CENTRAL COAST BEEKEEPERS NEWSLETTER

July 2022

Issue number 72

NEXT MEETING July 27, 2022

This Month: Meeting Location and Time

We will be meeting this month at OSU Lincoln County Extension Office on **Wednesday July 27th at 6:00PM. The LC Extension Office is at 1211 SE Bay Blvd., Newport, OR 97365**, on the Newport Bay front, just beyond the Embarcadero on the opposite side of the street.

This month's meeting will focus on honey extraction and all the things you need to do to make sure you'll have lots of honey to extract! (Due to logistical challenges last month, we were unable to cover this topic as planned.)

There is plenty of parking at the Extension Office, including beside the building, across the street, and in the liquid gas parking lot (the business will be closed when we are meeting, but do not block their loading dock). See you then!

PRESIDENT'S MESSAGE

By Pat Wackford

Our major event this month was our booth at the Lincoln County Fair. I would like to thank all of our volunteers who staffed the booth. Special thanks to Rick Olson and Max Kuhn for bringing their bees in observation hives. Everyone who stopped at the booth were fascinated watching the bees work and finding the queen. About 20 people signed up to receive more information about the club and will receive a copy of our Newsletter.

This spring/summer has been very interesting for my bees. This last week I removed a super of honey from my strongest hive and replaced it with an empty super of drawn comb. Upon checking back several days later the bees had cleaned up the comb and were filling the frames with nectar. There are still a lot of blackberries blooming out there and I'm hoping for a few more full capped frames.

This month's meeting will be at the OSU Extension Office on July 27th at 6:00 PM. I am assured we will be able to easily access the meeting room. See you there.

Editor's note

We are trying to determine if the new time and location is good for our membership attendance. If you could please provide your feedback by responding to the club's email (the one that sent this newsletter) we would greatly appreciate it. Our options include going back to the library at an earlier time in the day or keeping the current location and time. Thank you.

Also, if any member would like to borrow the Club's manual honey extracting equipment, please me know, again by using the club's email. centralcoastbeekeepers@gmail.com

Winter Bee Losses of Oregon Backyard Beekeepers for 2020-2021

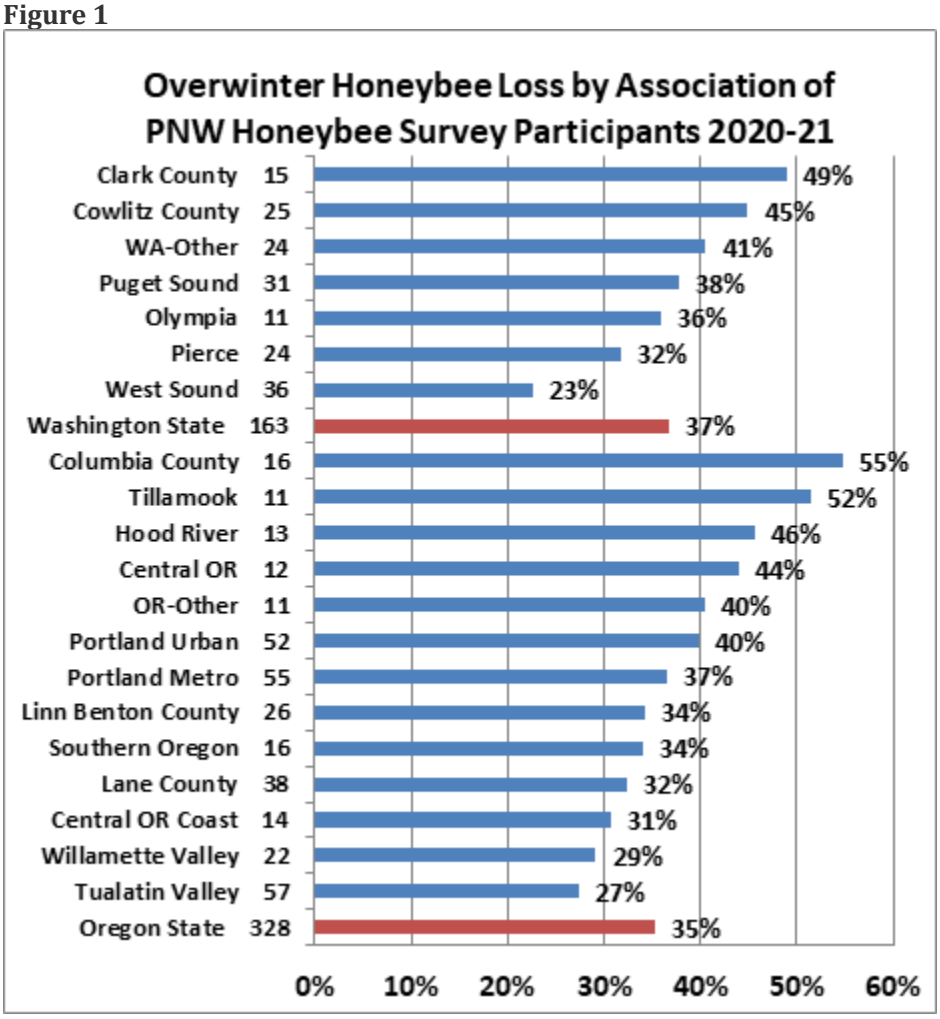
by Dewey M. Caron

Overwintering losses of small-scale Oregon backyard beekeepers decreased to 35% this winter after the disastrous level of 48% colony losses two years ago and 38% last winter. This report presents the results of our 12th season of Oregon hobbyist/backyard beekeeper surveys. This annual survey is conducted at www.pnwhoneybeesurvey.com. Herein we discuss the data provided by 328 Oregon beekeepers, which is 26 more respondents than last year. Results of the 163 Washington respondents completing surveys (30 more than last year) are included in a separate loss report.

