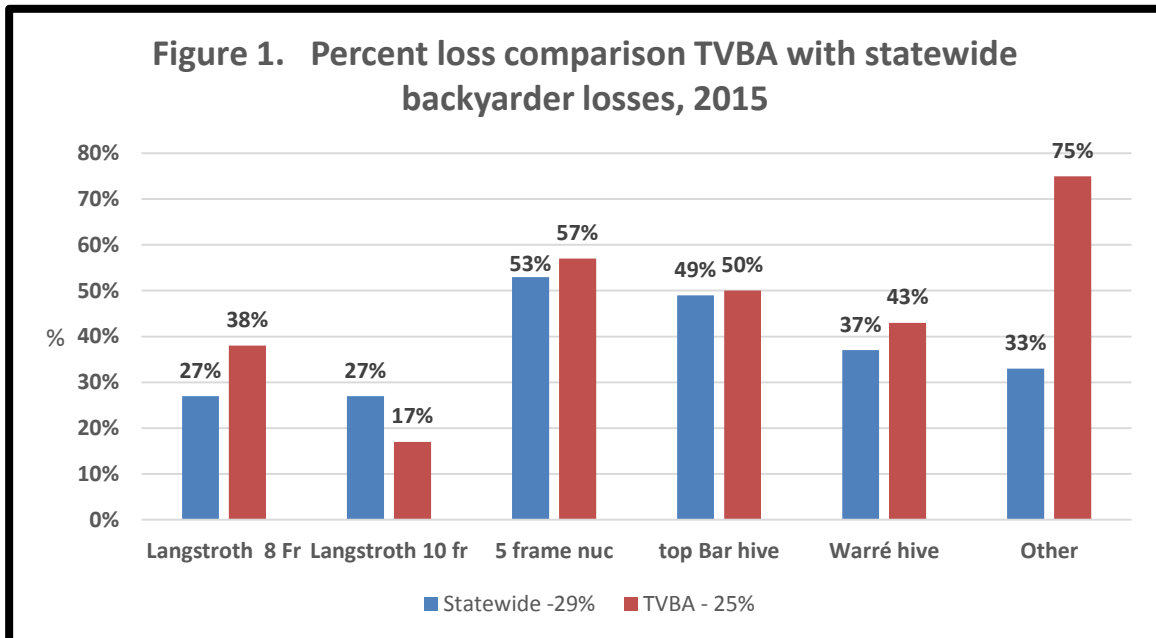


## 2015 Tualatin Valley Winter Loss by Dewey M. Caron with statistical assistance of Jenai Fitzpatrick

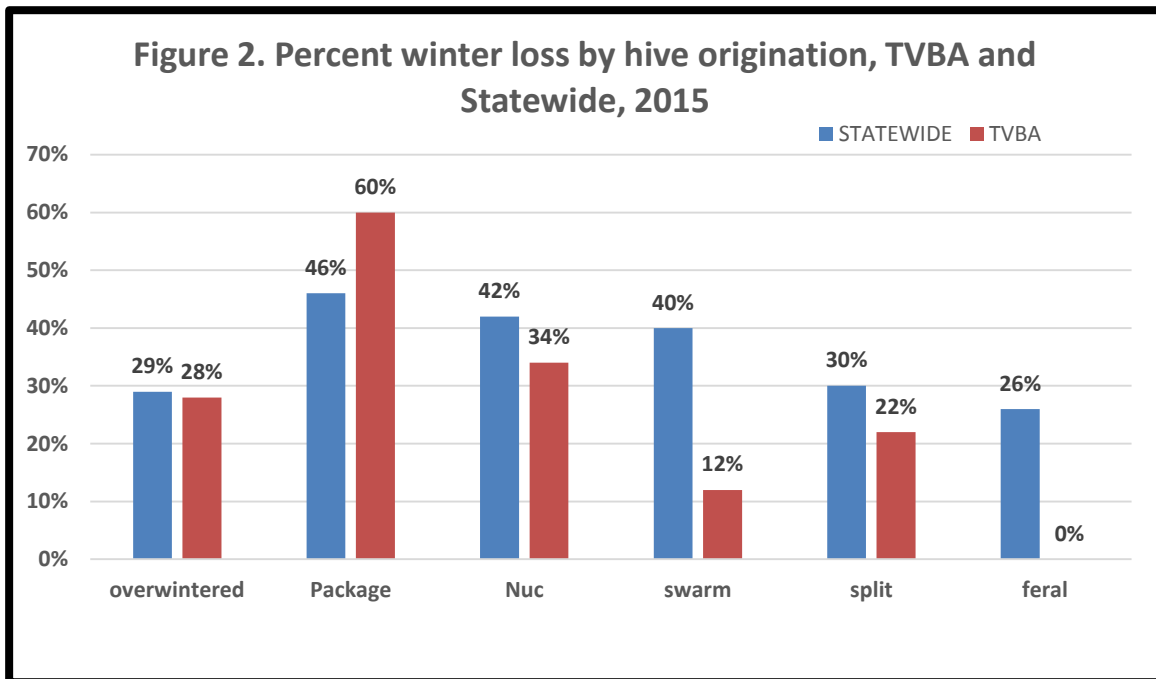
At the March 31<sup>st</sup> TVBA meeting I distributed paper copies of the 2014-2015 overwintering loss survey and directed members to a web-based survey document (posted at [www.pnwhoneybeesurvey.com](http://www.pnwhoneybeesurvey.com)). Such survey activity is a continuing effort to define overwintering success, now the 8<sup>th</sup> spring survey. I received 230 responses from OR backyarders, keeping anywhere from 1 to 50 colonies; TVBA members sent in 30 surveys, 35% fewer than for last year's survey. Colony numbers included in analysis this survey year is only 6% fewer than last year.

