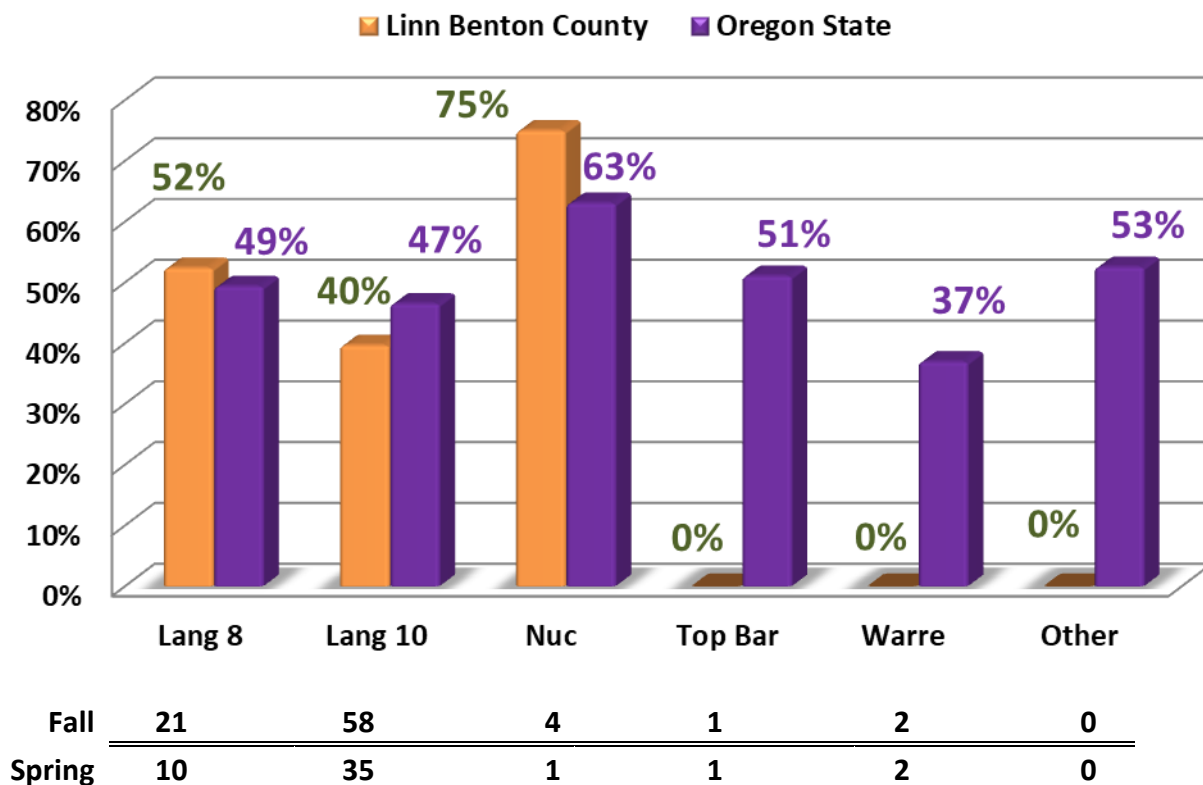


2018-19 LBBA Winter Loss Report PART 1 by Dewey M. Caron

Oregon beekeepers were directed to a web-based survey document in a continuing effort to define overwintering losses/successes. This was the 10th year of such survey activity and the fourth to include a 10+ beekeeper response from Linn Benton Beekeepers. I received 416 responses from Oregon backyarders and 98 from Washington beekeepers keeping anywhere from 1 to 38 OR/40 WA colonies. Twenty two LBBA Association members completed a survey (double last year and 1 less than previous year LBBA response rate).

Overwintering losses of LBBA respondents, as for total OR beekeepers, was determined for number of fall colonies minus number of spring survivors by 5 hive types. Data are shown in Figure 1 with LB compared to statewide loss numbers. **LBBA Overall average loss rate 43%**, 5 percentage points lower than statewide, largely due to the better survivorship of Langstroth 10 frame colonies (40%). No top bar or Warré or other hives were lost but they totaled only 3 colonies (see number of fall and spring numbers below graph).

