2024-2025 TVBA Winter Loss Report by Dewey M. Caron

Tualatin Valley Beekeepers were encouraged to complete a web-based survey document in a continuing effort to define overwintering losses/successes of backyard beekeepers in Oregon and Washington. This was the 16th year of such survey activity. I received 251 responses from OR backyarders, keeping anywhere from 1 to 49 colonies; TVBA members sent in 35 surveys, same number of responses as last year**. Loss rate was 30% of overwintering colonies**, 4.5% percentage points higher than statewide. The 35 individuals reported a total of 167 colonies (almost 5 per person average.

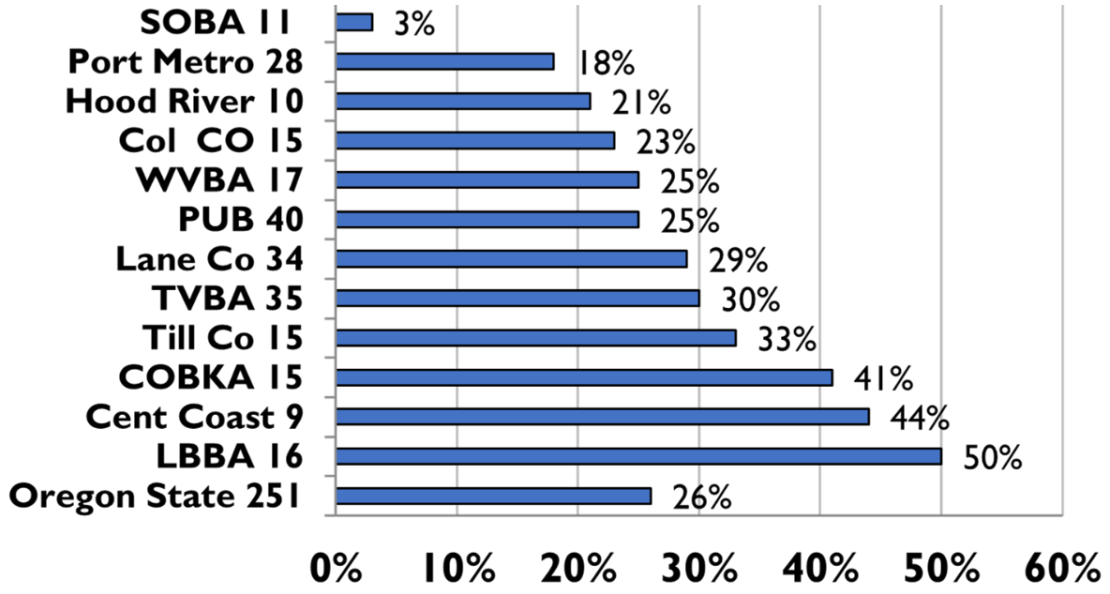
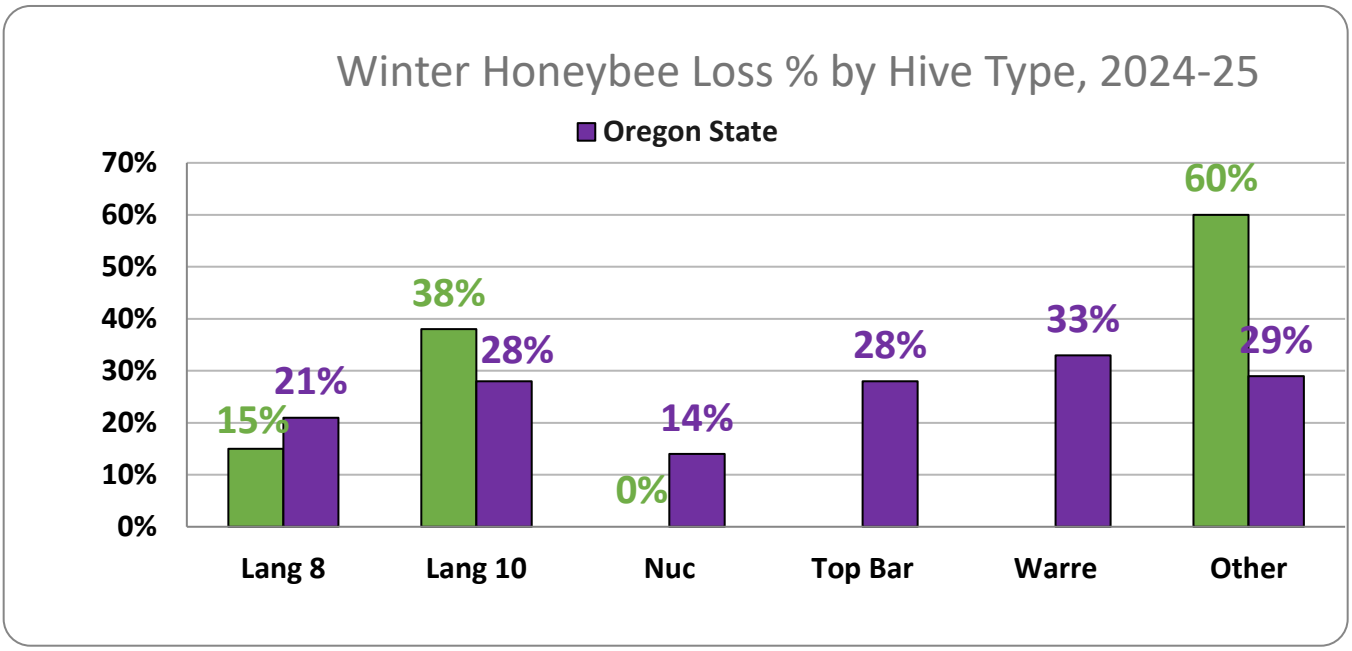