Overwintering losses of TVBA respondents was 40 colonies = 25%, slightly lower than the statewide loss of 29% (database of 230 OR backyarders.) Percent losses, determined for 6 hive types, is shown in Figure 1 comparing TVBA with the statewide backyarders. TVBA member respondents started winter with 117 Langstroth 10-frame and 117 Langstroth 8-frame hives (88% of total), 7 5-frame nucs, 2 Top bar hives, 7 Warré and 4 "other" hive types. Loss of Langstroth 10-frame hives (17%) was 37% lower compared to statewide beekeepers, with nuc, top bar and Warré hive losses very similar. Only 1 of 4 (2 feral and 2 long hives) colonies survived the winter.

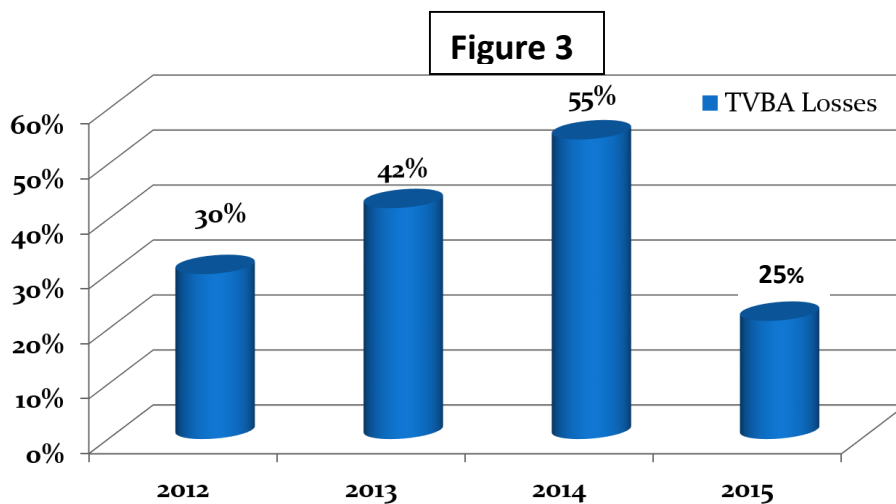


The survey also asked for hive loss by hive origination. Thirty-nine of 44 overwintered TVBA member colonies were alive in the spring (28% loss rate), similar to statewide (29%) overwintering colonies.

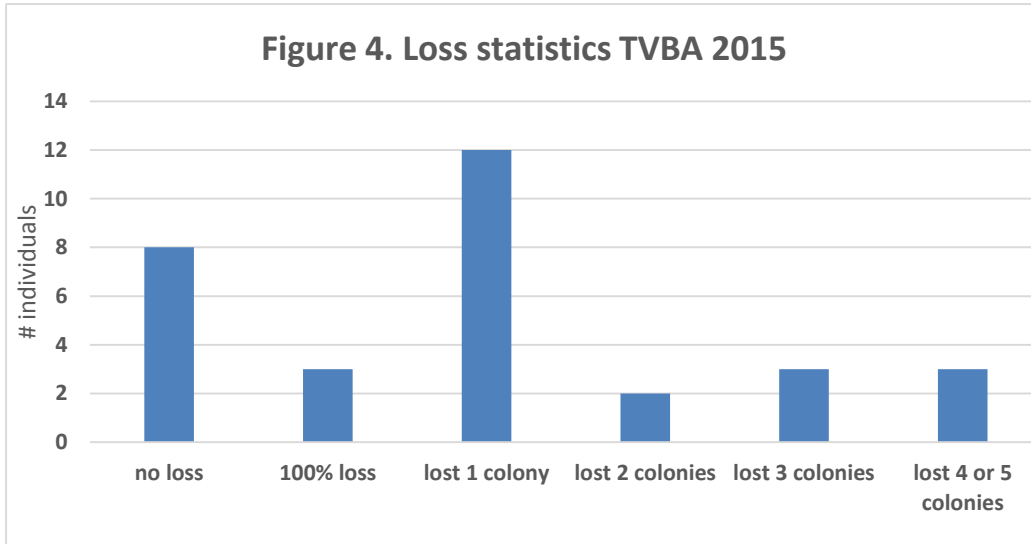
Respondents reported a higher loss level of newly installed packages (60%) with lower loss rates for nucs, swarm captures and splits. No feral colony transfers were reported. See Figure 2.



Losses this past winter, based on the 20 survey respondents, were much lower compared to the terribly elevated losses of the previous winter (55%) (see [www.pnwhoneybeesurvey.com](http://www.pnwhoneybeesurvey.com) for last year's report) for TVBA beekeepers and statewide (last year 48% statewide). The loss rate of 25% was considerably below the average of the previous three seasons (42%) as illustrated in Figure 3 below.