2020/2021 State/Club Losses

Club results of 12 local Oregon associations and 6 Washington associations (+ "other" category) are shown in Figure 1. Colony numbers ranged from 1 to 40 colonies in Oregon (Average 4.77 colonies, medium number = 3 colonies) and 1 to 39 in Washington (Average 5.16 colonies, Median number = 3). The number of respondent individuals is listed next to the association name. The bar length is the average club loss percentage for the year.

Figure 1

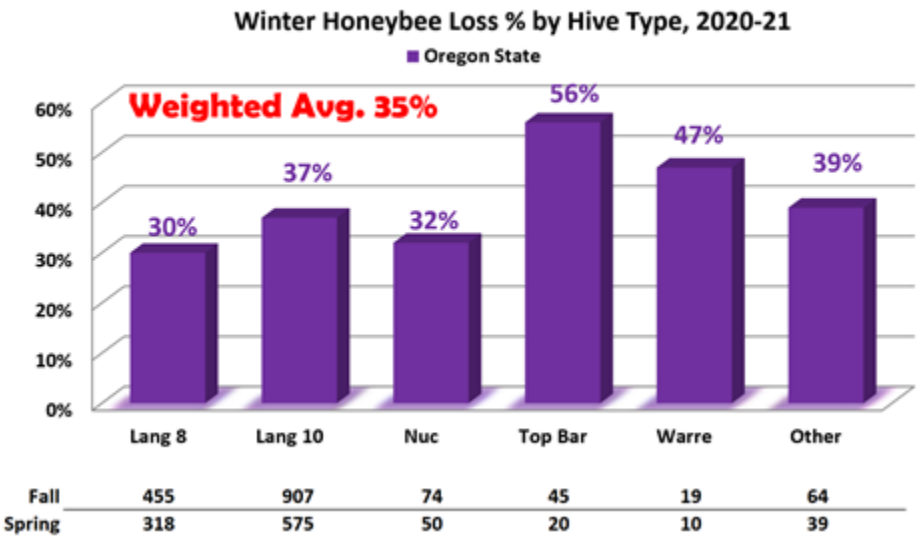


Overwinter losses of members of different organizations varied from a low of 27% for the Tualatin Valley beekeeper respondents to a high of 55% for Columbia Association. The 2X range of losses, was less than last year (4X difference) or the year before (3X difference). The difference between the two states – 2 percentage point higher loss rate in Washington – is the closest it has been in several survey years (last year Oregon loss rate was 38% and Washington loss rate was 50%). The 11 "OR-other" includes beekeepers In Coos Co, South coastal range, Douglas Co, + 6 in Klamath Falls area. The 24 "WA-other" includes beekeepers mostly west of the Cascade Range. The Puget sound east are beekeepers mostly in the Seattle area. Three quarters of our Pacific Northwest Honeybee Survey respondents keep bees along the I-5 corridor between Eugene and Seattle.

2020-2021 Overwinter Losses by Hive Type

The loss statistic was developed by asking number of fall colonies and surviving number in the spring by hive type. Respondents had 1,564 fall colonies (211 more than last year) of which 1012 colonies survived to spring equating to a 35% loss (or 65% survival), an improvement of 3% points over the previous winter (38%) loss rate. Eighty-seven percent of hives were 8-frame and 10-frame Langstroth hives which had a survival rate of 65%. There were 74 fall nucs (68% survival rate). Among non-traditional hive types were 45 top bar hives (44% survived) and19 Warré hives (51% survived). Among other hive types, 48 were horizontal hives (moveable comb) and up to 16 (not all other hive types were Identified) that included tree stump and other non-traditional hive types. Thus, at most, 80 (5%) of hives were non-traditional Langstroth hives.

