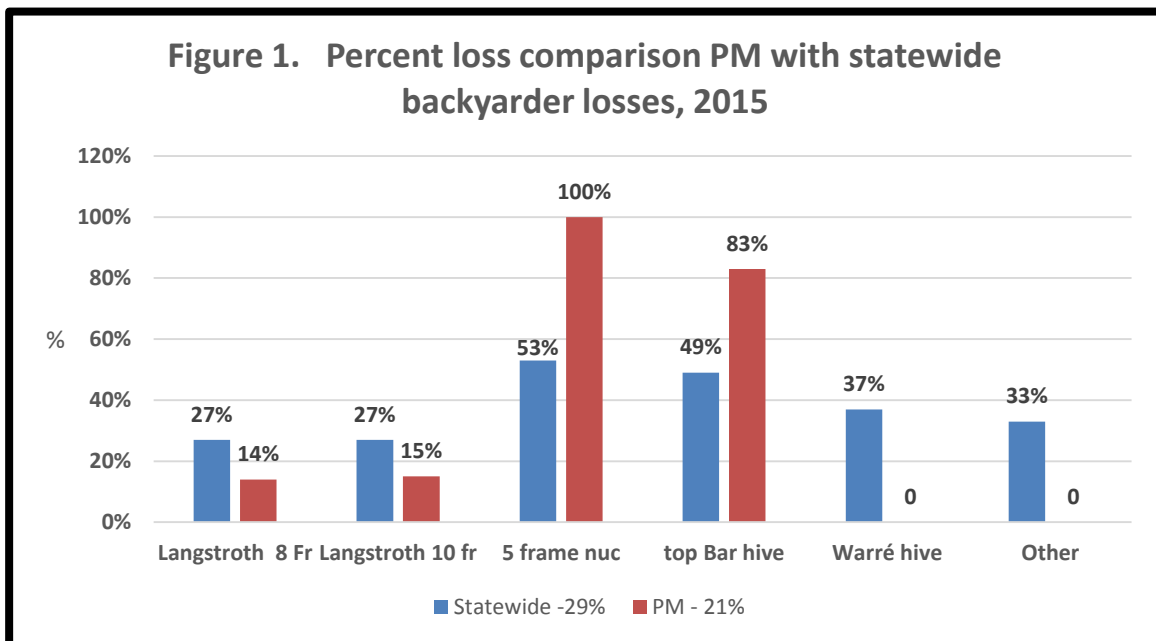


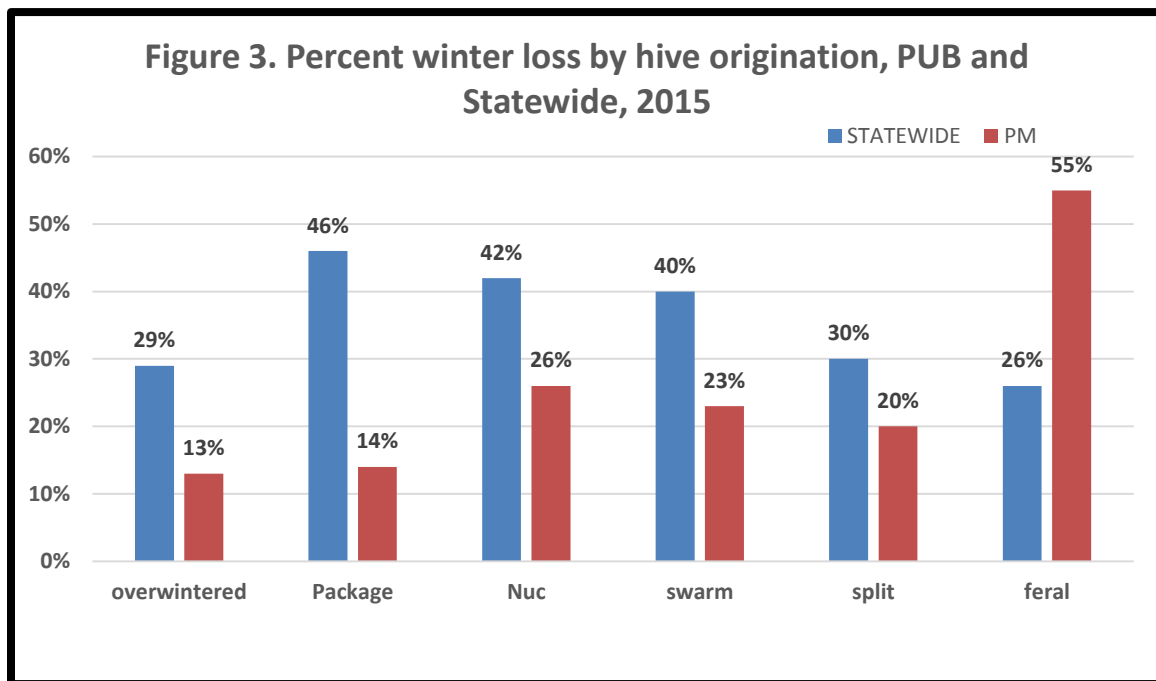
2015 Portland Metro Winter Loss by Dewey M. Caron with statistical assistance of Jenai Fitzpatrick