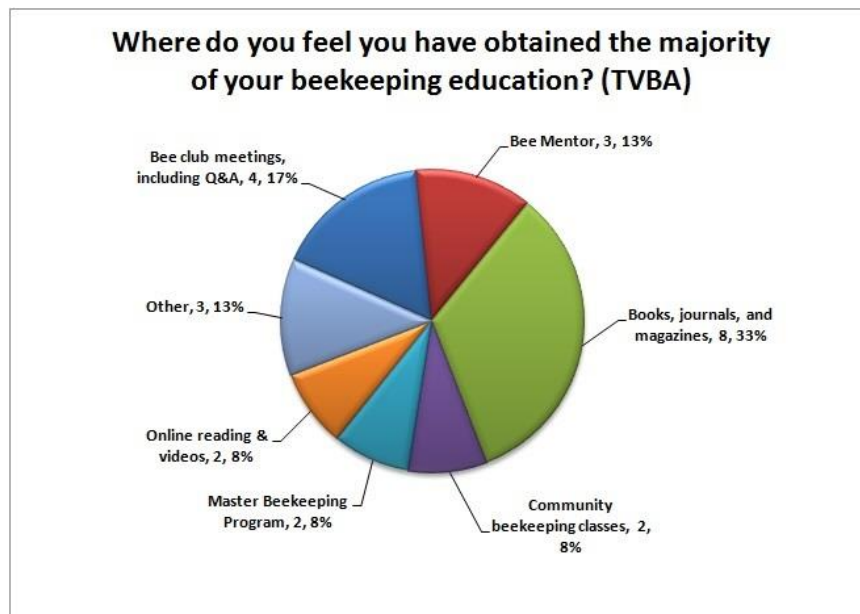


Not everyone had loss. Eight individuals (27%) reported total winter survival compared to 48% statewide; 3 individuals lost 100% of their colonies. Twelve individuals lost 1 colony 2 lost 2 colonies, 4 lost 3 colonies and three lost 4 or 5 colonies; heaviest loss was 5 colonies. Data shown graphically below in Figure 3. Seventy-two percent indicated acceptable overwinter loss as zero or 5-15%.



Twenty-five TVBA respondents had 1, 2 or 3 colonies (80%); the largest number was 50. Only three individuals had more than one apiary location. Three of the 320 individuals moved bees during the year, one for better forage, one for residence move and the third due to neighbor “issues”.

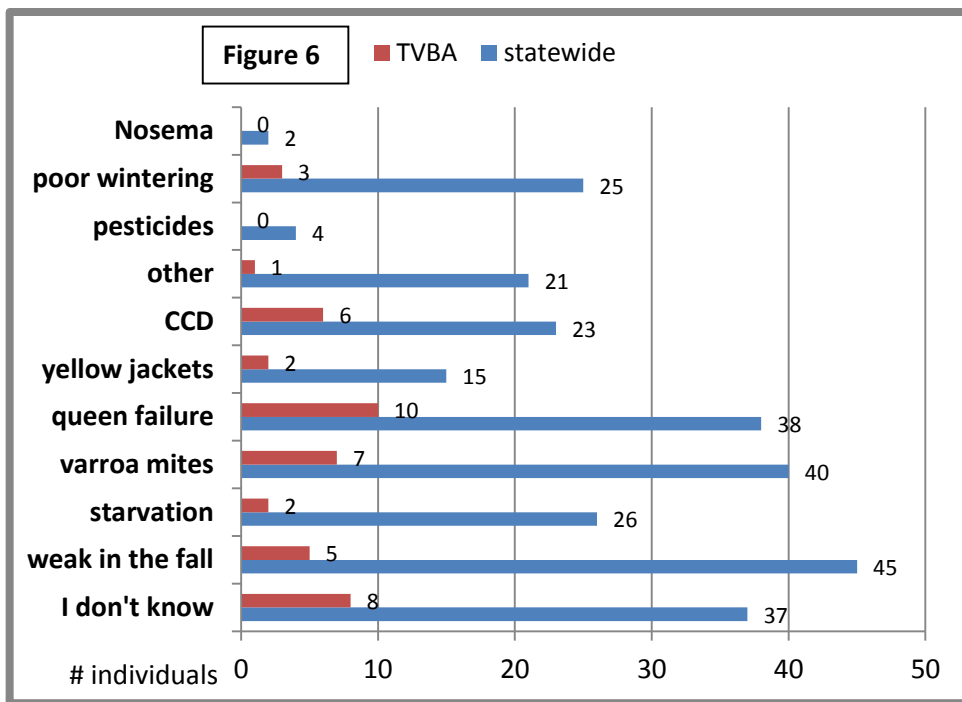
When asked to indicate where the majority of their beekeeping education was received, TVBA respondent numbers varied only slightly from statewide, with club meetings listed by 17% and Master Beekeeping program by 8% - both lower compared to statewide respondents (26% and 12% respectively).



Twenty (67%) of TVBA respondents said they had a mentor available as they were learning beekeeping; statewide 69% said they had a mentor. TVBA survey respondents reported a wide range of beekeeping experience. Ten individuals (35%) had 5 years or more of bee experience, with the highest 60 years; 15 (52%) had 1, 2 or 3 years of experience.

We asked for individuals that had colony loss to estimate what the reason might have been. Multiple responses were permitted. Of 276 statewide responses, 45 chose weak in the fall (16%), 40 selected Varroa mites (15%) and 14% said queen failure.