Figure 2

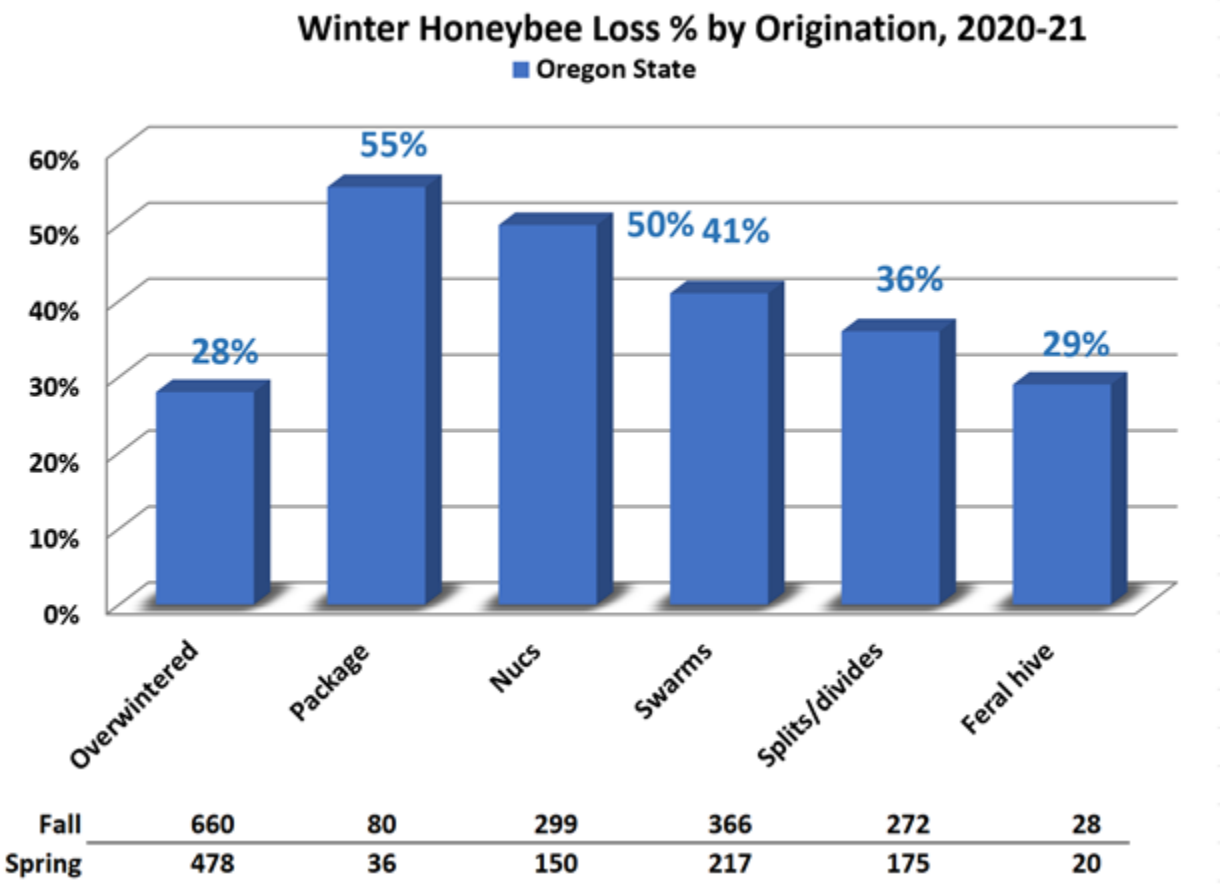


The 30% winter losses of PNW 8-frame Langstroth hives was slightly less compared to the 37% loss rate of 10-frame Langstroth hives. The loss rates of Langstroth 8 and 10 frame hives over the past 7 years has averaged 37% for 8 frame Langstroth hives and 40% loss for 10 frame hives respectively. Nuc losses are typically higher than losses of 8 or 10 frame Langstroth hives but this year came in at 32% loss. The Nuc 6-year average loss is of 50%. This year's Top Bar hive loss (56%) is only 2 % points over the 6-year average loss of 54%. The 2021 Warré hive loss rate of 47% is a higher loss than the 6-year average of 40%. Although many beekeepers come and go, it is interesting that each survey year Top Bar and Warré hives numbers remain steady at slightly over 5% of total hives.

2020-2021 Loses Based on Hive Origination

We also asked survey respondents to characterize their loss by hive origination. The result is graphically presented below in Figure 3. Overwintered colonies obviously had the best survival (28%) with the 29 feral transfers also excellent. Splits, swarms and nucs were higher with package bee survivals exhibiting double the losses of the overwintered colonies.