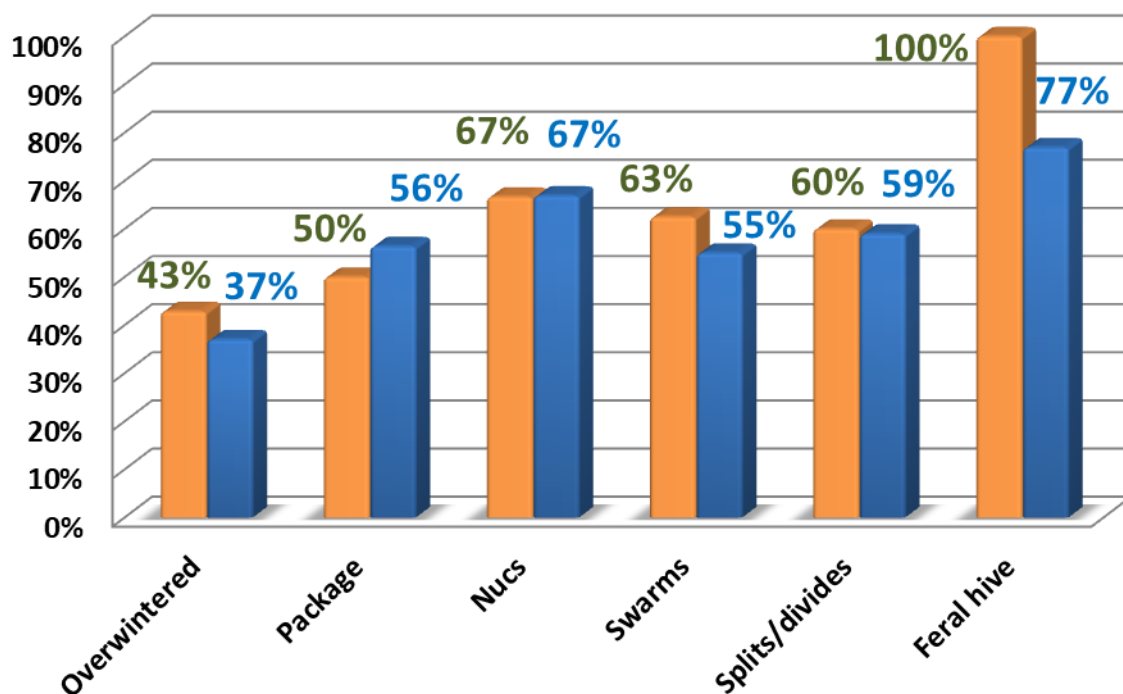
Figure 1 2018-19 Winter Honeybee Loss % by Hive Type



The survey also asked for hive loss by hive origination. Overwintered colonies, for both LB and statewide beekeepers, did better. Data comparing LB with statewide shown in Figure 2.

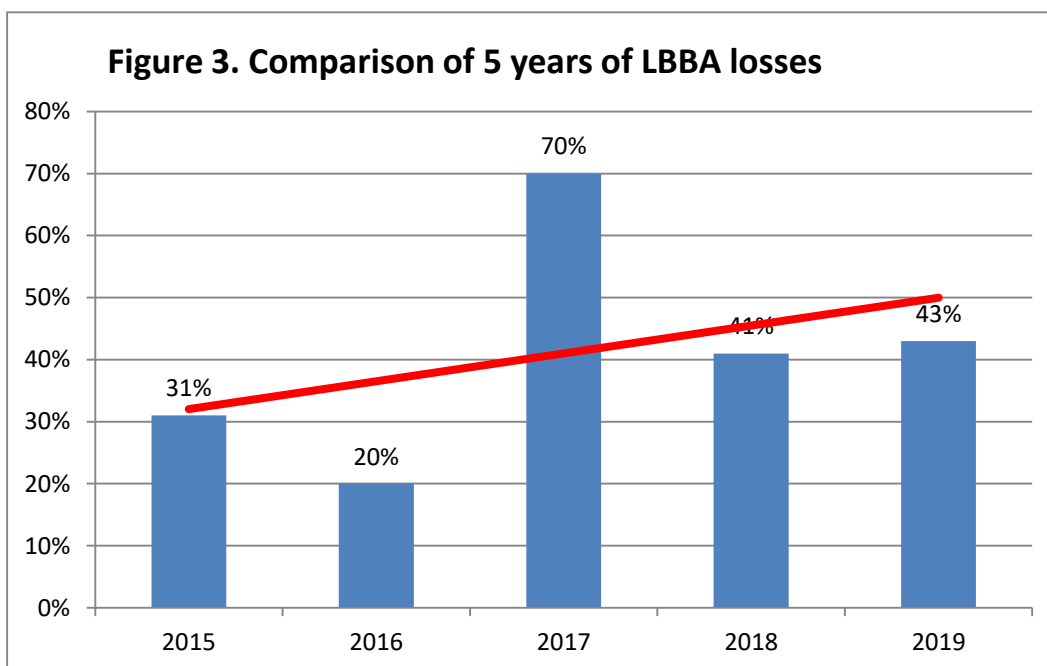
Figure 2 2018-19 Winter Honeybee Loss % by Origination