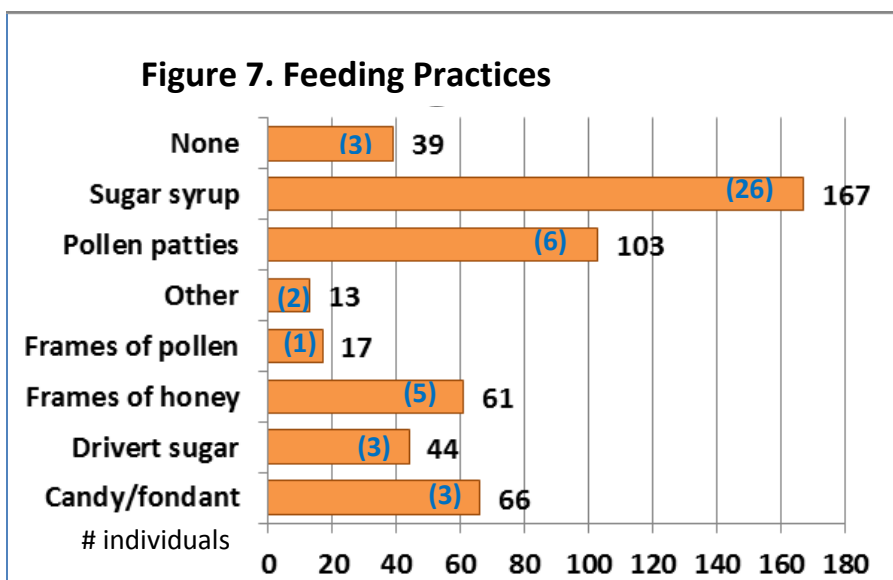
I don't know was also 14%. The 43 TVBA responses were similar choices with queen failure, varroa and don't know the most popular. Weak in fall and CCD had similar levels. See Figure 6.



### General hive practices

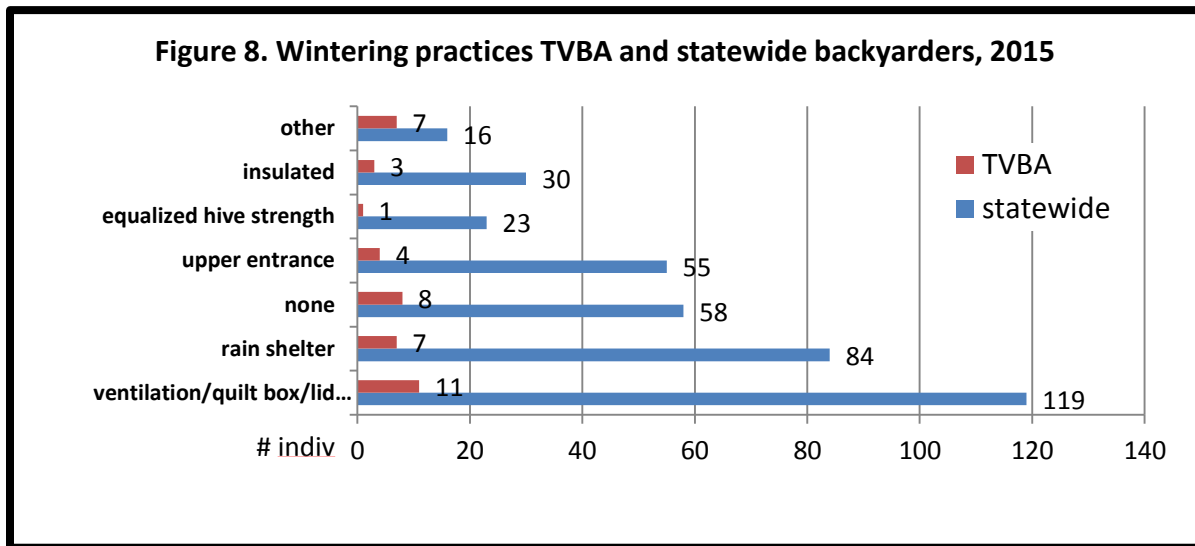
We asked in the survey for information about some managements practiced by respondents. Multiple responses were encouraged.

**Feedings:** The number of statewide responses (510 total) are shown in bar graph below (Figure 7). Thirty nine individuals (8% of total) did not do any of the options offered. Sugar syrup (33%) and pollen patties (20%) feeding were the most common managements. Feeding fondant/candy (13%) and providing frames of honey (12%) were next most common with drivert and frames of pollen less commonly fed. Under "other," dry



sugar or dry pollen or honey as a liquid were indicated. TVBA responses shown as (# indiv ) mirror the statewide responses.

**WINTERING PRACTICES:** We received 385 responses about wintering management practices statewide and 41 from TVBA members (more than one option could be chosen). Fifteen percent (15%) of statewide and 20% of TVBA responses indicated none of the several listed wintering practices was done. The most common wintering management selected was ventilation/use of a quilt box/lid insulation (31% statewide, 27% for TVBA). Use of a rain shelter was next most common (22% statewide, 17% TVBA). Providing upper entrance access for bees was indicated for 4 TVBA respondents. See Figure 8.



Some choices were not mutually exclusive and this question needs to be revised for a subsequent survey season. Additional items listed by TVBA included using cedar lumber for box or lid construction or use of lid with moisture trap or special insulated cover. One TVBA individual indicated tilting hives forward and tying colonies down. Statewide use of a wintering shed, adding mouse guard and providing a winter wind break were also included.

**SANITATION PRACTICES:** It is critical that we practice some basic sanitation in our bee care. We probably do too little to help insure healthy bees. We received 440 responses for this survey question. Ten percent said they did not practice any of the 8 offered alternatives. Screen bottom board use (38%) was the most common option selected – this was encouraging because bees need to get rid of diseased brood, pests and other potential negatives from within their hive. The screen bottom helps promote a “garbage pit” for getting potentially harmful organisms and materials out of the hive. The next most common selection was minimal hive intervention (15% of responses). Less intervention means less opportunity to compromise sanitation of a hive; needless inspections/manipulations can only interfere with what the bees are doing to stay healthy. As caring bee stewards we should believe we can do our inspections without necessarily compromising bee colony health. Apiary site selection (8%) was slightly