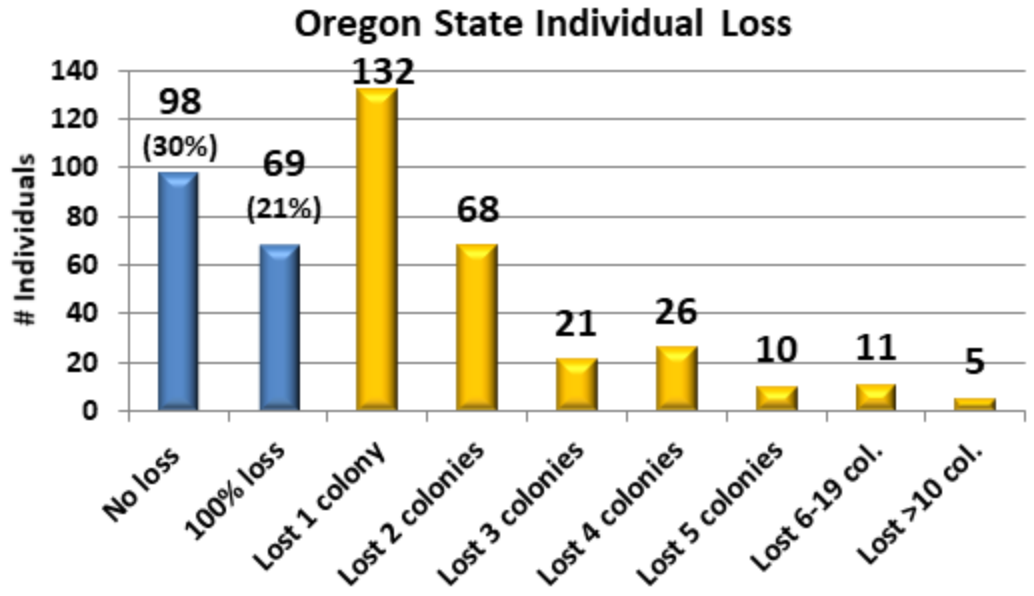
Figure 3



2020/2021 Individual Hive Losses

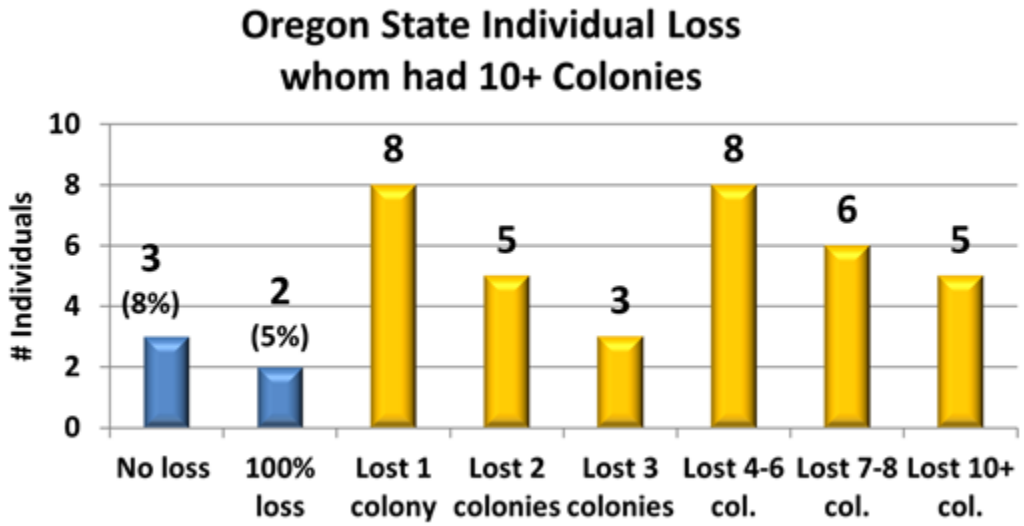
Thirty percent 98 individuals) of Oregon respondents had NO LOSS overwinter, whereas 21% (69 individuals) lost 100% of fall colonies. Figure 4 below shows loss of 1, 2, 3, 4 and 5 colonies; the loss of 1 single colony (by 132 individuals) represents 57% of total individuals reporting loss. Nineteen individuals lost 6 or more colonies. Highest loss by a single beekeeper was 17 colonies. Loss numbers are reflective of the fact that backyarders keep on average 3 colonies. Those individuals losing 1, 2 or 3 colonies lost 53% of total colony loss statewide this past winter.

Figure 4



Graph 5 looks at losses of individuals who had 10 to 40 colonies. This group lost 175 total colonies which is 28% of total losses. Thus, individuals with 10 to 40 colonies (Average colony number=15) lost 4.7 colonies per individual and a smaller percentage of colonies (28%) than the overall group (35%). Individuals with 1 to 9 colonies lost 1.6 colonies on average.

