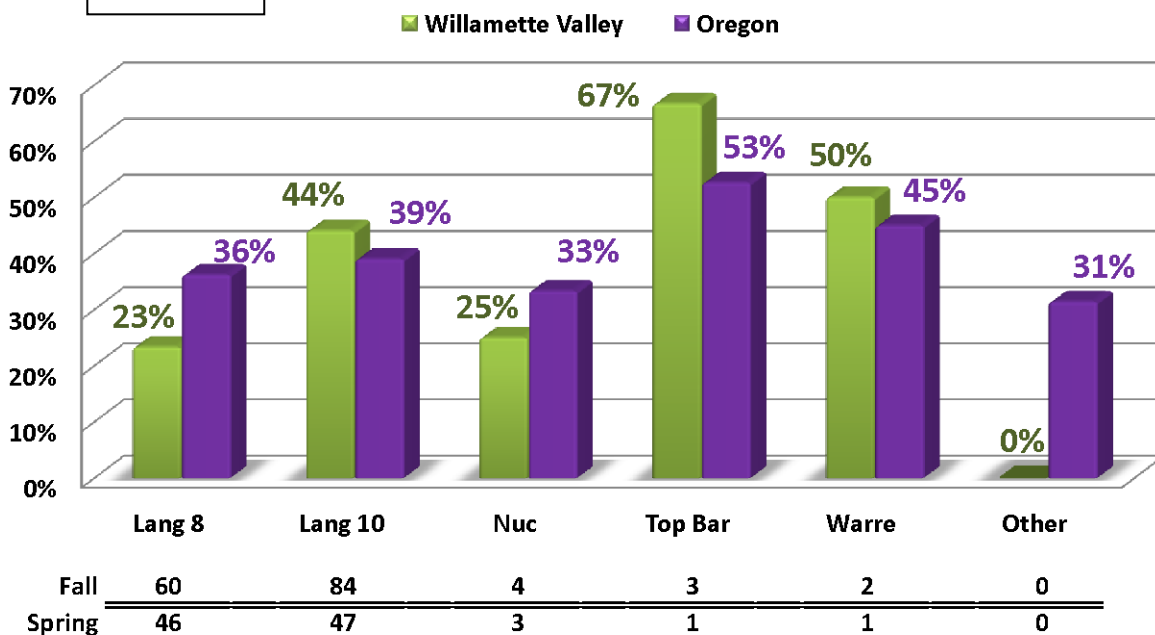


## 2017-18 WVBA Winter Loss Report by Dewey M. Caron

At the April WVBA meeting I distributed paper copies and directed members to a web-based survey document in a continuing effort to define overwintering losses/successes of backyard beekeepers in Oregon. This was the 10<sup>th</sup> year of such survey activity. I received 303 responses from OR backyarders, keeping anywhere from 1 to 50 colonies; Willamette Valley members sent in 34 surveys, 10 more than the previous year, reporting survivorship of 153 fall colonies.

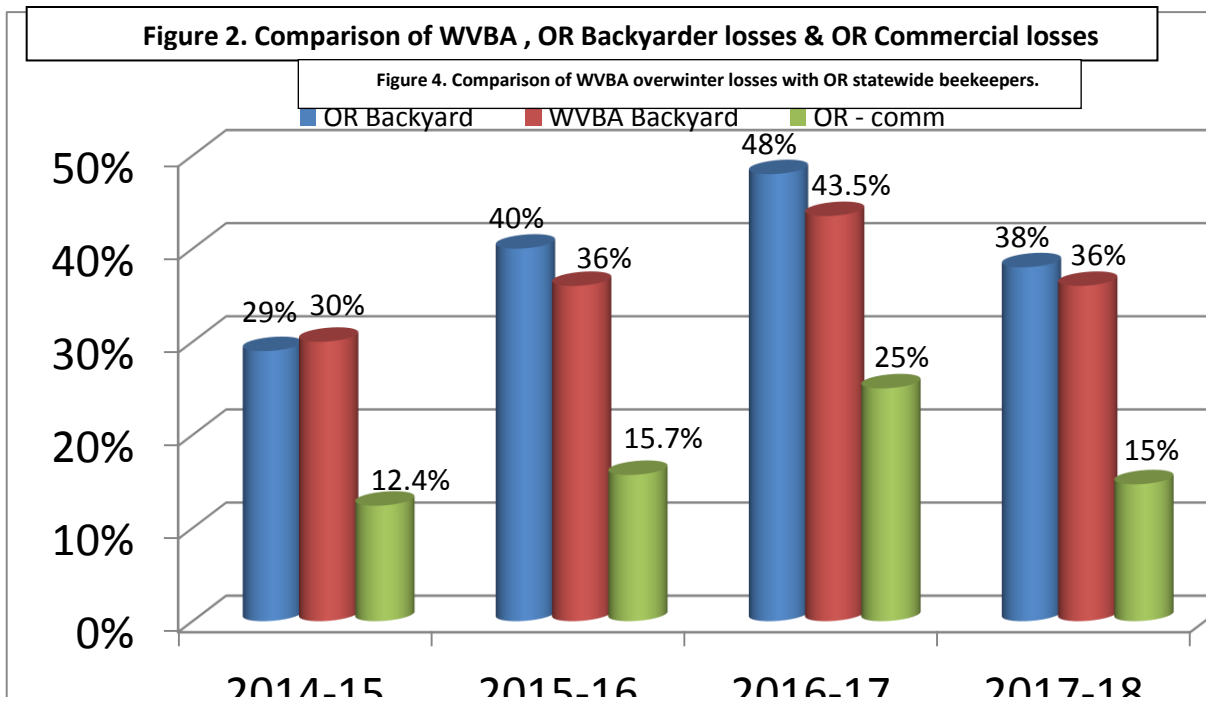
**Overwintering losses of WVBA respondents was 55 colonies = 36 %**, slightly lower than the statewide loss of 38% (database of 303 OR backyarders.) Percent losses, determined by hive types, are shown in Figure 1 comparing WVBA with the statewide backyarders. WVBA member respondents started winter with 84 Langstroth 10-frame, 60 Langstroth 8-frame hives and 4 5-frame nucs; there were an additional 4 Top Bar hives (2 lost) and 2 Warré hives (1 lost). Losses of 8 framers was less and 10 frame losses were slightly higher compared to statewide beekeepers.