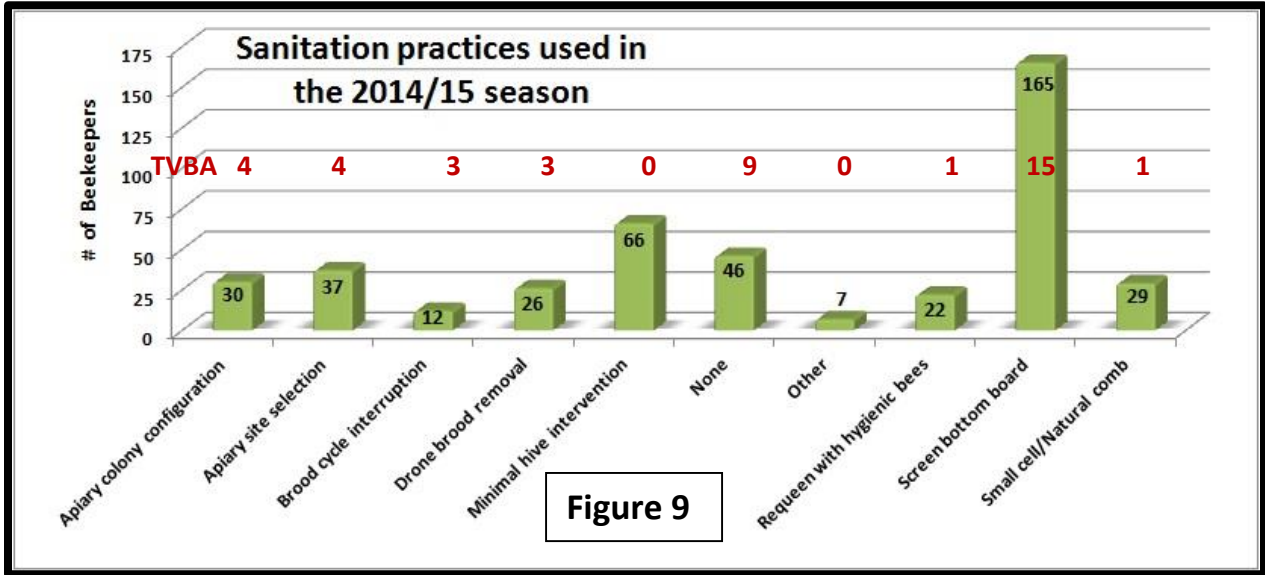
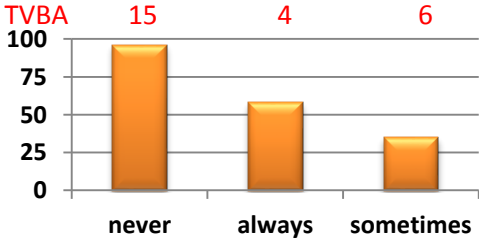


Figure 9

more common as a choice compared with small cell/natural brood, apiary colony configuration, drone brood removal and requeening with hygienic bees (7% to 5%). TVBA sanitation selections, 50 total, are shown in red line at 100 beekeepers, were screen bottom board (15 of 20 individuals), 0 who listed minimal hive intervention and 3 who said they did drone brood removal. All other selections were 1, 2 or 3 individuals; nobody indicted minimal hive intervention. Figure 9 above.

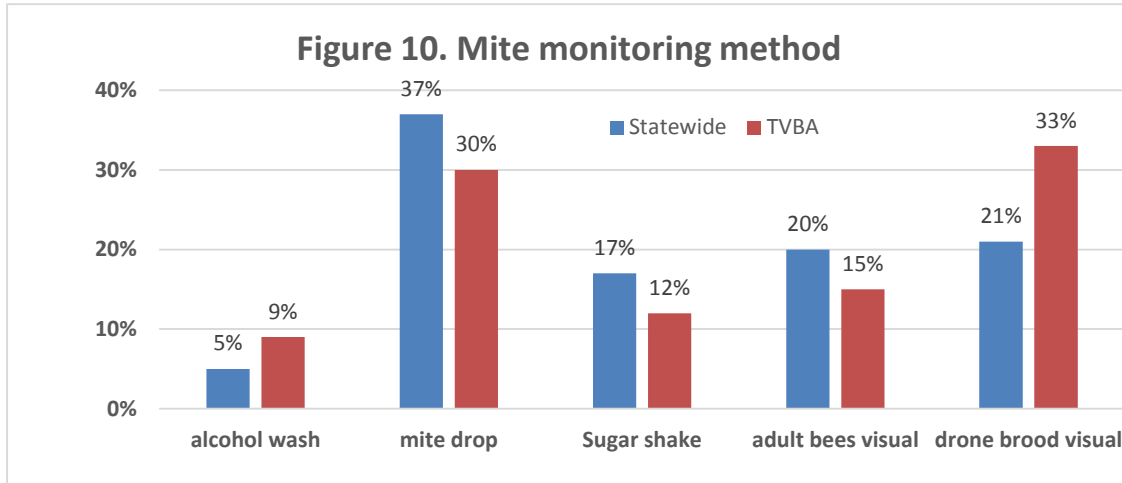
Other sanitation measures listed were cleaning of hive tool between inspections, planting medicinal plants in apiary and replacing/cleaning moldy boxes/frames. What we intend to do is compare individuals who had heavier winter losses with those who did not have losses and their responses to these three categories of feeding, wintering and sanitation.

**Screen bottom boards:** In our national BIP surveys, fully 95% of respondents indicate they have modified colony bottom boards and now use a screen bottom board. We asked what percentage of hives had screen bottom boards and whether they were blocked during the winter. Statewide 21% said they did not use screened bottoms; for TVBA members only 8 individuals (27%) said they did not use them. Statewide 66% used them on all their hives while 80% of TVBA beekeepers using Screen bottom boards used on all their hives. The majority statewide (51%) and in TVBA (60%) left them open over the winter period (never response). 18% statewide and 24% in TVBA sometimes blocked them and 31% statewide and 16% TVBA beekeepers closed them during the winter (TVBA in red below).