Figure 5

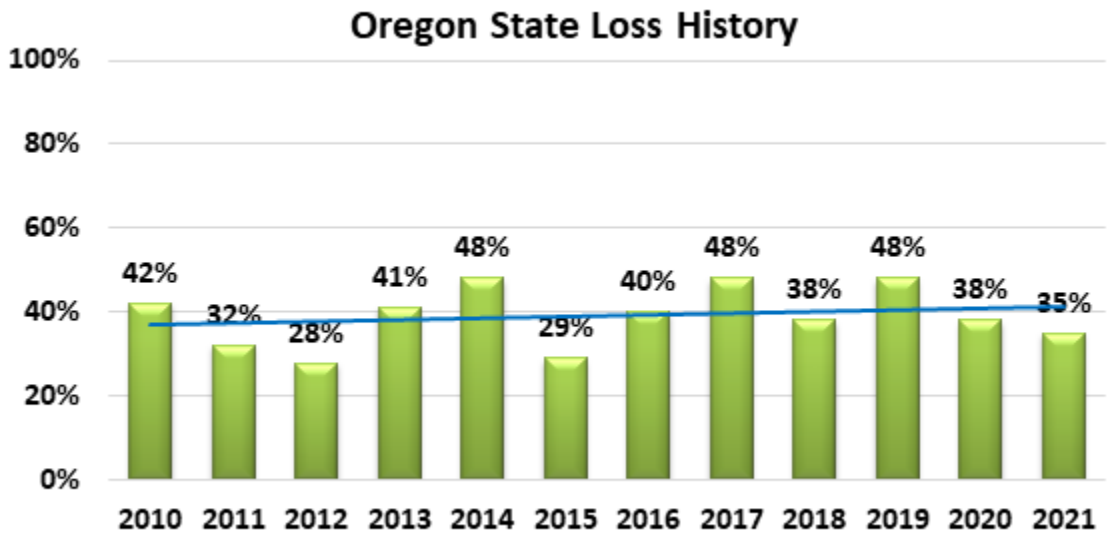


Overwinter Losses the Past 12 Seasons

The losses of the past 12 years are graphed below in Figure 6. Despite the lower losses the past 2 seasons the average loss by Oregon beekeepers is 40%. This average loss has changed little in the past 12 years although season with heavier loses have occurred. Comparing the annual losses of backyarders with commercials is shown in Figure 7. The commercial losses are obtained from a

different paper survey distributed by Oregon State University. Four Oregon commercial and six semi-commercial beekeepers (26,175 colonies, approximately 30% of the estimated total number of colonies in the state) reported overwinter losses of 24%. Interestingly this year losses of the six semi-commercial (sideliner) beekeepers (average colony number 164) were 21% and losses of the commercial beekeepers (average colony number 6298) were slightly higher, 24%. The normal progression is commercial loses lowest followed by sideliner then small-scale beekeepers with 10+ colonies (this year 28% figure 5) and finally the backyard beekeepers with heaviest losses. Small scale (backyard) beekeeper losses have ranged from six to 20 percentage points greater compared to losses of commercial/semi-commercial beekeepers over the last 12 years as shown in Figure 7. Twelve-year average Backyard=40% loss and 12-year commercial/semi-commercial loss = 21%. The dashed lines are loss trend.

Figure 6



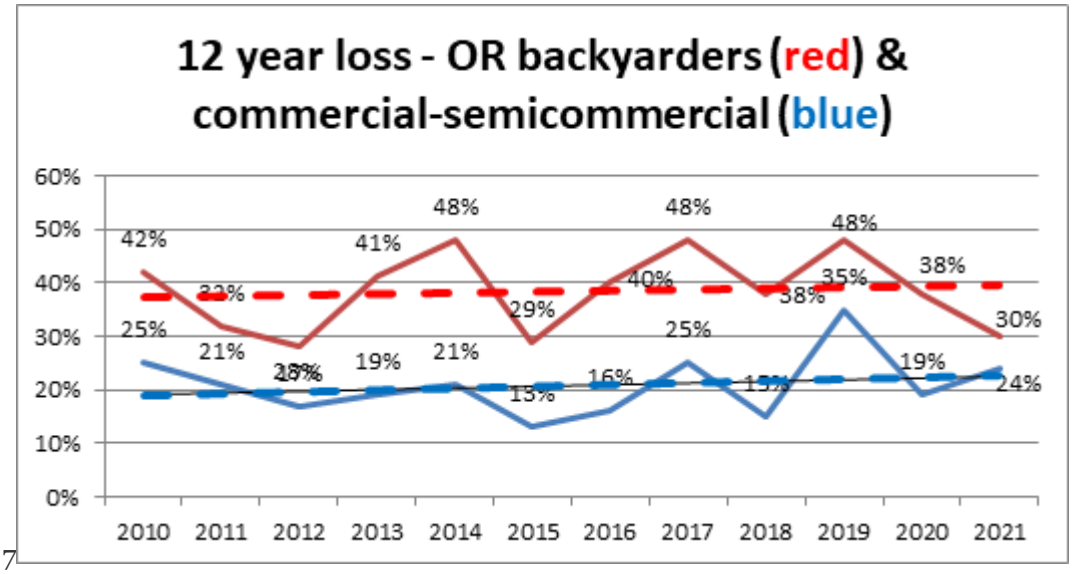
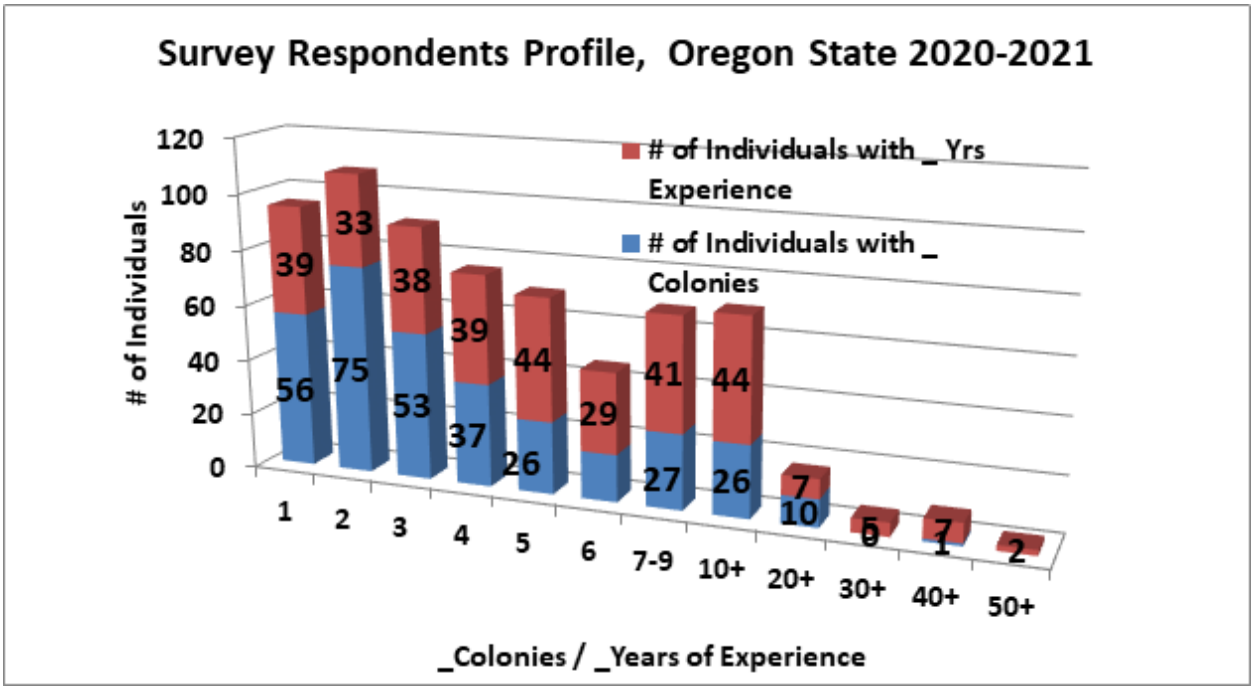