Paper copies of the 2014-2015 overwintering loss survey were distributed by Joe Maresh at the April meeting and members directed to a web-based survey document as a continuing effort to define overwintering success. This was the 8th year of such survey activity. I received 230 responses from OR backyarders, keeping anywhere from 1 to 50 colonies; Portland Metro members sent in 20 surveys the same number as last year's survey. Colony number this survey year (80) was 35% fewer than last year.

Overwintering losses of PM respondents was 17 colonies = 21%, 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 PM with the statewide backyarders. WVBA member respondents started winter with 66 Langstroth 10-frame and 7 Langstroth 8-frame hives (91% of total), 1 5-frame nuc and 6 Top bar hives but no Warré or other hive types. Loss of Langstroth hives (15%) was ½ that of statewide beekeepers, the single nuc did not survive and 5 of the 6 Top bar hives were lost.

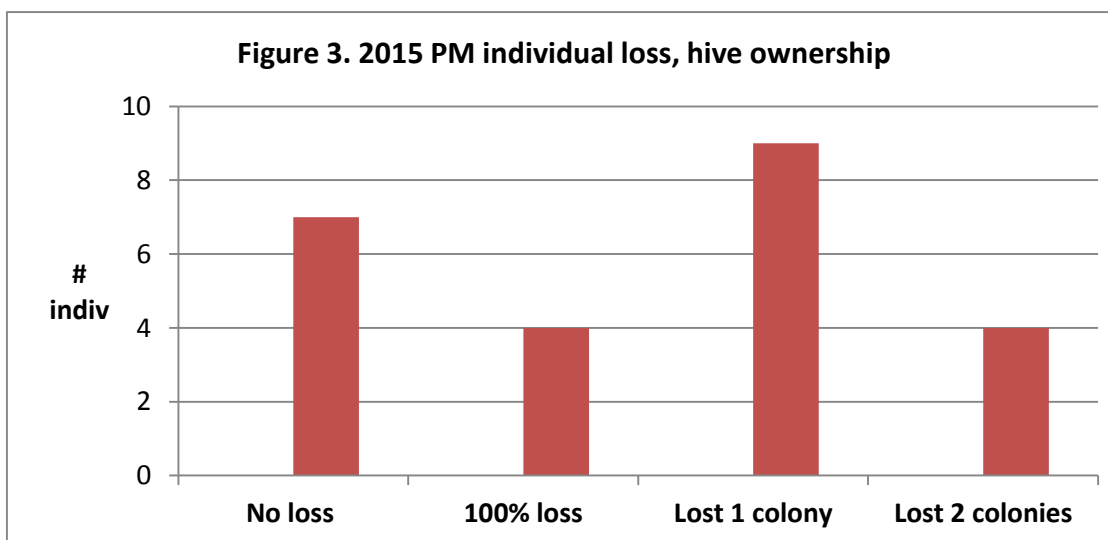


The survey also asked for hive loss by hive origination. Nineteen of 22 overwintered PM colonies were alive in the spring (13% loss rate), a lower loss rate compared to statewide (29%) overwintering colonies. Respondents reported very similar loss levels of newly installed packages (14%) with slightly higher loss rates for nucs, swarm captures and splits. No feral colony transfers were reported. See Figure 2