Figure 1

Figure 1 shows the loss rate of a dozen Oregon clubs. The number beside the name is number of respondents. TVBA response and Lane Co were the highest clubs respondent-wise. Percent losses, determined by hive types, were 15% Langstroth 8 and 37.5% for Langstroth 10 frames hives (The loss rates of Langstroth 8 and 10 frame hives statewide over the past 9 years have averaged 34.3% for 8-frame Langstroth hives and 38.7% loss for 10-frame hives respectively. Of 13 fall nucs all – 100% survived. Nuc losses are typically higher than losses of 8 or 10-frame Langstroth hives but were lower this year. No Top Bar or warre Hives were reported by members responding. The five other hives included a queen ban and \valkyrie hive both of which survived but 3 small swarms all perished. Figure 2.

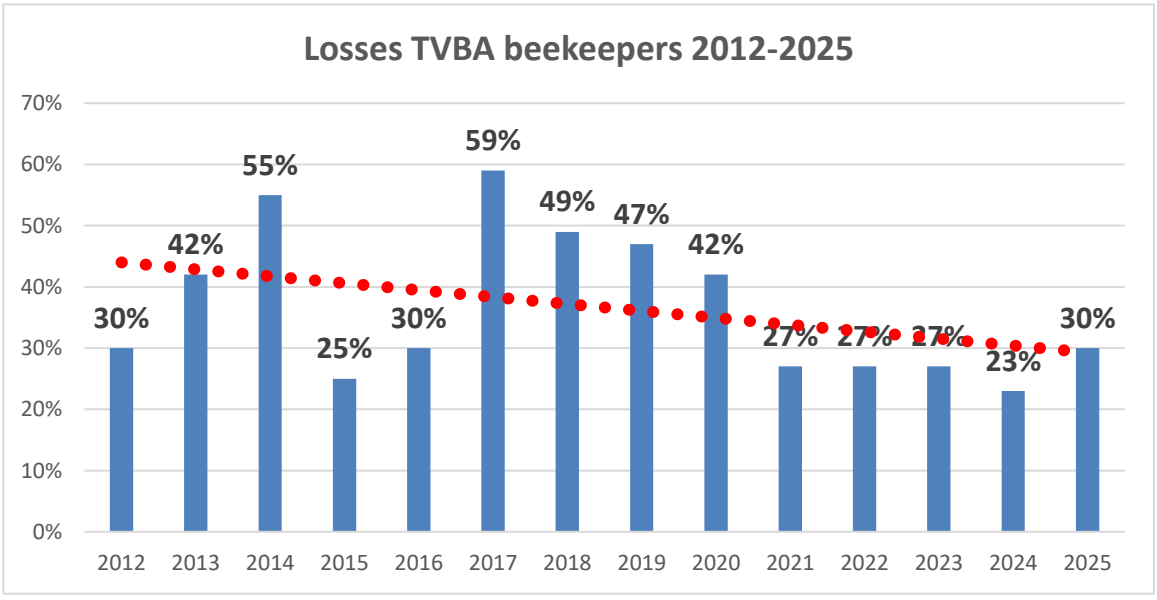
F**igure 3 shows TVBA losses for past 14 years**. Solid line is loss trend – with loss at or below 30% the last 5-years, average loss has decreased to 39%. The trend line (dotted red line) is downward.