Figure 7

Who are Survey Respondents?
To better characterize the survey population, we tallied individual number of fall colonies for the 328 respondents. As indicated in the blue bar of Figure 8. Fifty-six individuals had 1 colony, 75 had 2 colonies (the most common colony number), 62 individuals had 3 colonies (the middle number), etc. 37 individuals (11% of individuals) had 10+ colonies. Highest colony number was 40.

We also asked how many years of beekeeping experience survey respondents had as indicated by the red bars of Figure 8. Thirty-nine had 1 year, 33 had 2 years, 38 had three years which was just over 1/3rd of total respondents. The greatest number was 5 years (44 years' experience, which was also the middle number years of beekeeping experience). On other end of spectrum, 63 individuals (19%) had 10+ years' experience. 62 years' experience was the highest.
Figure 8



Nearly three quarters of Oregon beekeeper respondents (71%) indicated they had a mentor available for the first years of beekeeping. This is about same as in previous years. This is encouraging as the learning curve is a steep one for new beekeepers and mentors can significantly help new individuals get through the critical early years of keeping bees.

Perceived Colony Death Reason and Acceptable Level
We asked individuals that had colony loss (98 individuals had no loss) to estimate what the reason might have been for their loss (multiple responses were permitted). There were 445 total listings, 1.86/individual. Varroa (111 selected -46% of respondent choices), followed by Weak in the fall (82 chose 34%), Queen Failure (69 selected 29%), starvation and poor wintering (both 31 choices 13%) were most commonly checked. 40 individuals chose Don't know (17%). Among other, 17 individuals listed yellow jackets, 12 fire/smoke, 11 pesticides, 9 moisture and 7 CCD. Other reasons written in under other included beekeeping error, small hive beetle, ants, mice, swarming, absconding and late colony hiving.

	Varroa mites	Queen failure	Weak in fall	Star-vation	Yellow jackets	Pest-icides
Loss (#)	111		82			
reason (%)	(46%)	69 (29%)	(34%)	31 (13%)	17 (7%)	11 (5%)

Acceptable loss: Survey respondents were asked reason for loss. Fifty (16%) indicated zero (no loss). Forty one percent of individuals indicated 15% or less. 20% was medium choice. Thirteen percent said 50% of greater was an acceptable loss level. See table below.

DK	Zero	5%loss	10%loss	15%loss	**20%loss**	25%loss	33%loss	50%loss	75%loss
8	50	20	39	21	**59**	48	36	39	1

Why colonies die?

There is no easy way to verify reason(s) for colony loss. Colonies in the same apiary may die for different reasons. Examination of dead colonies is at best confusing and, although some options may be ruled out, we are often left with two or more possible reasons for losses. A dead colony necropsy can be of use. Opinions vary as to what might be an acceptable loss level. We are dealing with living animals which are constantly exposed to many different challenges, both in the natural environment and the beekeeper's apiary. Individual choices varied from zero to 100%, with medium of 20%.

Major factors in colony loss are thought to be mites and their enhancement of viruses especially DWV (deformed wing virus), VDV (Varroa destructor Virus (also termed DWV B) and chronic paralysis virus. Declining nutritional adequacy/forage and diseases, especially at certain apiary sites, are additional factors resulting in poor bee health. Yellow jacket predation is a constant danger to weaker fall colonies. Management, especially learning proper bee care in the first years of beekeeping, remains a factor in losses. What effects our changing environment such as global warming, contrails, electromagnetic forces, including human disruption of them, human alteration to the bee's natural environment and other factors play in colony losses are not at all clear.

