summer solstice. In other words, the spring equinox is the halfway point of the lengthening-day cycle. Only three months later, on June 21, the days will begin to get shorter and your bees will start preparing for winter. In just ninety days, the hours of daylight will begin to diminish and we beekeepers will begin thinking about overwintering our colonies. Again. It seems like that's all we do: prepare for winter, overwinter, and recover from winter.

So there's the second tricky thing about the spring equinox. It lulls us into thinking our bees will be fine now that spring is here. But as I like to remind you northerners, the six weeks from mid-March until the end of April can be a bee killer. Temperatures are erratic, rain squalls are common, and nectar may be scarce even though pollen is plentiful and all this happens just as your populations are exploding. If you don't pay attention now, you can lose them. It has happened to me and it's happened to others, over and over again. **So go check your bees.**

Lots of early trees produce pollen with no nectar.
Image by atrix9 from Pixabay

***Note: Feed dry sugar, sugar cakes or fondant until the weather is consistently above 50 degrees. Bees cannot take up liquid sugar during cold weather.**

Honey Bee Suites website:
https://www.honeybeesuite.com/

LCBA March Beginning Bee Class

On March 4, 2023, we held our second and final beginning beekeeping class for 2023. We had 19 in attendance, and 14 in the February class. These 33 people were lucky to have Mike France, Matt Stouder, Lynn Hellwege and Brian McGinley share their expertise. Polly Habliston, Paula Sablosky and Pam Leavitt brought cookies to enjoy during the breaks and offered advice to students during the breaks. A huge thank you goes out to these club members who helped start these potential beekeepers on their journey.

Congratulations to Jill Weintritt and Robert Letts for being our lucky door prize winners.

March Beekeeping Tips
by Chuck Hunt, LCBA Member

1. March is the month to treat your bees if you haven't already. Be sure and check for mites. Count your mites and see if you need to do a treatment. Miticides can be put in the hive if the weather is relatively warm (about 55 degrees) and quickly apply them.

2. Bees will be increasing their buildup during this month. Make sure that adequate stores are in place. Don't count on any early spring honey flow since the bees often cannot fly due to poor weather. A hive should never have less than 15 pounds of honey or stores. This is about five western frames or three deep frames of solid honey.

3. You can feed your bees at this time since it is beginning to warm enough that they can handle nectar or syrup. A mixture of one part sugar to one part water fed to the bees at this time will stimulate increased brood rearing and help your hives survive the winter and build up in the months to come. Be careful of swarming when you stimulate your hives this way. Also, remember that feeding stimulating syrup will increase brood rearing and subsequent need for stores. Watch such hives carefully.

4. Entrance reducers can probably be removed at this time. You might want to clean the bottom board of any debris or dead bees and make sure that it is dry.

5. If weather permits, it is advisable to even up or balance your hives. This means that those hives that are overflowing with bees and brood should have some broad removed. These removed bees and brood should be given to hives that are weak to boast their strength. **MAKE SURE THAT YOU DO NOT TAKE THE QUEEN FROM THE STRONG HIVE ALONG WITH THE TRANSFERRED FRAMES.** Don't take more than 20 % of the bees and brood from the strong hive.

6. Also, if your hives are bursting at the seams, you can reverse your brood boxes. Usually, the lower box will be empty of brood. Take this empty box and place it on top of the second box.* The second box, with all its brood, bees and queen will become the bottom or first box as a result. The queen will then move up into the new, and now empty, second box.

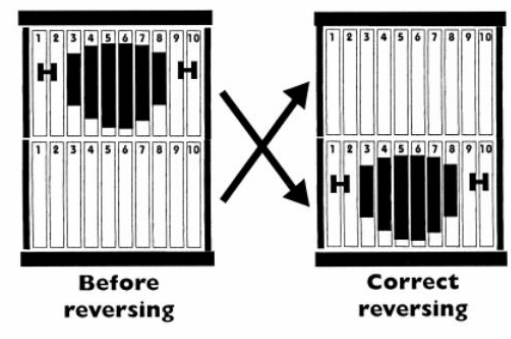
7. Watch out for swarm cells as the month progresses and moves into early April. Swarm cells look like peanuts that have not been shelled and are placed at the edges of the frames (usually). Various swarm control techniques can be used including splitting your hives. Splitting simply involves dividing the brood and boxes in the strong hive and starting a new hive. In the queenless half of these two hives, you may let the bees raise a new queen. Make sure that queenless half has eggs from which to raise this queen. This process will take about four weeks. You can also order a queen for the queenless half from a queen breeder.