**Figure 1 2017-18 Winter Honeybee Loss % by Hive Type**

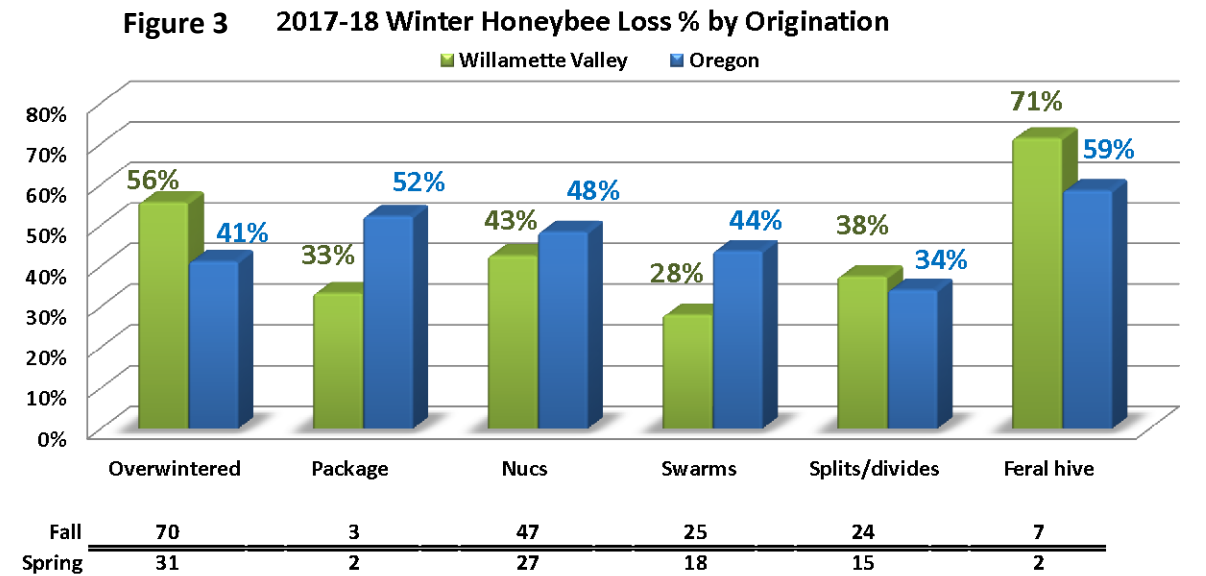


Compared with previous loss levels, the losses in 2016-2017 winter by WVBA backyarders were lower than the previous year but on the average of the previous three seasons. As with last season, WVBA losses were lower than the statewide loss level (by only 2 percentage points); commercial OR beekeepers have ½ the losses of backyarders. Figure 2.

Typical of the statewide data, the WVBA respondents are largely new beekeepers. 54% of WVBA respondents had 1, 2 or 3 fall colonies, 7 (20%) had 4-6 colonies, 5 had 7 or 8 colonies (14%) and 2 had 10 and another 2 had 12 fall colonies, the largest number of respondents. Seventeen (50%) had 1, 2 or 3 years of experience, 12 had 4-6 years (35%), one each had 8, 9 or 10 colonies and 3 had 2+ years experience, the largest was 34 years.

