2020-2021 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 12th year of such survey activity. I received 328 responses from OR backyarders, keeping anywhere from 1 to 40 colonies; TVBA members sent in 57 surveys, 4 more than last year, reporting on 281 fall colonies.

Overwintering losses of TVBA respondents =27 %, an improvement from last year (losses last year were 42%). **TVBA losses were the lowest of a dozen Oregon clubs and the 2nd lowest in the past 10 years**. Loss level was 13 percentage points lower than the 10 year average losses. Percent losses, determined by hive types were 35% Langstroth 8 and 24% for Langstroth 10 frames hives. Nuc losses (15 total fall nucs) were 27%. Of three Top bar hives one was lost. I "other," a Valkyrie (horizontal) hive, did not survive. The **attached figure shows TVBA losses for past 8 years**. Solid line is loss trend – basically average loses have been at the same level (40%) for the past 8 years.

The survey also asked for hive loss by **hive origination**. The members reported 20% loss of previously overwintered colonies, a heavy 86% loss of the 7 packages (only one survived), while nuc (48%), swarm (32%) and split (29%) losses were intermediate. Four of five feral transfers survived (20% loss).

Typical of the statewide data, the TVBA respondents are largely new beekeepers. 47% of TVBA respondents had 1 to 3 fall colonies, another 35% had 4 to 6 colonies while 6 respondents (10½ %) had 10+ colonies – maximum number for any respondent was 40 colonies. Not everyone had loss. In fact, 24 members reported NO LOSS (42% of survey respondents) while only 4 respondents (7%) reported total winter loss of colonies.

Reasons for Colony Loss/Acceptable loss

We asked of individuals that had colony loss to estimate what the likely reason(s) might have been, Multiple responses were permitted. Fifteen individuals (45%) of those having losses said Queens and 14 Varroa mites (42%). 24% said weak in fall and 21% said starvation. 4 individuals said pesticides were involved in losses, and three (9%) individuals each said Yellow jackets, poor overwintering and moisture.

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. 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

I will be preparing a report of how managements affected winter losses similar to earlier years. A full report will be posted to pnwhoneybeesurvey.com for the state respondents along with a **TVBA individual club report** when that analysis is completed. I thank all TVBA members who sent in a report. Please get in touch directly if you have questions or comments. dmcaron@udel.edu