■ Linn Benton County ■ Oregon State



Fall	56	4	6	32	20	1
Spring	32	2	2	12	8	0

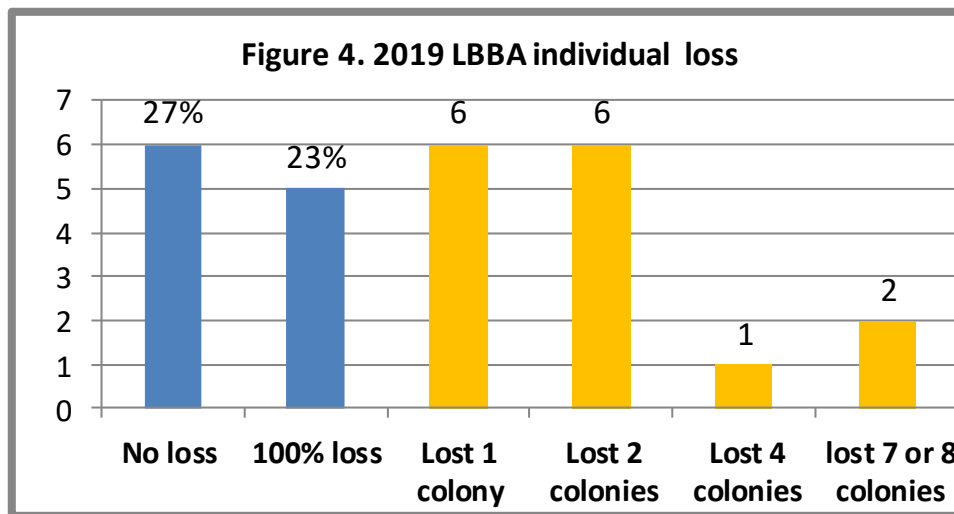
Figure 3. Comparison of 5 years of LBBA losses



In the 2016-2017 overwintering period LBBA members had the highest loss rate of any of the OR associations and the year earlier (2015-2016) LBBA had the lowest rate of state bee groups. The remaining 3 of past 5 years have been closer to the statewide numbers. Losses this year of 43% were just above the 5 year average (40.5%). Trend line shown in red. Data shown in Figure 3.

The 22 LBBA survey respondents were all single digit beekeepers. Twelve individuals (55%) had 1,2 or 3 fall colonies , 6 individuals had 4 to 6 colonies and 4 individuals (18%) had 7, 8 or 9 colonies. Six respondents had 1 to 3 years of beekeeping experience (27%), 9 individuals had 4 to 6 year experience (41% - Median was 5 years), 5 had 7 or 8 years experience and 2 individuals (9%) had 10+ years experience, with 15 the highest. 13 individuals (59%) had a mentor available as they were learning beekeeping.

Six individuals had no loss and 5 experienced 100% loss. Six individuals lost either one or two colonies, 1 each lost 4, 7 and 8 colonies, the highest loss for any individual. Two individual respondents kept bees in more than a single apiary.



Reasons for Colony Loss/Acceptable loss

We asked individuals that had colony loss to estimate what the reason might have been for their loss (multiple responses were permitted). There were 30 total listing for PM, 1.9/individual, slightly less than statewide. Seven LB individuals listed varroa (40% of respondent choices), followed by queen failure (34%) and weak in fall (25% each); 6 individuals chose Don't know 27%. Choices were very similar to last year. Table compares LB with % statewide selections.

	Varroa mites	Poor wintering conditions	Weak in fall	Queen failure	Starvation	CCD	Yellow jackets	Other
LBBA (#)	7	2	4	4	3	1	2	3
(%)	(44%)	(12.5%)	(25%)	(25%)	(19%)	(6%)	(12.5%)	(19%)
Statewide %	40%	23%	29%	27%	18%	4%	14.5%	15%

Survey individuals are asked to indicate what might be an acceptable loss level. The median (middle) selection was 25%. Nine LB responses (41%) were 15% or less, 18% of respondents selected 25% and 14% said 33%; 2 individuals said 50% and 1 said 100% acceptable.

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. I am working on a book chapter on necropsy of dead bees and will post it as report on the www.pnwhoneybeesurvey.com website.

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. LBBA individual choices varied from zero to 100%, with medium of 20%. This acceptable loss level has crept upwards over time.

Major factors in colony loss are thought to be mites and their enhancement of viruses especially DWV (deformed wing virus) and declining nutritional adequacy/forage and diseases. Pesticide 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, contrails, electromagnetic forces, including human disruption of it, 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 facing honey bees in the current environment. Varroa mites and the viruses they transmit are considered a major factor colonies are not as healthy as they should be. LBBA members also chose queen failure and weak in fall, as reasons for high losses.

Management selections and losses

The survey inquired about feeding practices, wintering preparations, sanitation measures utilized, screen bottom board usage, queens, mite monitoring techniques and non-chemical and chemical mite controls used. Individuals could check none or more than one response or add additional items; most beekeepers often do not do just one thing/management to their colony (ies) to control mites/improve bee health. It takes effort to improve overwintering success.

This analysis seeks to compare responses of this past season to previous survey years. This requires further data crunching and analysis. Part 2 report will be posted as soon as available.

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 2019