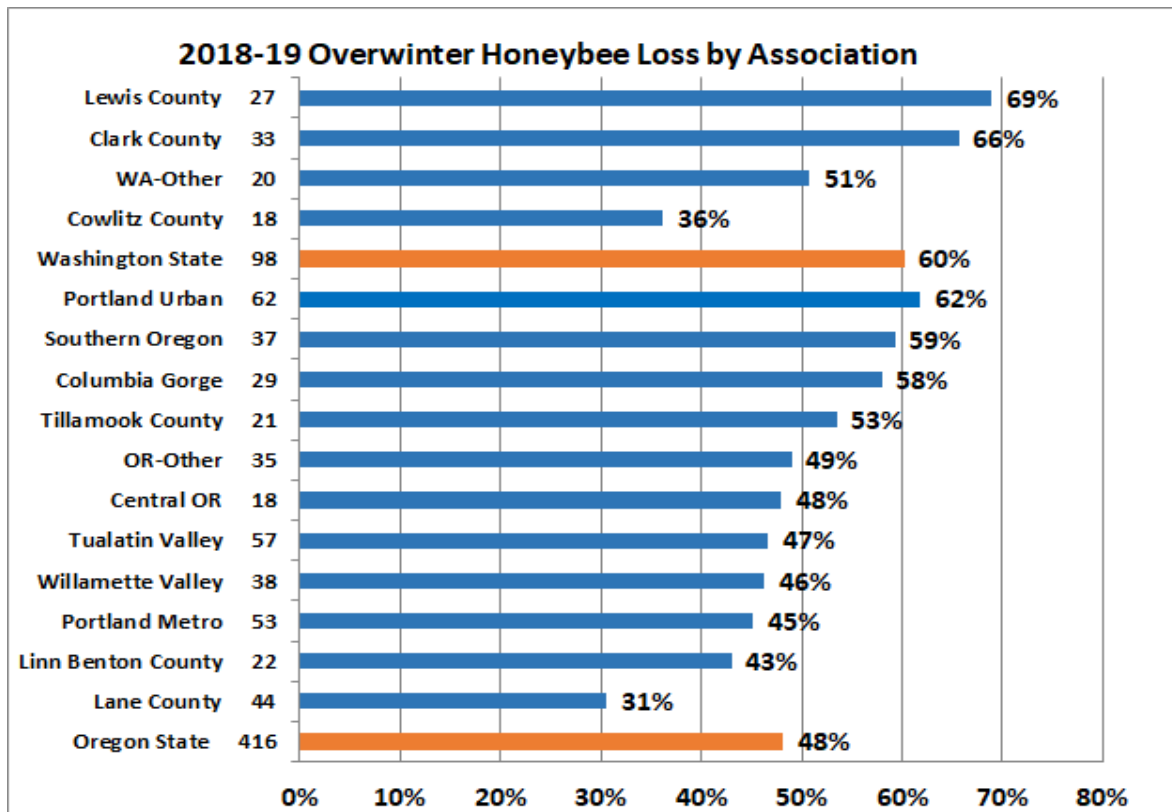


## Clark Co beekeeper Losses 2018-19 Part 1 by Dewey Caron

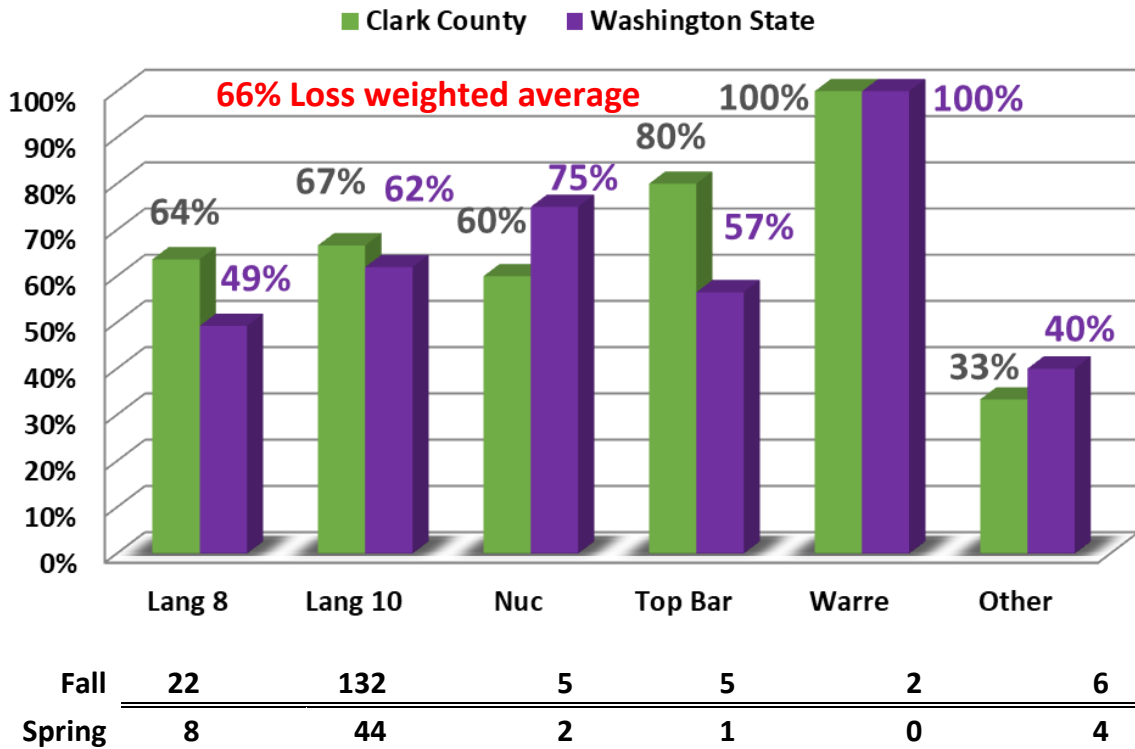
Overwintering losses of small scale Washington beekeepers was elevated by sixteen percentage points over the 2017-18 loss level (44%) but returned to the high levels (60%) of 2016-17. 98 WA beekeepers (six fewer than last year) supplied information on winter losses and several managements related to bee health with an electronic honey bee survey instrument [www.pnwhoneybeesurvey.com](http://www.pnwhoneybeesurvey.com). Figure 1 shows total WA & OR response. Or losses (48%) were 12 percentage points lower than those of Washington beekeepers.



