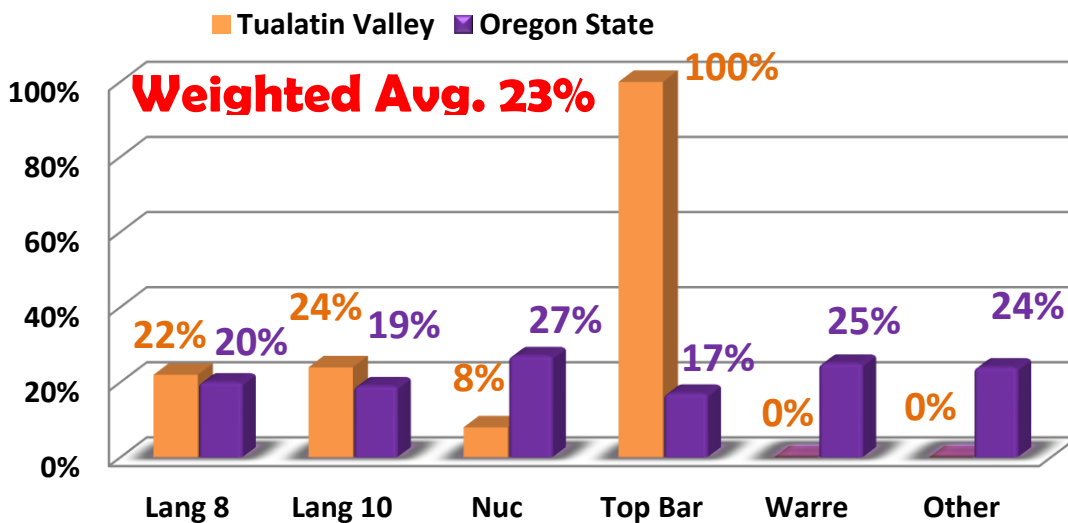


2023-2024 TVBA Winter Loss Report by Dewey M. Caron

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 15th year of such survey activity. I received 171 62 fewer responses, from OR backyarders, keeping anywhere from 1 to 40 colonies; TVBA members sent in 35 surveys, 13 fewer than last year but it was the club with the greatest number of responses. The 35 individuals reported a total of 167 colonies (almost 5 per person average). This was 88 fewer than last year.

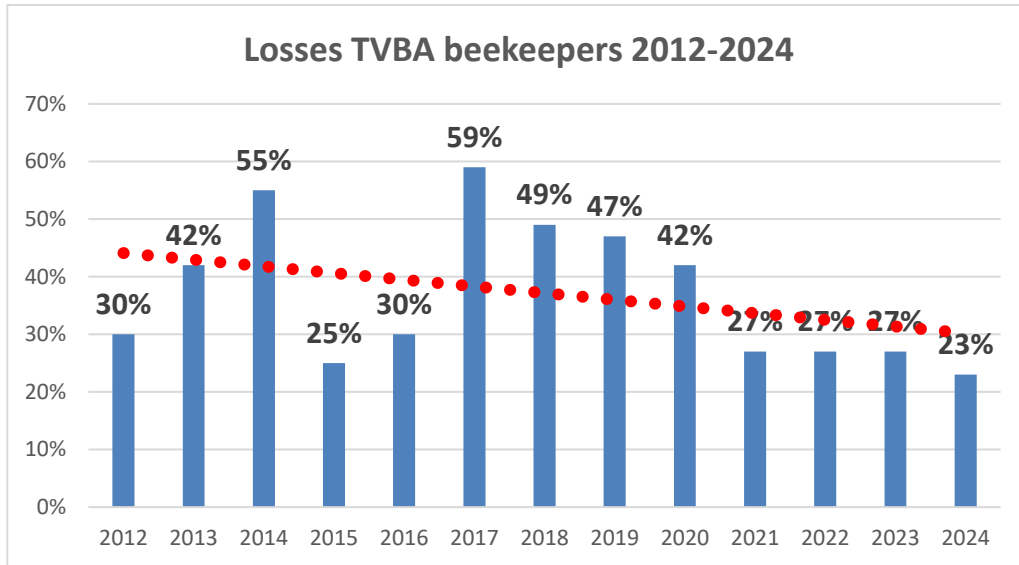
Overwintering losses of TVBA respondents =23 %, four percentage points lower than same level as last three years of 27% but 3 points higher than statewide average. Loss level was 14.5 percentage points lower than the 13-year TVBA average loss level of 37.5%. Percent losses, determined by hive types, were 22% Langstroth 8 and 24% for Langstroth 10 frames hives (Statewide the losses respectively were 20 and 19 percent – the 8-year average loss of 8 frame hives is 36% and Langstroth 10 frame hives=40%). A single 5-frame Nuc was loss of 13 total in fall- 8%). Statewide loss level was 27%. A single Top bar hive was lost as was the single long hive but the single Warré hive did survive.