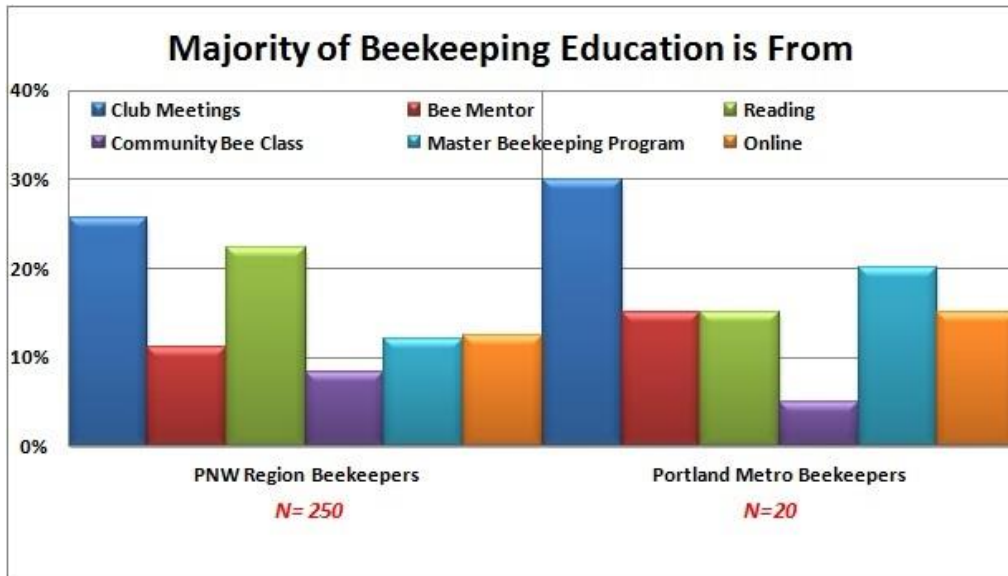
Losses this past winter, based on the 20 survey respondents, were much lower compared to the terribly elevated losses of the previous winter (62%) (see www.pnwhoneybeesurvey.com for last year's report) for PM beekeepers and statewide (last year 48% statewide).

Not everyone had loss. Seven individuals (35%) reported total winter survival compared to 48% statewide; 4 individuals lost 100% of their colonies. Nine individuals lost 1 colony and 4 lost 2 colonies the greatest loss. Data shown graphically below in Figure 3. Seventy-two percent indicated acceptable overwinter loss as zero or 5-15%.

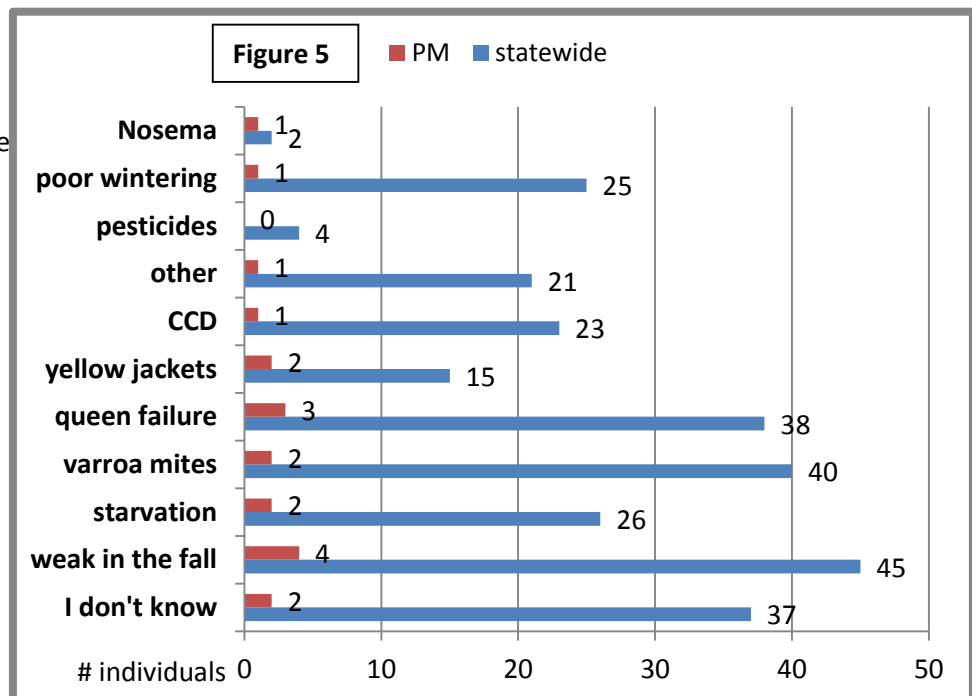


Eight PM respondents had 1 or 2 colonies (40%); the largest number was 15. Only two individuals had more than one apiary location. None of the 20 individuals moved bees during the year.