Figure 2



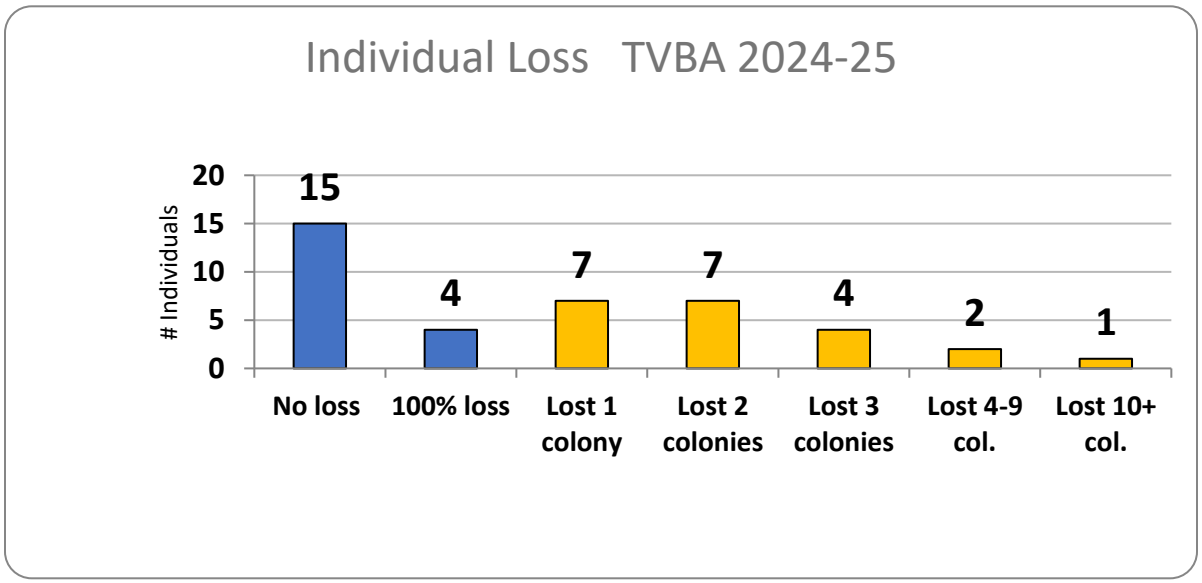
Fall	53	125	13	0	0	5
Spring	45	78	13			2

Figure 3



Not everyone had loss. In fact, 15 members (37.5%) reported NO LOSS (total of 69 colonies) while 4 members (10%) reported total winter loss of colonies (but this was only 7 colonies total). Seven individuals lost one colony, seven individuals lost 2 colonies and 4 individuals lost 3 colonies. Two individuals lost 4-9 colonies and the largest loss was one individual who lost 10 colonies. See Figure 4.