### Clark Co backyard beekeeper overwinter loss = 66% loss.

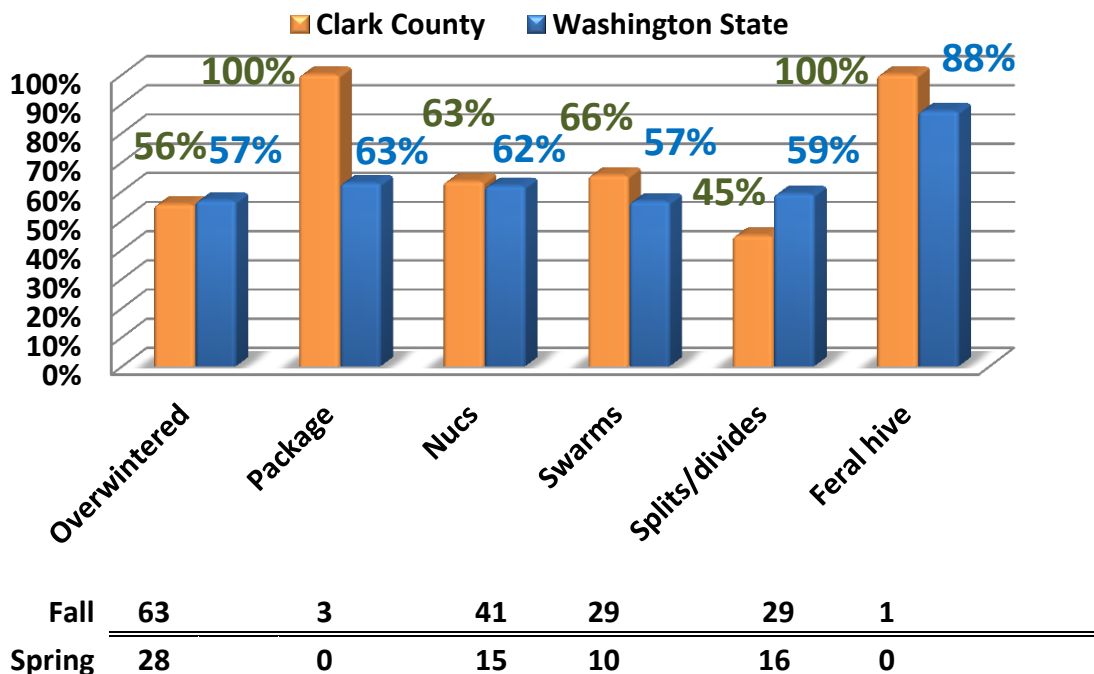
The loss survey overwintering statistic was developed by our asking number of fall colonies and surviving number in the spring by hive type. Results, shown in Figure 2 bar graph, illustrates overwintering losses in comparison with other Washington beekeepers. The “other” six hive types were not identified so excluding them as unknown, 96% of the hives (159 of 166) had movable frames with 66% loss. Of 7 alternative hives only one survived (86% loss rate). Clark Co members had 28% of alternative hives compared with 40% last year but Clark Co losses (86%) were considerable higher than 60% overall loss of these two hive types by Washington members.