When asked to indicate where the majority of their beekeeping education was received, PM respondent numbers varied from statewide, with club meetings listed by 30% and Master beekeeping program by 20% - both higher percentages compared to statewide respondents (below Figure 4.) Eleven (55%) of PM respondents said they had a mentor available as they were learning beekeeping; statewide 69% said they had a mentor. PM survey respondents reported a wide range of beekeeping experience. Six individuals (30%) had 7 years or more of bee experience, with the highest 40 years, while 7 (35%) had 1, 2 or 3 years of experience.



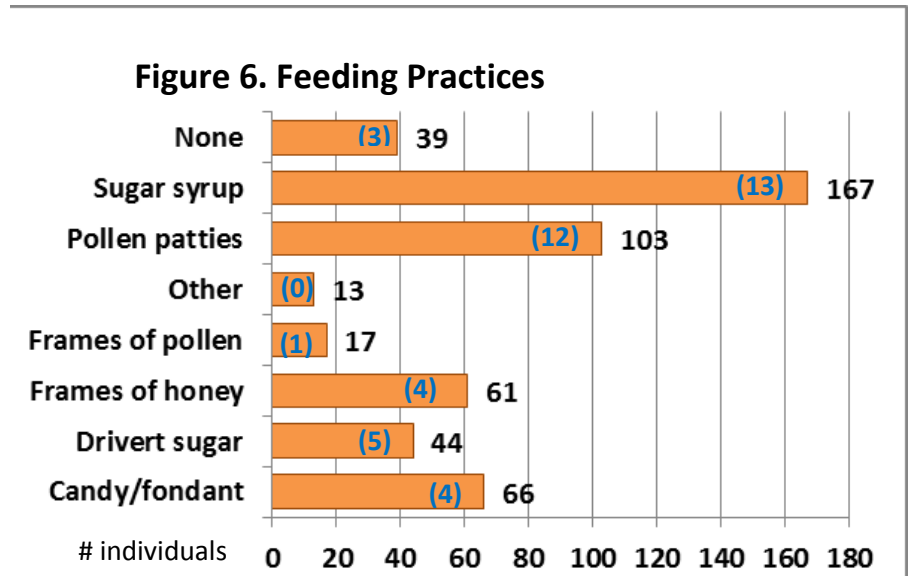
We asked for individuals that had colony loss to estimate what the reason might have been. Multiple responses were permitted. Of 276 statewide responses, 45 chose weak in the fall (16%), 40 selected Varroa mites (15%) and 38 said queen failure (14%). I don't know was also 14%. The 18 response by PM beekeepers were same choices with weak fall and queen failure the top two choices. See Figure 5.