Loss by hive type TVBA and OR State 2023-24



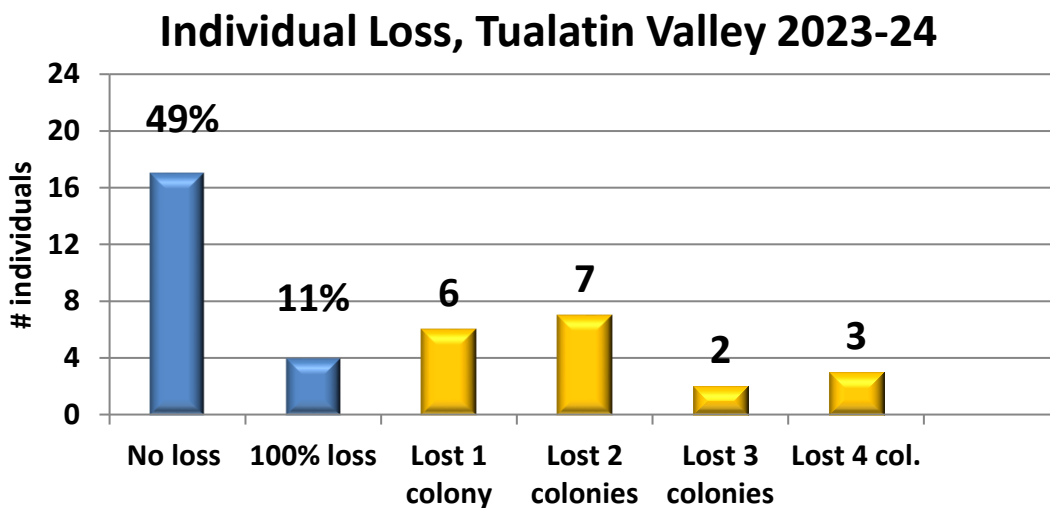
The attached figure below shows TVBA losses for past 13 years. Solid line is loss trend – with lower losses the last 4-years, average loss has decreased to 39%. The trend line (dotted red line) is downward.

Figure 2



Not everyone had loss. In fact, 17 members (49%) reported NO LOSS (total of 92 colonies) while only 4 members (11%) reported total winter loss of colonies (but this was only 9 colonies total). Six individuals lost one colony, seven individuals lost 2 colonies. Two individuals lost 3 colonies and three lost 3 colonies (total loss=38 colonies). The heaviest loss was 4 colonies.