**Figure 2 2018-19 Winter Honeybee Loss % by Hive Type**



**Loss by hive origination:** We also asked survey respondents to list their loss by hive origination. The result is graphically presented below for the 33 Clark Co respondents alongside

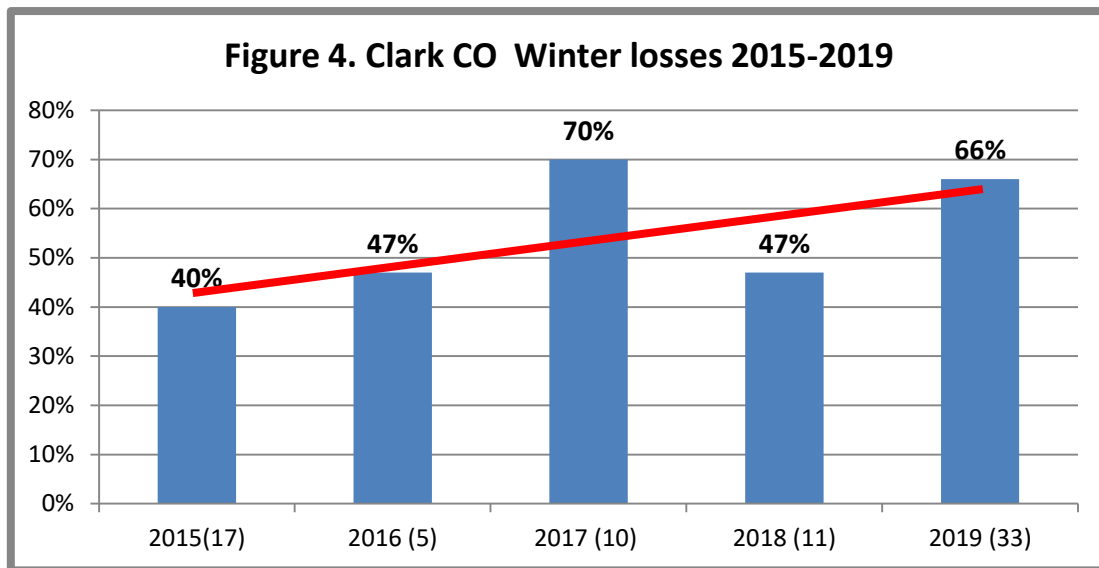
**Figure 3 2018-19 Winter Honeybee Loss % by Origination**



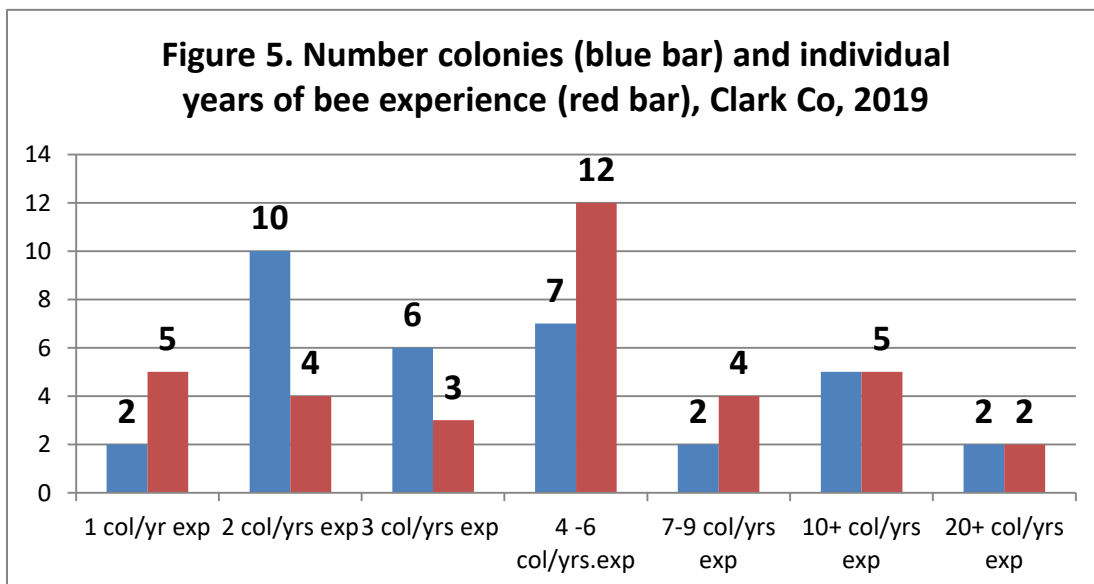
Washington State respondents. Packages show 100% loss but there were only 3 packages and 1 feral hive – otherwise numbers essentially same as Washington State except for splits which demonstrated better survival for Clark Co members.