8. If a hive is very weak, queenless and not worth saving, unite it with another hive that needs a boast. Place a newspaper between the two hives and let the bees chew the obstruction away. They will unite peacefully.

9. Think about re-queening any hives that are chronically weak or unproductive. A new and healthy queen will help the buildup and now is the time to order that queen. Look for disease resistance and hygienic queens.

10. Watch out for yellow jacket queens and use pheromone traps for them. Any queens you capture in the spring will greatly reduce the problems with yellow jackets in the late summer and fall.

11. March is the month that many think is the most critical month for beekeeping of the entire year. Do your job right in this month and you go a long way towards having a successful year of beekeeping.



*Do not split the brood. If your brood is between the two brood boxes, leave it. Judy talks about this in her presentation on Spring Management.

(Picture from Judy's presentatoin)

February General Meeting Highlights, *by Matt Stouder, LCBA Secretary*

Judy Scher

Late Winter & Early Spring Management, by Judy Scher

Late winter and early spring management can be divided up into three distinct periods – mid February to mid-March, mid-March to late March and late March to early April. During each of these times, it is important to know what the bees are doing, what the beekeeper should be doing, and what the blooms are doing.

Judy started off with a review of winter bees. As a reminder, winter bees do not hibernate, they cluster around the queen and keep the cluster warm by vibrating their wing muscles to produce heat. The cluster centers in a large ball around the queen when temperatures dip below 45 degrees (F). The cluster needs honey stores close to or touching them for their winter food source. Winter bees are "fat" bees that have stored nutrients in their fat bodies. This helps to keep them alive for six months or more to raise brood in spring.

Feb 14 - Mid March

During this time, the bees are in cluster. When the weather warms above 50 degrees, they make take cleansing flights. The queen begins to increase egg laying, and the colony population slowly increases. The bees are consuming honey and pollen when they cannot fly due to weather. During good weather, they will be bringing in pollen. Starvation is early spring enemy number one. If bees are on the top bars, it means they are out of nearby honey and emergency feeding is needed. It is critical that the beekeeper check for stores of honey and provide emergency feed if needed. Bees may also migrate to the edge of the hive. This is an emergency because they will run out of honey. Provide emergency feed above the cluster and re-center the colony when the weather warms to above 50 degrees. An easy sugar patty recipe is pure cane sugar mixed with a little water to the consistency of wet sand. These patties can be hardened overnight and placed directly on the top bars.

Varroa mite counts can be interpreted from a collection board placed under the screened bottom board. A collection board also allows the beekeeper to observe the cluster strength and area, observe varroa drop and see evidence of wax moths and mice. Mite counts should be below five per day on the collection board. Apivar or Formic Acid (temperature dependent) can be used if necessary. Consult the Honeybee Health Coalition's *Tools for Varroa Management* guide for more information. An entrance reducer should be used to keep mice out of the colony. Continue to use top insulation to keep the colony warm and dry.

Pollen sources include red head nettle, cherries, and dandelions. Nectar sources include rosemary, pussy willow, and red sunset maple. Judy recommends keeping a bloom log, which will help the beekeeper correlate blooms with what the bees are doing and is especially useful when kept year after year.

Mid March - Late March

The colony is continuing to build up population by bringing in nectar and pollen. You may start seeing drone brood in the hive and drones may begin to fly. When the weather is over 55 degrees, the beekeeper may initiate the first full inspection of the year. This is also a good time to troubleshoot why any dead outs occurred.

If your hive survived, check for the presence of a queen. The brood pattern should be tight. Evaluate hive strength; ideally you will have at least five frames of bees. You will also want to evaluate honey and pollen stores and look for signs of chalkbrood. Chalkbrood is caused by a fungal pathogen. Weak hives in damp areas are prone to chalk brood. Chalk brood can also arise when nurse bee numbers are low, and brood is neglected. Relocating your hive to a sunny area and/or requeening may help.