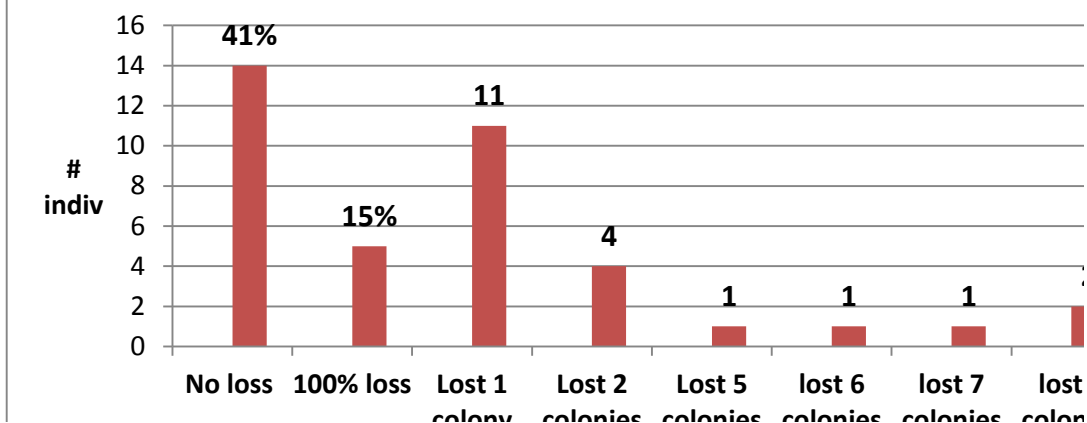


The survey also asked for hive loss by hive origination. Thirty-one of 70 overwintered WVBA colonies were alive in the spring (56% loss rate). Respondents reported lower loss levels compared to statewide Oregon beekeepers of packages (only 3 reported by WVBA beekeepers – 2 survived), nucs (43%), and swarm captures (28%). Split/divide losses were comparable to state levels while only 2 of 7 feral transfers (71% loss) survived. Figure 3.



Not everyone had loss. Fourteen WVBA individuals (41%) reported total winter survival; 5 individuals (15%) lost 100% of their colonies. Eleven individuals lost 1 colony, 4 members lost 2 colonies, 1 lost 5, 1 lost 6, one lost 7 and 2 lost 9 colonies, the heaviest loss. Data shown graphically below in Figure 4. Fifty percent indicated acceptable overwinter of 20%. Both 5 individuals chose zero and 50% level as acceptable. Most common responses (6 individuals) was 15% and 20%.

### Figure 4. 2018 WVBA bee loss



Two individuals had more than one apiary location. Loss at 2<sup>nd</sup> apiary site was 62.5% compared to 12.5% at home apiary. Four individuals moved bees during the year, one when a commercial moved too close, another to give hive to friend, a third for honey and the 4<sup>th</sup> within the apiary to have less hive shading.

We asked of individuals that had colony loss to estimate what the likely reason(s) might have been, Multiple responses were permitted. There were 28 selections (1.5/individual). Varroa mites (9) and queen failure (7) were most chosen, with poor wintering conditions and weak in fall (4 individuals each) next. There was 1 individual who checked starvation, 1 checked CCD, another listed wax moth and one said loss was due to a rolled queen.

	Varroa mites	Poor wintering conditions	Weak in fall	Queen failure	Starvation	pesticides	Yellow jackets	Other
Portland Metro # (%)	9 (47%)	4 (21%)	4 (21%)	7 (37%)	1 (5%)	0	0	3 (18%)
Statewide %	39%	16%	24.5%	30%	9%	7%	11%	23%

**Why do colonies die?** There is no single reason for loss and a good deal of variation 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. Last year our longer, colder winter could have been a factor in heavier losses; this year our up-and-down spring might have been a factor? Weather is a stressor.

The four major factors affecting losses are thought to be mites, pesticides, declining nutritional adequacy of the environment and diseases, especially viruses and Nosema. Management, either failure to do something or doing things incorrectly, remains a factor in overwinter losses. What effects alteration to the bee’s natural environment and other external factors play in colony losses are not at all clear.

Langstroth wrote about the importance of taking losses in fall management saying if the beekeeper neglects such attention to his/her colonies 45% loss levels may occur, depending upon variable environmental conditions. It seems the “normal” of backyard losses is 30-50%. Older, more experienced beekeepers recall when loss levels were 15% or less. Honey production fluctuates each year but, once again, it seems to be declining on average. Despite heavy annual losses nNumbers of U.S. bee colonies have remained level since the 1970s; worldwide numbers of bee colonies are steadily increasing.

**There is no simple answer to explain the levels of current losses nor is it possible to demonstrate that they are excessive for all the issues facing honey bees in our 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 mite control techniques (such as screen bottom board use, drone brood removal efforts, etc.) and chemical mite controls used. These managements are keyed to loss levels. Individuals could check none or more than one response; most WVBA and OR beekeepers most often do not do just one thing/management to their colony (ies) to control mites toward improving overwintering success.

Analysis of this data takes a longer time period. It will be posted as soon as available.

**THANK YOU** to all WVBA individuals for filling out a loss survey. Your cooperation is most appreciated.

Dewey Caron 2018