Figure 4

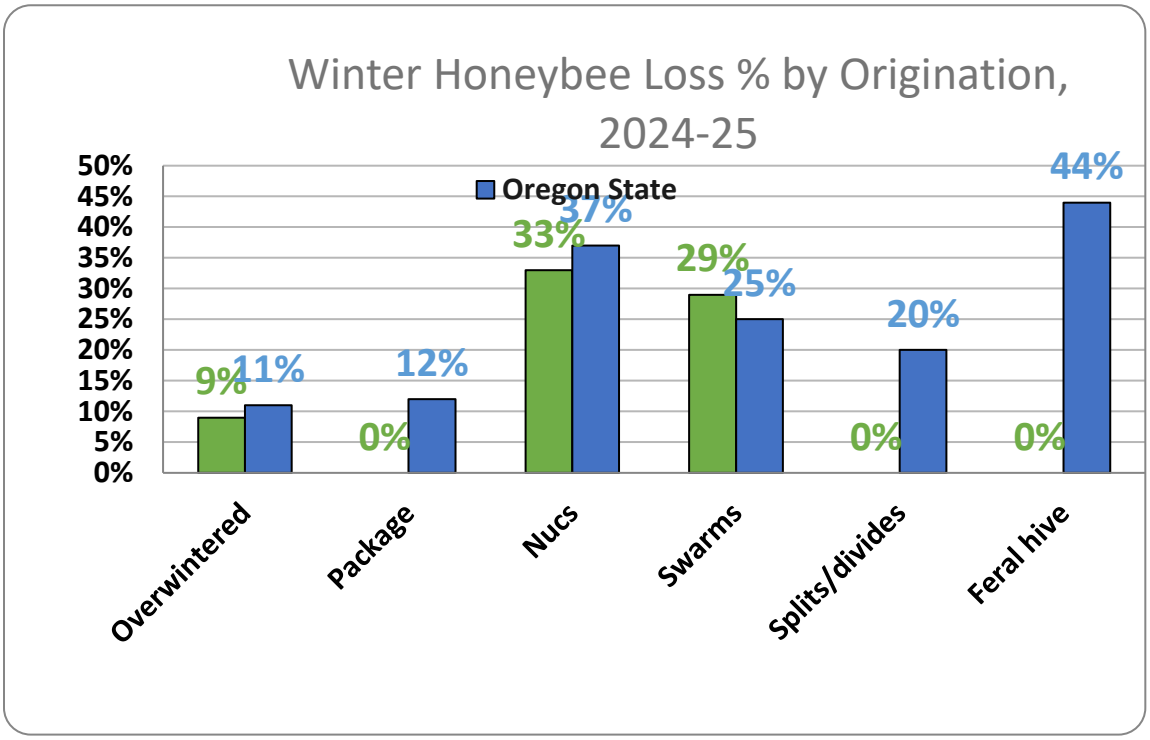


The survey also asked for hive loss by hive origination. Individual could FAST TRACK the survey and not respond to this question; 16 individuals did pass it by (40% of responding members.). The members overwintering a previously overwintered colony lost only 5 colonies - 9% loss level, nearly same as 11% reported statewide. One individual had total success with 2 package-originated colonies as did one individual with a single feral colony. Three of 9 fall nucs did not survive (33% loss). The nine splits all survived while 7 of 24 swarm-derived fall colnies did not survive. See Figure 5

Thirteen TVBA respondents (36%) had 1 to 3 fall colonies; they had 34.5% loss level. Twelve respondents had 4 to 6 colonies had the greatest survival level - 20.5% loss. {Individuals with 1-6 colonies (69.5%) had 25% loss level]. Six respondents (17%) had 7 to 9 colonies (27% loss level) and five individuals had 10-17 colonies– maximum number for any respondent was 17 colonies. Loss level of this group managing 64 colonies was 37.5%. [The 11 individuals had 33% loss level]. Statewide as colony numbers increase percent of colony losses decrease but this did not hold for TVBA respondents.

The relationship of years of experience to colony loss was not as typical of statewide - as years experience increases the loss percentages decreases. Six individuals (17% of respondents) had 1-3 years' experience (loss level 12.5%), 11 had 4-6 years experience (loss level 32%), Eight had 7 to 9 years (loss level 27.5%), 6 respondents with 11-19 years' experience (21% loss level) while the five individuals with 25 to 7 years' experience lost 29.5% of fall colonies. There was no clear decline in colony losses with greater years of experience as has continued to be the case statewide.

Figure 5



Fall	**55**	**2**	**9**	**24**	**9**	**1**
Spring	**50**	**2**	**6**	**17**	**9**	**1**

A single individual indicated they had more than a single apiary location. Loss level at 2nd apiary was the higher (all 4 colonies lost) than at original apiary site. No respondents said they moved colonies. Seventy-eight percent (28 individuals) of respondents (last year it was 80%) said they had a mentor available as they were learning beekeeping. None of respondents moved their bees.

We asked individuals that had colony loss to estimate what the likely reason(s) might have been. Multiple responses were permitted. Eight responses were queen issues and weak colony. Varroa was indicated five times. Starvation was mentioned three times and there were two responses for Don't know CCD, poor wintering, and yellow jackets.

When asked about an acceptable level of loss (acceptable not defined – discretion of individual respondent) the greatest selection was 25%. Twenty percent was the median. Four individuals said 50% + was acceptable.

Why do colonies die?

There is no straightforward way to verify reason(s) for colony loss. Colonies in the same

apiary may die for several 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. There is a good deal of variance in opinion 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.

Major factors in colony loss are mites and their enhancement of viruses especially DWV (deformed wing virus) and declining nutritional adequacy/forage and diseases. Pesticide exposure in the agricultural environment weakens colonies. 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 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 facing honey bees in the current environment.

Management selections and losses

The survey inquired about feeding practices, wintering preparations, sanitation measures utilized, screen bottom board usage, queens, mite monitoring and both non-chemical mite control techniques (such as screen bottom board use, drone brood removal efforts, etc.) and chemical mite controls utilized. Individuals could FAST CHECK and not provide a response. The TVBA respondents did largely provide management – 78& (28 individuals) included management information.

Most TVBA and OR beekeepers do not perform just one thing/management to their colony (ies) to control mites toward improving overwintering success. This analysis however is of a single factor equated with loss level. Such analysis is correlative and doing similar managements does not necessarily mean you too will improve success.

This analysis takes more time. Results will be posted as soon as available. I intend to continue to refine this instrument each season and hope you will join in response next April. If you would like a reminder when survey is open please email us at info@pnwhoneybeesurvey.com with "REMINDER" in the subject line. I have a blog on the pnwhoneybeesurvey.com and will respond to any questions or concerns you might have. Email me directly for quicker response. dmcaron@udel.edu

Thank You to all who participated. If you find any of this information of value please consider adding your voice to the survey in a subsequent season. Dewey Caron May 2025