There is no simple answer to explain the levels of current losses nor is it possible to demonstrate that they are necessarily excessive for all the issues our honey bees face in our and their environment. More attention to colony strength and possibility of mitigating winter starvation will help reduce some of the losses. Effectively controlling varroa mites will help reduce losses.

Will Bees Come to an Empty Hive?

From Beekeeping-101.com

It is quite common for new beekeepers to wonder if bees will come to an empty hive. After all, if you can attract a swarm of bees to a hive, you will not need to buy bees to get started. **Yes, with a bit of time and effort you can lure bees to an empty hive. For example, adding wax frames can act as a "bait" of sorts, while a smaller hive opening is preferable as it's easier for new bees to protect.**

How to Make an Empty Beehive Attractive to Bees

Swarming tends to occur predominantly in the springtime, but it can continue through summer and even into the fall in some places. Expect to find a higher occurrence of swarming when the weather is warm and there is a strong nectar flow.

It is worth noting that bees are unlikely to be attracted to an empty beehive that has just been bought new. You are going to need to put in some work to make it a place any swarm of bees will want to make their new home.

The first thing to consider is where you are going to place the beehive. It is important that it is not placed in direct sunlight; a shaded area is much better. If you have other working beehives, place the empty beehive away from these (but you should already know this). The reason is that your worker bees might decide to explore the empty hive without occupying it, therefore reducing the chance of a swarm migrating to the new hive.

There are things you can do to make a beehive more attractive to a swarm. For example, a larger hive is preferable while adding wax frames means a swarm might be tricked into thinking that bees have already lived in the hive. Ensure that the opening to the hive is small; bees prefer this due to the fact that they have a smaller area to defend against attackers.

How to Know if Bees are Eyeing Up Your Hive

Before a swarm occupies a new home, scout bees will check it out first. Scout bees can spend quite some time poking around a new hive. If it appears attractive, more scouts will visit over a period of days. In the beginning, it is common to see one or two bees hovering around the hive before being joined by more and more of these scout bees with each passing day. When enough scout bees have investigated the potential home and it is deemed acceptable, the entire swarm will arrive.

It is important to have patience when trying to entice a swarm to your hive. Once you have spotted the scout bees, remember that it can take a couple of weeks before the full colony arrives. Try not to disturb anything and, in particular, refrain from moving the hive as this could prevent the swarm from settling.

What to Do if a Swarm Arrives

If you do manage to attract a swarm of bees to your hive, you should leave it where it is for a few weeks to allow the bees to get settled. Once they have arrived, they will start building comb immediately and the queen will begin laying. If you disturb them during this time by trying to move the hive, you could cause them to jump ship and look for a new home.

It is also a good idea to wait at least a week before you inspect the hive as, by that time, the eggs will have hatched. This means the bees will be less likely to want to leave, even if disturbed.

Once you have established that the swarm has been building comb and that the queen has begun laying eggs, you will be able to move the hive. However, do this carefully. I recommend only moving it a short distance each day while ensuring that it is only moved in the evening time when the bees are less likely to leave the hive.

To ensure that the bees have sufficient quantities of food during a move, offer sugar syrup as this will provide them with the energy and nutrition they require until they get used to their new surroundings and find food for themselves.

Editor's Note: This happened to me this spring. I had a colony die and I had left the hive boxes in place. Towards the end of June, a new colony had moved in!

Excerpt from Oregon State Beekeepers July 2022 Newsletter

OSU Honey Bee Research and Extension Program Updates - Ramesh Sagili

Hope you all are doing well, staying safe and still waiting for more sun. I wanted to take this opportunity to provide a quick update on (a) some field observations this spring and (b) an overview of our current and upcoming research projects. Observations from the Field Brood diseases: European foulbrood (EFB) and Chalkbrood are relatively common brood diseases that are prevalent during spring. We have noticed an uptick in prevalence of EFB and Chalkbrood this year. For many new beekeepers, it is a bit challenging to differentiate between brood diseases. Beekeepers can use the diagnostic kits (Vita Bee Health) to identify EFB and AFB (American foulbrood). These diagnostic kits have been shown to be quite reliable (89% accuracy). If you need assistance with identification of brood diseases, then please feel free to contact us at the OSU Honey Bee Lab.

Over the past three years, our team has been assisting our regional beekeeper groups with brood disease identification. Further, as you all are aware about the Veterinary Feed Directive (VFD) that came into effect on January 1, 2017, now beekeepers must obtain a prescription or VFD from a licensed veterinarian to purchase the antibiotic medications, i.e., Tylosin (Tylan), Oxytetracycline (Terramycin), and Lincomycin (Lincomix) for controlling American foulbrood (AFB) and European foulbrood (EFB) diseases in their colonies. Beekeepers can no longer

purchase these medications over the counter. Many beekeepers have expressed difficulty finding an interested veterinarian willing to provide a prescription. To mitigate this problem, we are training interested veterinarians in Oregon in honey bee brood disease identification (in collaboration with Dr. Michelle Kutzler, a veterinary colleague here at OSU). Queen problems: Due to inclement weather (mostly cloudy and rainy weather) in the valley during April and May, it appears that a large proportion of virgin queens that were produced during the swarming process were unable to mate, hence resulting in significant number of drone bound or queen-less colonies. Ongoing and Upcoming Research Projects Developing Pollen Nutrition Composition Database (USDA AFRI Funded Project): Overall goal of this project is to improve bee nutrition by building a first-of-its-kind database of the pollen nutritional compositions. We have initiated the pollen collection process for this project. Pollen from several target plant species is being collected both manually (with a handheld vacuum device) and from honey bee pollen foragers (collecting pollen foragers).