The beekeeper should clean up or swap out the bottom board for a new one during the first inspection. This is also the time to reverse brood boxes (exception: don't do this if brood clustered is in-between boxes). You can also stimulate weak colonies with a protein patty.

It is important to continue to monitor for varroa. If needed, Apivar, Formic Acid, and Apiguard may be used, but you will need to check temperature requirements. Sampling for varroa with either an alcohol wash or a sugar shake is preferred. If the weather is good, you may remove the top insulation box. It is likely that you will begin to see drone brood in the hive during routine inspections.

continued on page 8

highlights continued If the weather is good, you may remove the top insulation box. It is likely that you will begin to see drone brood in the hive during routine inspections.

Big leaf maple blooms during this time of year and is an important minor nectar flow in Lane County. It is important that you do not harvest any of this honey; there will be a nectar dearth in May and the bees need this important resource to survive the dearth.

Late March-Mid April

The colony will substantially increase drone production, and you will begin to see drones flying. Queen cups will start to show up in your hives. The beekeeper can begin to equalize hives by moving frames from strong hives into weaker hives. It is important to make sure moved frames contain lots of bees and brood of all ages, but not the queen! Hives can also be combined with newspaper if needed. Place a newspaper barrier between the combined colonies to ease the merger.

It is very important that you do not let the bees starve during this time period. The beekeeper should heft the hives and feed 1:1 sugar syrup if necessary. Bees consume capped honey even during nectar flow during constant rain and can easily run out of resources. Continue to monitor for Varroa mites and replace frames that are very dark or more than four years old. This is also the time of year to begin trapping yellow jacket queens. For every yellow jacket queen captured, a nest with hundreds of workers will be eliminated. You can install your yellow jacket traps when the temperatures are greater than 60 degrees.

Swarm control preparation will need to begin. Watch the hive for brood expansion and super when seven out of ten frames have bees on the top bars. Consider reversing brood boxes and making splits. Watch for backfilling of the brood nest, which is a precursor to swarming. If queen cells appear and are filled with royal jelly or are capped, swarming is imminent.

Queen cells

Thanks Judy for presenting to our group!

Judy's slide show is posted on our website under the "Talks tab, Early Spring Management (lcbaor.org).

Presentation is posted on YouTube. Contact Nancy for the link. nancy.ograin @gmail.com

February Early Session: Installing Package Bees & Nucs, Jonathan Loftin

Jonathan Loftin

LCBA's early meeting was presented by Jonathan Loftin, a long time member and beekeeper. He talked about the differences between package bees and nucs and how to install and feed them. He showed the Ed Weiss video on installing package bees.

Package Installation: When a package first arrives the bees may be agitated, spray them with a light sugar syrup. There is no need to smoke them. To install package remove feeder can and queen cage. Cover box opening with cardboard, wood or tile. Make sure queen is alive! With the queen cage in hand, remove the cork and install a marshmallow or gummy bear.

Remove four or fives frames from the center of the brood box. Place queen cage in the center of the hive with the screen facing out and the candy plug up. Pour a small number of bees from box over queen cage. Place the rest of bees where frames have been removed. Gently replace frames without harming the bees and then install inner cover and feeder. Place the package in front of the hive to allow the remaining bees to enter the hive. Use an entrance reducer to narrow the entrance to the hive as there are no guard bees yet. Leave the bees alone for seven to ten days. By that time, the queen cage should be empty. The queen's pheromones have spread throughout the hive and she has been accepted. If the queen is still in the cage, remove candy plug and leave them alone for another two weeks. Be sure to feed them for the next few weeks with sugar syrup, one part sugar to 1 part water. Keep feeding until they do not take it up any longer.

Nuc Installation: Nucs are small beehives. The queen is accepted and is making brood. After receiving the nuc box, place on hive stand and remove the plug. The next day if weather permits, (65 degrees is the optimum temperature), set nuc aside and place new brood box on stand, lightly smoke, install brood frames in the exact order as nuc plus foundation on the outside of the nuc frames. Look for brood, eggs and brood pattern. Install feeder, inner cover and lid. Place nuc box with the stragglers in front of the hive with lid off. Leave them for two weeks. You will need to feed your bees.