## Mite monitoring/sampling and control management

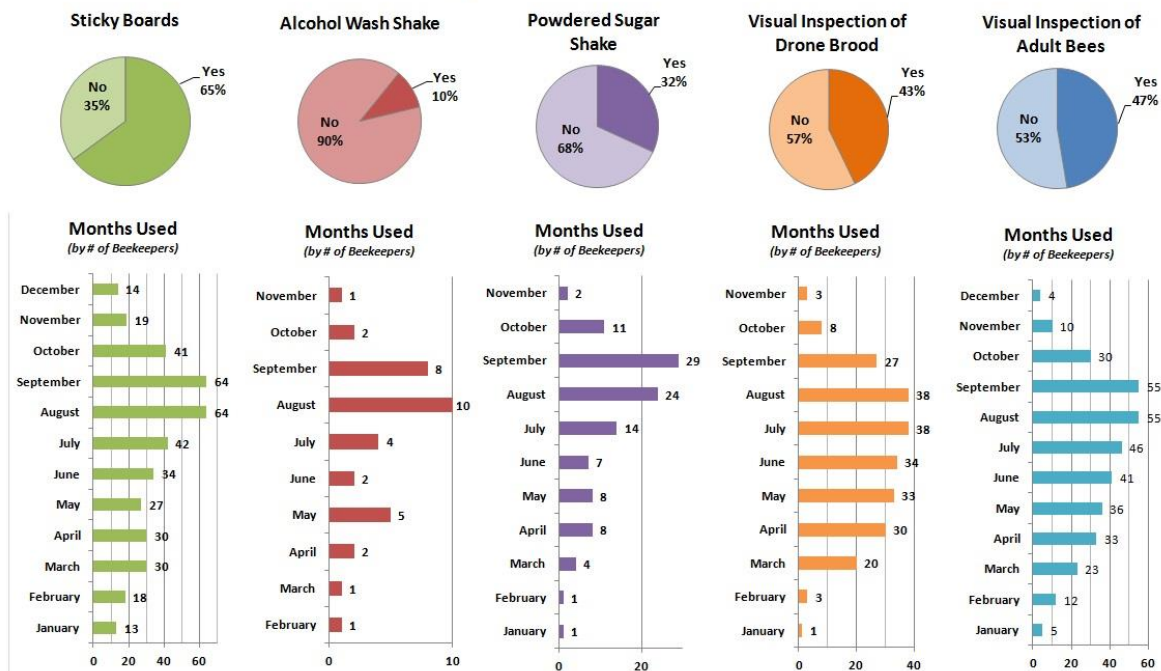
We asked percentage of hives monitored for mites during the 2014 year and/or overwinter, whether sampling was pre- or post-treatment or for both pre and post-treatment and by which of the 5 possible



sampling methods was that tool used. In order of popularity of use, statewide sticky boards was used by 37% (for TVBA 30%), with alcohol wash, visual inspection of adults and drone brood about the same statewide and for TVBA members, drone visual inspection and adult visual inspections were followed by washing adults with powdered sugar shake and alcohol washing. Figure 10. Most sampling was done in August September and October as might be expected (Figure 11).