**Loss History** Losses this past overwinter were elevated again similar to 2016-17 winter.

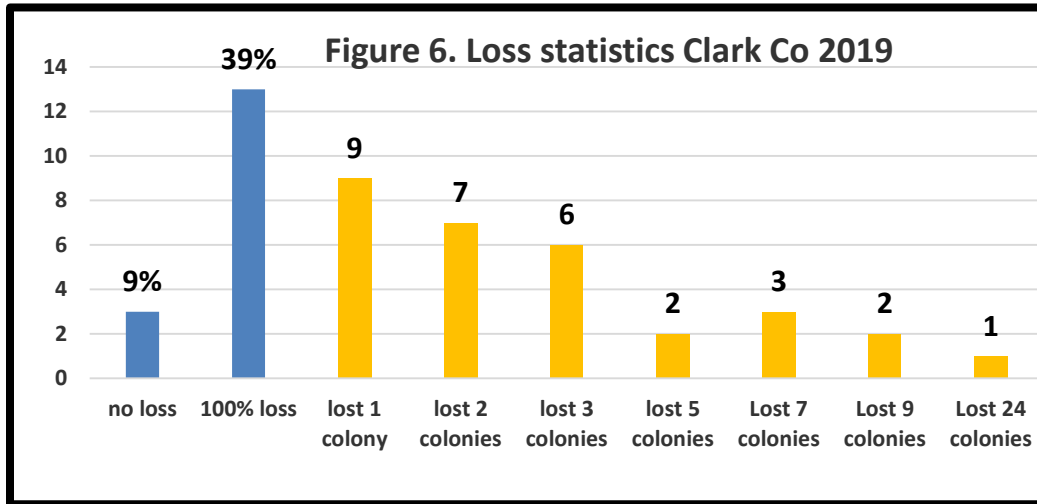
Figure 4 shows number of Clark Co responses ( ) and percent loss for past five seasons. Trend line red.



The 33 Clark Co respondents to the electronic survey (22 more than the previous year) were almost exclusively single digit colony owners with 5 individuals (15%) keeping 10 or more colonies (highest numbers 21 and 25 colonies). Two individuals had 1 colony, 10 had 2 colonies and 6 had 3 colonies (54.4% of total individuals). Twelve individuals (36%) had 1, 2 or 3 years of experience and 7 had 4 to 6 years of experience and 7 had 10+ years with 20 and 25 years the greatest. Figure 5 shows colony number and respondent years of experience for Clark Co respondents.



**Colony Losses.** For the 33 respondent Clark beekeepers, 3 individuals (9%) had no loss but 13 individuals (=39%) loss all their colonies. Nine individuals lost 1 colony, 7 individuals lost 2 colonies and 6 lost 3. Three individuals lost 7 colonies and 2 lost 9. Heaviest loss was 24 colonies.



**Self-reported “reasons” for colony losses:** One survey question asked respondents to check the “reasons” for winter loss; multiple responses were possible. There were a total of 66 selections (2.2/individual) provided by Clark County respondents as the reasons for their overwintering losses. Varroa mites was most commonly chosen by both Clark and statewide beekeepers followed by both Poor wintering conditions and weak in fall, again both for Clark and statewide beekeepers. Under other, CCD (4 Clark individuals and 9 additional statewide) and Nosema (1 Clark and 3 additional statewide) were most common choices

	Varroa mites	Poor wintering conditions	Weak in fall	Queen failure	Starvation	pesticides	Yellow jackets	Other
Clark #	11	10	10	5	6	2	9	6
Co %	(37%)	(33%)	(33%)	(17%)	(20%)	(7%)	(30%)	(20%)
Statewide %	33%	28.5%	32%	23%	21.5%	7%	28.5%	28.5%

**Acceptable loss.** When asked to choose an acceptable loss Clark Co mirrored statewide respondents. Greatest % selection was 25%, both for Clark Co and Statewide. Medium number for Clark was 25%; statewide 20%.

Don't know	None 0%	5%	10%	15%	20%	25%	33%	50%	75%	Total 100%
Clark CO 0	6	1	3	0	4	7 MED	6	4	2	0
Statewide 2	12	7	10	4	16 MED	21	12	8	3	1

**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](http://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. Clark Co individual choices varied from zero to 75%, with medium of 25%. 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.**

## **Part 2: Management selections and losses**

We asked in the survey for information about some managements practiced by respondents. Multiple responses were accepted. The survey inquired about feeding practices, wintering preparations, sanitation measures utilized, screen bottom board usage, mite monitoring, both non-chemical and chemical mite control techniques and queens. Respondents could select options and there was always a none and other selection possible.

This analysis seeks to compare responses of this past season to previous survey years. This requires further data crunching and analysis. 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