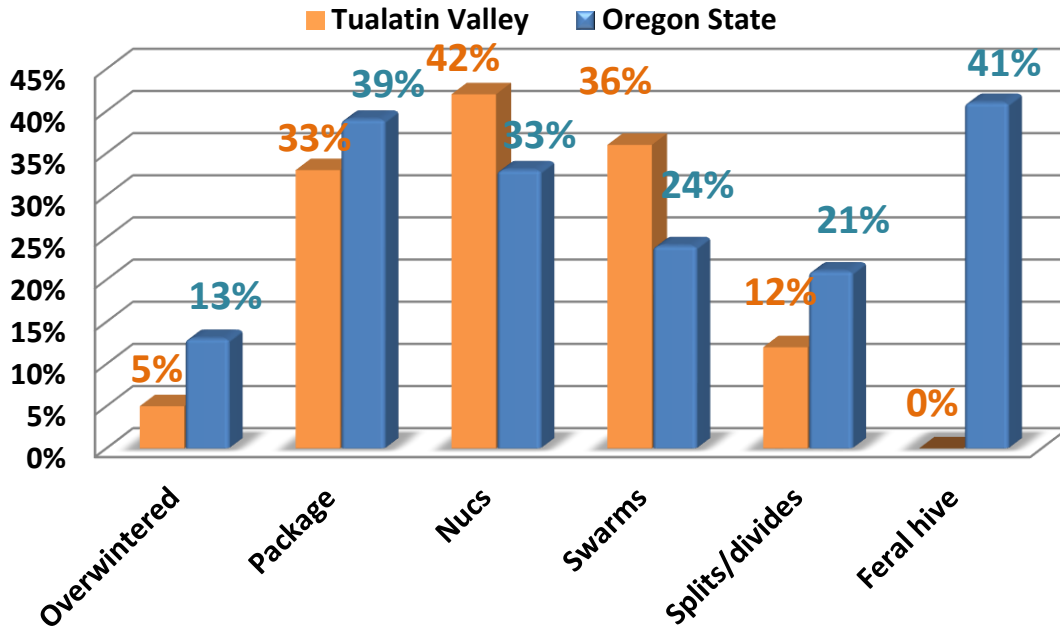
Figure 3



The survey also asked for hive loss by hive origination. The members reported only loss of 5 colonies 5% loss of previously overwintered colonies (compared to 13% statewide), 33% loss (1 of 3) packages, and 40% loss of nucs (14 survivors of 2 fall nucs). Swarm losses were 36% but splits did much better (12% loss). Two feral transfers survived.

Figure 4

TVBA losses by Origination 2023-24



Typical of the statewide data, the TVBA respondents are largely new beekeepers. Fourteen of 35 TVBA respondents (40%) had 1 to 3 fall colonies; they had 32% loss level. And equal number 3% had 4 to 6 colonies (loss level 33%). Four respondents (11%) had 7 to 9 colonies (25% loss level) and three individuals (14.5%) had 12-15 colonies— maximum number for any respondent was 15 colonies. Loss level of this group managing 41 colonies was zero. As colony numbers increase percent of colony losses decrease.

The TVBA beekeepers are not as typical of statewide in years experience. Nine individuals (26% of respondents) had 1-3 years experience (loss level 30%), 11 had 4-6 years experience (loss level 11%), Six had 7 to 9 years (loss level 48%) and 8 respondents with 10+ years experience (18% loss level). Forty-seven years experience was the largest number of years experience. There was no clear decline in colony losses with greater years of experience as has continued to be the case statewide.

Five individuals (14%) had more than a single apiary location. Loss level at 2nd apiary was the same or in one case better than at original apiary site. Eighty percent (28 individuals) of respondents (same as last year) 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 check none or more than one response; 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.

Closing comments

This survey was originally designed to ‘ground truth’ the larger, national Bee Informed loss survey. See statewide PNW reports for OR and WA for this comparison (figure 5 of that report). The numbers while slightly different do in fact track well. Unfortunately, the national BIP survey was discontinued after 2023. See the BeeInformed website www.beeinformed.org for additional information and are encouraged to examine that data base as well. The BeeInformed survey is measuring the larger scale OR beekeepers not the backyarders as loss rates are of total colony number. Reports for individual bee groups are customized and only available from the PNW website; they are posted for previous years.

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 2024