Some of the things you need to look for in the first two weeks; undertaker bees removing dead bees, guard bees at entrance, orientation flights, forager bees bringing in pollen, bees fanning to cool the hive and scenting with their nasonov gland. After two weeks, check for brood or eggs. Always have a purpose when checking the hive and try to be in and out in 15 minutes.

Thanks Jonathan!

Jonathan's presentation is posted on YouTube. Contact Nancy for link. nancy.ograin@gmail.com
LCBA's website "Talks" tab, has vidoes on installing package bees/nucs and ino on feeding. www.lcbaor.org

Installing a package

Mason Bees

by Polly Habliston

Mason bees are amazing pollinators and so much easier to raise than honeybees. One mason bee can pollinate as much as 75-200 honeybees and are your best bet for pollinating early flowering plants. Mason bees work in cool or rainy weather when honeybees are more likely to take the day off. It's beneficial to have both honey bees and mason bees in your yard. Mason bees are usually black or metallic blue-green**,** though sometimes very brightly colored**.** They can range in size, but are typically about half the size of a honey bee and they don't sting, so they're an uncomplicated beneficial insect to invite into the garden.

Caring for Mason Bees:

March is one of three important months in the year for mason bees – and it's here! This is the month to put out your cocoons. Watch the 7-10-day weather forecast. Look for temperatures of 50-55° for 3+ days in a row, with no heavy rain in the forecast. Put out 1/3 or 1/2 of your cocoons in late March and the rest one to two weeks later. All cocoons should be out by the first week of April.

Your mason bee house can be any wood house, roughly 4" X 4" X 7 ½" long. It can also be a large PVC pipe that can hold the dispensing tubes and straws. The optimal location to hang your mason bee house is 6 to 7 feet off the ground, preferably under an eave of your house, garage, shed or some other shelter or provide a cover to keep them dry. The houses should face south or southeast to receive the morning sun. It should be placed away from bird feeders, because bees make tasty morsels. Have a water/mud supply nearby, because the bees need mud to enclose their cocoons.

The next important calendar dates to watch for are June and October. In June, you want to bring in the tubes and put them inside a cardboard box so the bees can complete their development. Your want to store them in a warm, but not hot, location. A garage usually works.

In October, you remove the cocoons from the straws and rub them gently to remove any debris. Then wash quickly in a solution of one teaspoon bleach per gallon of water for two 2 minutes maximum! Allow the cocoons to dry, do not use a hair dryer!) To store your cocoons, get a container, put dry paper towels on the bottom and put holes in the lid. Then put the cocoons in the container on top of the paper towels. Leave enough room for a second smaller container to go on top of the cocoons that holds a damp paper towel. This damp towel keeps the cocoons moist. Then place the lid with the holes in it on top. Put the container in the "vegetable bin" of your refrigerator, 38° - 39° and 60-70% humidity. Check the paper towel occasionally, October through March, to make sure it is damp so the cocoons do not dry out, until next season.

When you purchase cocoons they should be kept in a container similar to that described above in your refrigerator until it is time to be placed outside in the tubes. The tube goes into your little "house" - then you just have to sit back and watch the activity!

You will need to have on hand:

- **A container to keep them in until weather is appropriate to put them out.**
- **A house to put your tubes** in.

You can purchase straws and inserts to fill your house on-line at Amazon or locally you can get nesting tubes at Wilco, but not the inserts.

It is a good idea to slit the straws with a razor blade letter opener before putting them into the cardboard tubes as it makes it easier to remove the cocoons in October.