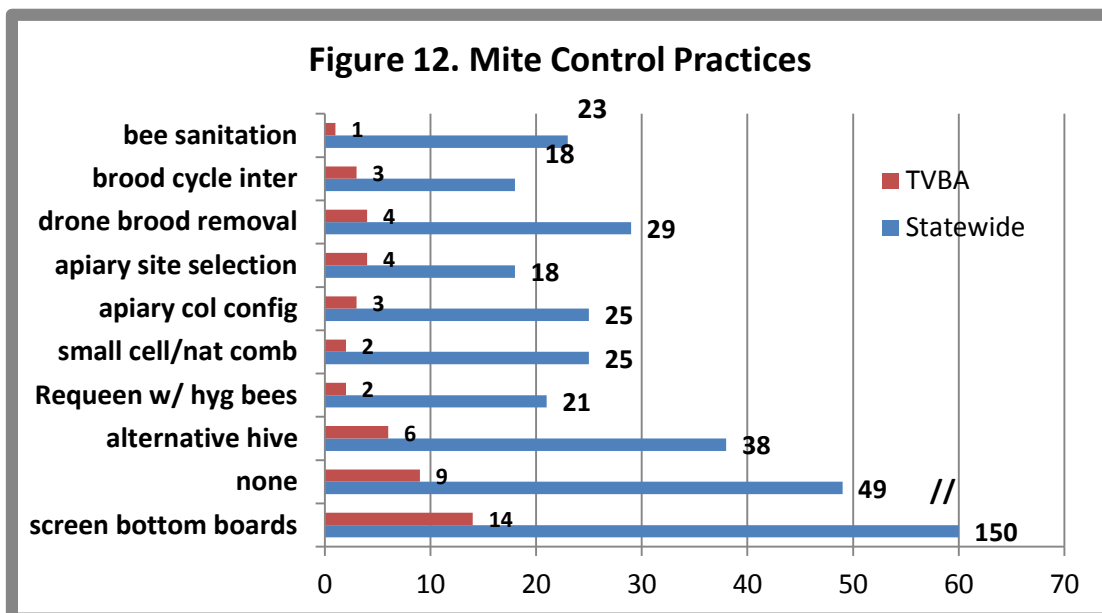
**Figure 11**

## Use and Timing of Mite Monitoring Methods

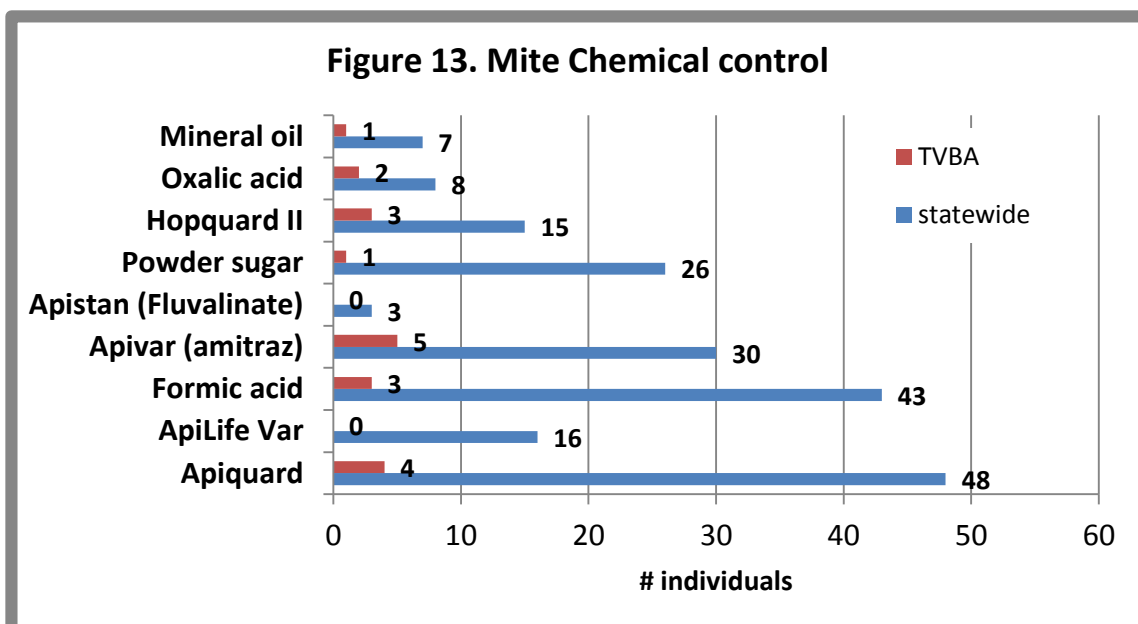


## Use of medications and control treatments

**Non-Chemical control:** We asked about general mite treatments and also about use of chemicals for mite control. Under general controls, 12% (49 individuals) said none of the 9 alternatives was used; 4 individuals said same in TVBA. For the respondents statewide who checked at least one (more than one selection was permitted), use of screened bottom board was listed by 150 individuals (42% of respondents) who did indicate use of at least one of the techniques. The next most common selection was use of an alternate hive (11%). The remaining 7 selections were indicated by fewer than 30 individuals each. The responses for TVBA individuals closely mirrored those of the statewide respondents as shown in graph below. Sixty percent of TVBA respondents had more than one choice.

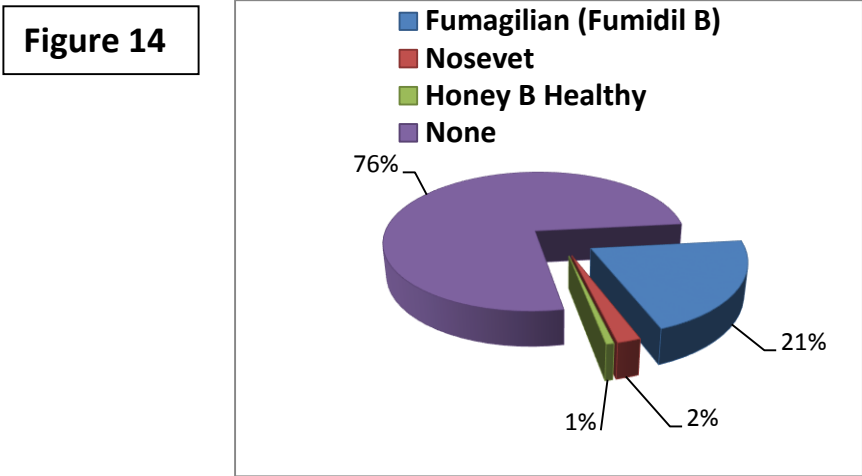


**Chemical control:** For chemical control there were 215 statewide responses, 19 by TVBA members. Apivar (26%) followed by Apiguard (21%), then MAQS, formic acid strips and Hopguard, both utilized by 3 individuals (16%). 15 did not indicate use of any material (50%). Others as shown in Figure 13.