Many interested citizen scientists from across the country are volunteering to assist with pollen collection pertaining to this project. Please visit the following link to learn more about this project: orsba.org/bees-in-the-news. If you are interested, you can still sign up for assisting us with pollen collection. Please send me an e-mail at: ramesh. sagili@oregonstate.edu. European Foulbrood Study: In this study, we are investigating potential factors contributing to high prevalence of EFB in commercial honey bee colonies pollinating blueberries and other early season crops. We are testing several factors, including poor nutrition, fungicide exposure, and potentially skewed larvae to nurse bee ratio in the colonies. Damien Tupinier Oxalic Acid Vaporization Study: In 2021 summer, we tested the efficacy of different doses of oxalic acid (vaporization) for controlling Varroa. The following doses were included in the study: 1 g, 2 g and, 4 g per brood chamber. Results from that study indicated that 4 g dose was providing adequate Varroa control when used three times at weekly intervals. Unfortunately, 4 g dose of oxalic acid appears to cause some brood damage. Hence, we plan to include another lower dose of 3 g in our study this summer with the goal of obtaining similar Varroa control effectiveness as 4 g, but with a lower brood mortality. I would also like to extend our heartfelt thanks to all for your continued and unwavering support for the past twelve years. It has been a pleasure and great joy to serve you all through our research and extension program. We will provide research updates at the upcoming OSBA conference, so please stay tuned. We wish you and your bees a fabulous rest of the year.

OSU Updates continued: The Impacts of Multiple Stressors on Honey Bees - Priyadarshini Chakrabarti Basu

There are multiple stressors impacting bee pollinators such as pesticides, poor nutrition, Varroa mites, etc. It is important to not only investigate each of these stressors individually but also examine their synergistic impacts. I will briefly discuss three such recent experiments to investigate the impacts of multiple stressors.

Impacts of Pesticides on Different Age Cohorts of Honey Bees: Current EPA regulations for assessing toxicity to bee pollinators are spread across three tiers: I, II, and III. Tier I is a lab study that is done on two-day-old honey bees, Tier II is a semi-field study usually conducted in flight cages, and Tier III involves large-scale field experiments. As adult honey bees of all ages can be

exposed to pesticides, we wanted to investigate how three different age cohorts of adult honey bees (newly emerged, nurses, and foragers) respond to the same dose of pesticide (thiamethoxam) in a laboratory cage study (Figure 1) conducted for ten days. The pesticide was administered through sugar syrup. We found that foragers were most affected as evident by increased oxidative stress and reduced longevity. The newly emerged honey bees were the least affected. The nurse honey bees showed response patterns in between the other two age cohorts. Thus, we find that there are significant changes in response to pesticides across different age cohorts and further studies are required to understand such impacts across different age groups.

Impacts of Fungicides on Pollen Phytosterol Quality: This study is recently funded by the USDA AFRI program. One of the objectives is to understand the impacts of a specific group of fungicides, called the sterol biosynthesis inhibitory fungicides (SBI fungicides), on blueberry plant pollen phytosterol quality. These fungicides are designed to inhibit ergosterol biosynthesis in fungal pathogens of plants, and recent studies are showing evidence of nontarget impacts on honey bees and bumble bees as well as plants. We tested two different fungicides and sprayed them at field application rates on two varieties of highbush blueberries (Duke and Elliott) at the OSU research farm. We then hand-collected pollen from thousands of flowers (Figure 2) to test the phytosterol profiles of the plant pollens and compared the results between the treatment and the control groups. We are seeing some changes in the phytosterol profiles. This is a three-year study, and we can provide more information once all data are analyzed.

The Role of Pollen Nutrition and Commercial Probiotic on Mitigating Pesticide Stress: We wanted to investigate how an added commercial probiotic can improve overall bee health and affect the gut microbiome composition. We also additionally wanted to test the impacts of supplementing multifloral pollen patties to counteract such stress. Newly emerged honey bees were held in laboratory cages and treatments included the presence or absence of: multi-floral pollen (Figure 3), a commercial probiotic, and exposure to a lambdacyhalothrin for two weeks. As based on our preliminary data, we find the highest survival in experimental groups that are supplemented with both probiotics and pollen, as compared to experimental groups that were exposed to pesticides and not supplemented with either pollen or probiotics. This is currently an ongoing experiment, and we are still analyzing the molecular datasets. Figure 2: Hand collecting blueberry pollen. Figure 1: The Laboratory cage set up at OSU Honey Bee Lab. Figure 3: Providing multifloral pollen patties to the experimental groups. Note: Priya is currently Assistant Professor, Mississippi State University and Courtesy Faculty, Oregon State University. She presented “Multiple-Pronged Approach to Protecting Bee Health” during our 2021 Fall Conference.

Club Info

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