***Want to learn more about mason bees?** Visit this website. They have an extensive library on the different species of mason bees and how to take care of them. They also rent out mason bee blocks: https://rentmasonbees.com/
This video shows their operation and how they prepare and clean the cocoons for rental. It was amazing to watch!
https://youtu.be/wzDWeADhOno *Nancy Ograin*

"How Are Your Colonies Wintering?

by Dewey M. Caron

Coming up mid-March is the Pacific NW Honeybee Survey. The members of LCBA have been especially supportive of this annual survey of Oregon and Washington backyarder beekeepers (50 colonies or fewer). This is our 14th year. In cooperation with Ramesh Saglili, I also do a commercial beekeeper survey (50+ colonies) to accompany the Pacific NW survey. At the same time there is a national survey by BeeInformed Partnership (BIP). The Pacific NW survey is now open and runs through the end of April and the BIP survey opens in April.

The BIP national, and my regional loss/management survey, document the annual loss of bees overwinter. They also look at managements that may improve survival. The surveys document that losses fluctuate from one season to the next. Over the winter we see it is not the coldest temperatures our bees face, but fluctuating weather that is the hardest on bees.

For Oregon backyarders, the overall trend is essentially flat over the past 13 years at just under 40% winter losses. It has increased slightly the past 13 years for commercially managed colonies to 22%. LCBA losses mirror those of the Oregon state backyarders, although the trend is slightly upward. The losses this past winter were the lowest on record for LCBA (see chart in the latest LCBA report at: https://pnwhoneybeesurvey.com/. Click on survey reports under individual club reports 2021-22.)

It is still too early to be able to determine how Oregon colonies have fared during this winter, although early reports seem promising so far, but we have heard reports of some commercials having extensive losses. Winter survival models, using the extensive multiple years of loss data, correlate losses with colony mite managements and environmental factors. An earlier study from Penn State found overwintering success influenced by higher colony weight in the fall. The origin of the stock was not important, at least for central Pennsylvania, for the four queen sources included in the study. Higher temperature and precipitation during the warmest quarter of the season was positively correlated with improved wintering success, presumably as it affects bee forage.

Recently, a detailed look at the loss data gathered by the Bee Informed National Survey, linked increased winter colony loss with winter weather. Specifically, November means maximum temperature and mean February precipitation predict success.
Overwintering honey bees: biology and management - PubMed (nih.gov)

The take home message is we can help improve wintering success by proper colony care and low mite levels prior to November (especially for years when November is cold such as this past winter). Precipitation, when lower in February, also presumably lowers wintering success. With the moisture levels higher this past month we might predict another year with improved wintering success.

The Oregon Pacific NW Survey for 2022-2023 winter season is now open for your participation. It extends mid-March through April. After you have had a chance to open your colonies and assess your winter success please take the time to enter your data in the survey. It should take less than 5 minutes. Reports by clubs with 20+ member responses are posted within a month following the close of the survey, April 30th.

Thanks to all LCBA members for efforts in entering your data and "beeing" among those counted. Can I count on your continued participation this year?

Click on link below to take the survey.
https://pnwhoneybeesurvey.com/

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Bumblebees Learn to Solve Puzzles by Watching Peers

By Emily McGarvey, BBC News, March 2023

Bumblebees learn to solve puzzles by watching their more experienced peers, scientists in Britain have found.

Experts from Queen Mary University of London trained a set of bees to open a puzzle box containing a sugar reward. These bees then passed on the knowledge to others in their colonies, the study found. The researchers discovered that "social learning" may have had a greater influence on the behavior of bumblebees than previously imagined.

To carry out the study, the scientists created a puzzle box that could be opened by rotating a lid to access a sugar solution. The lid could be rotated clockwise by pushing a red tab, while pushing a blue tab could rotate it anti-clockwise. The scientists trained "demonstrator" bees to use one of these methods to open the lid while the "observer" bees watched.

When the observer bees tackled the puzzle, researchers found they chose the same method they had seen 98% of the time, even after discovering the alternative approach.

The study also found that bees with a demonstrator opened more puzzle boxes than control bees.

This suggests the bees learned the behavior socially rather than discovering the solution themselves, the researchers said.

Dr. Alice Bridges, who led **the study**, said bumblebees were not known to show "culture-like phenomena" in the wild. "However, in our experiments, we saw the spread and maintenance of a behavioral 'trend' in groups of bumblebees - similar to what has been seen in primates and birds," she said.

She said the behavior of social insects like these bumblebees were "some of the most intricate on the planet".