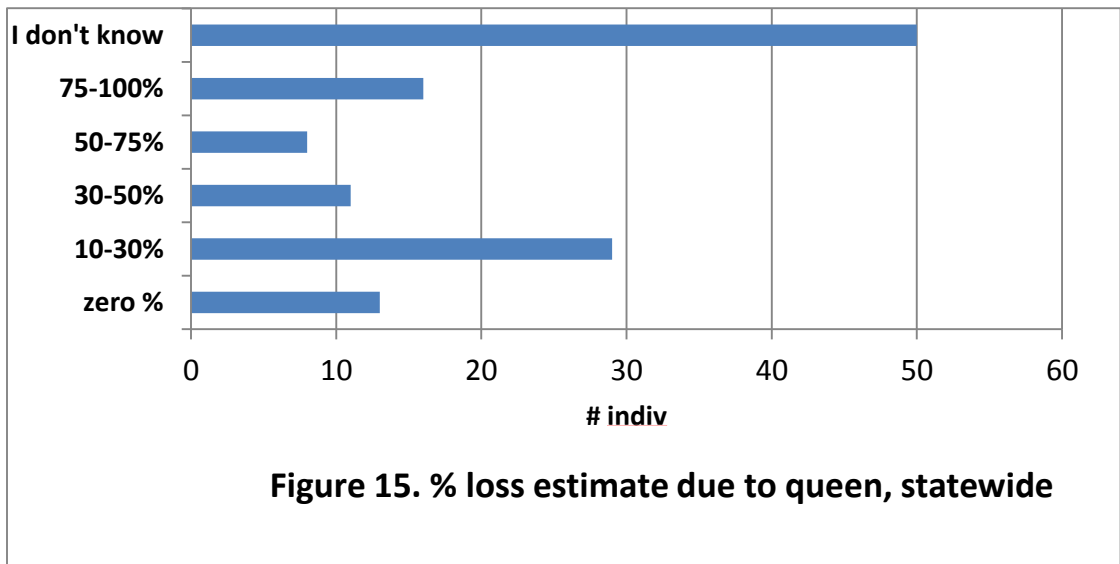




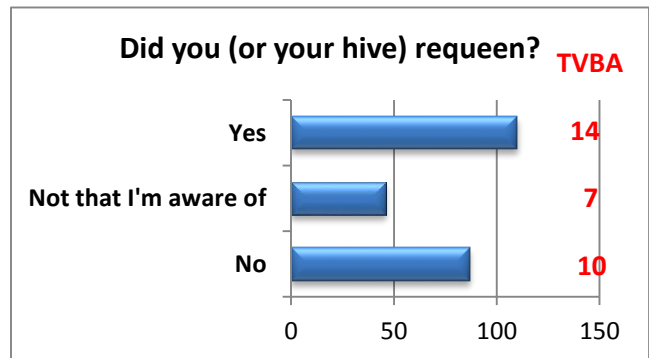
Six individuals of 144 that responded statewide (4%) indicated they treated with terramycin for foulbrood disease, one was a TVBA member. Thirty individuals (21%) indicated use of Fumigillin for Nosema disease control, 3 in TVBA. Three individuals in state indicated use of Nosevet and another indicated use of Honey Bee Healthy. See Figure 14



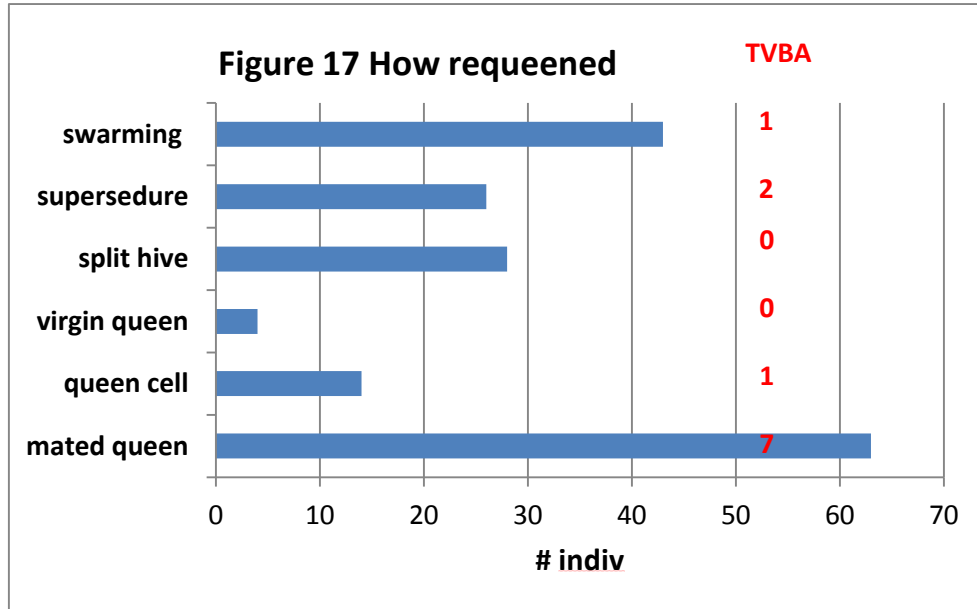
We are not satisfied with our questions about queens on this year's survey. We asked what percentage of colonies lost died because of queen problems. The largest response statewide was I don't know (39%) followed by 10-30% at 23%. See Figure 16. TVBA responses were similar.



Our subsequent questions asked "Did you, or did your hive requeen, in any form during the year". Of 243 responses, 87 (36%) said no, 46 said 'Not that they were aware of' (19%) and 110 (45%) responded yes. TVBA responses are shown in red.



One hundred seventy seven individuals responded to the question " If you did requeen, how did you do it." The largest response was mated queen introduced (34.5%) followed by colony swarmed (24%). TVBA responses are shown in red. We are not sure how to interpret the responses to these three questions. They will be modified in a subsequent survey instrument.



## Summary

As indicated we will further analyze the loss by managements (feeding/wintering practices/sanitation) as well as losses relative to use of control techniques/chemicals utilized. Some of this information is available on the BeeInformed website ([beeinformed.org](http://beeinformed.org)) and individuals are encouraged to examine that data base as well.

We intend to refine this instrument for another season and hope you will join in response next April. We have a blog on the [pnwhoneybeesurvey.com](http://pnwhoneybeesurvey.com) and will respond to any questions/concerns you might have.

**Thank You to all TVBA Members who participated** – if you find any of this information of value please consider adding your voice to the survey in a subsequent season.