In other experiments where both "blue" and "red" demonstrator bees were released into the same groups of bees, the observer bees initially learned to use both methods, but eventually they developed a preference for one solution, which then dominated in that colony.

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USDA United States Department of Agriculture Agricultural Research Service

ARS News Service

DNA Research Finds Low Genetic Diversity Among U.S. Honey Bees

93.79 percent of U.S. honey bees belonged to the North Mediterranean C lineage

February 15, 2023

U.S. agriculture owes many thanks to the honey bee (*Apis mellifera L.*), as it plays the crucial role of pollinator within the nation's food supply. Some of the nation's food industries rely solely on the honey bee, and it's estimated that the economic value of its pollination role is worth well over $17 billion each year. With this fact in mind, ARS researchers recently studied the U.S. honey bee's genetic diversity to ensure that this crucial pollinator insect has sufficient diversity to overcome the growing number of stressors such as parasites, diseases, malnutrition, and climate change.

What they found is alarming: the U.S. honey bee population has low genetic diversity, and this could have a negative impact on future crop pollination and beekeeping sustainability in the country.

The research, recently highlighted in Frontiers, was accomplished by analyzing the genetic diversity of the U.S. honey bee populations through a molecular approach, using two mitochondrial DNA (mtDNA) markers (DNA specifically from a mother). Researchers studied approximately 1,063 bees from hobbyist, and commercial beekeepers in 45 U.S. states, the District of Columbia (D.C.), and two US territories (Guam and Puerto Rico). The data showed that the nation's managed honey bee populations rely intensively on a single honey bee evolutionary lineage. In fact, 94 percent of U.S. honey bees belonged to the North Mediterranean C lineage. Data reflected that the remainder of genetic diversity belongs to the West Mediterranean M lineage (3%) and the African A lineage (3%).

"It's important that we have a realistic and accurate estimation of the honey bee's genetic diversity because this indicates the insect's ability to respond to disease, adaptation to environment, and productivity," said ARS Research Entomologist Mohamed Alburaki. "Without this pollinator insect, we will witness a drastic decrease in the quantity and quality of our agricultural products such as almonds, apples, melons, cranberries, pumpkins, broccoli and many other fruits and vegetables that we're used to purchasing. We can't wait until a domino effect slowly takes place and affects our food supply."

The lack of genetic diversity creates a vulnerability for U.S. honey bees to survive in shifting climates that are now wetter or drier than usual. There is also concern that a honey bee's inability to fight off disease or parasitic infection could negatively impact beekeeping sustainability. The challenge of U.S. honey bees' weakened immunity has become an economic burden to bee producers and beekeepers. In the past, U.S. beekeepers suffered less honey bee colony losses and treated against varroa mite (a ferocious honey bee parasite) once per year. In 2023, colony losses and winter mortality are at a high peak and varroa mite requires multiple treatments per year to keep it under control.

"As a honey bee researcher, what worries me the most is that 77 percent of our honey bee populations are represented by only two haplotypes, or maternal DNA, while over hundreds of haplotypes exist in the native range of this species in the Old World, or the honey bees' native land of evolution," Alburaki said. "Many of these haplotypes have evolved over millions of years in their native lands, and have developed astonishing adaptation traits that we should consider incorporating in our US honey bee stocks before it is too late."

These complex factors are driving Alburaki and his ARS research team to develop a solution that's sustainable for the entire nation. The research team is currently evaluating the paternal diversity of the previously analyzed populations to acquire a full and accurate picture of the overall genetic diversity of the U.S. honeybee populations. Researchers are also interested in the possibility of diversifying breeding stations with honey bee queens from various genetic backgrounds.

Alburaki's research also identified and named 14 novel haplotypes in the three evolutionary lineages. These haplotypes have never been reported before and can provide new insights into the U.S. honey bee's evolution since its importation to North America in the 1600s. There is hope that the researchers can use this information to locate and enhance the numbers of these rare and novel US haplotypes, which could speed the process of reaching a healthier diversity within the nation's honey bee population.

The Agricultural Research Service is the U.S. Department of Agriculture's chief scientific in-house research agency.

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