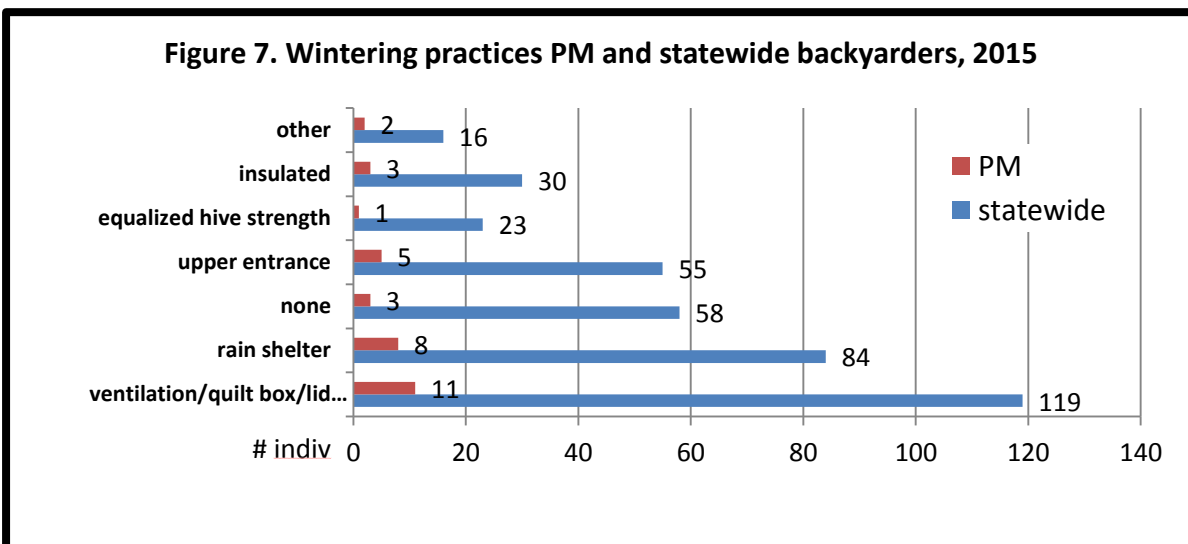
General hive practices

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 6). 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. PM responses shown as (# indiv) mirror the statewide responses.

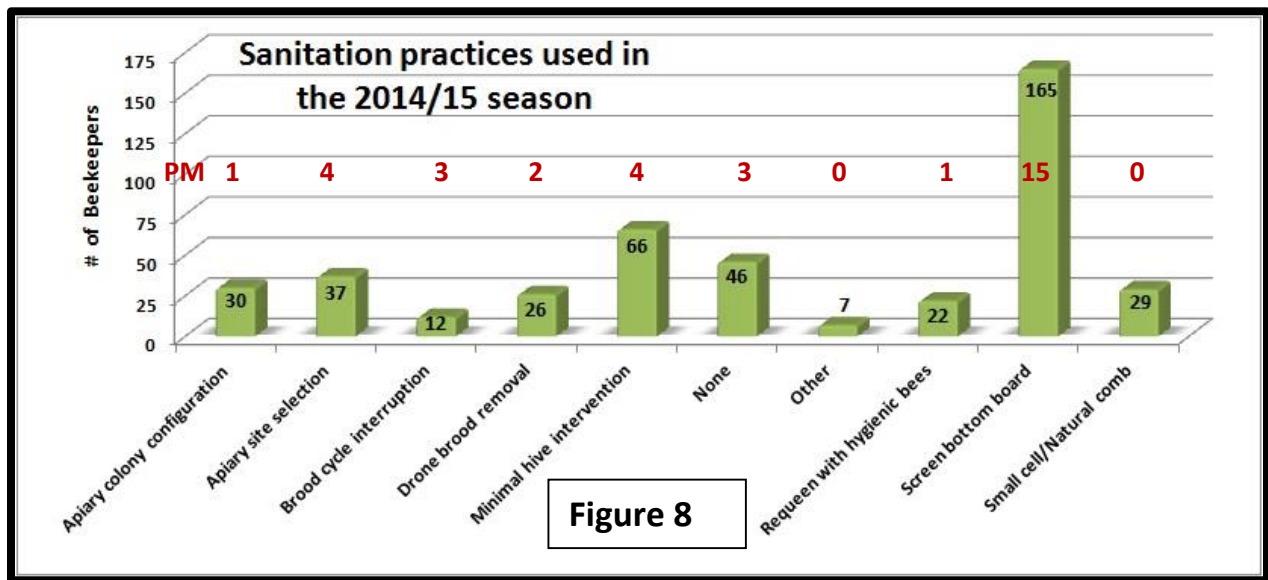


WINTERING PRACTICES: We received 385 responses about wintering management practices statewide and 33 from WVBA members (more than one option could be chosen). Fifteen percent (15%) of statewide and 9% of PM responses indicated none of the several listed wintering practices was done. The most common wintering management selected was ventilation/use of a quilt box/lid insulation (31% statewide, 33% for PM). Use of a rain shelter was next most common (22% statewide, 24% PM). Providing upper entrance access for bees was indicated for 5 PM respondents. See Figure 7 below.



Some choices were not mutually exclusive and this question needs to be revised for a subsequent survey season. Additional items listed statewide included using thicker lumber for box or lid construction or use of lid with moisture trap or special insulated cover. On PM individual indicated reducing winter entrance and another tilting hives forward. Statewide use of a wintering shed, adding mouse guard and providing a winter wind break. Were also included.

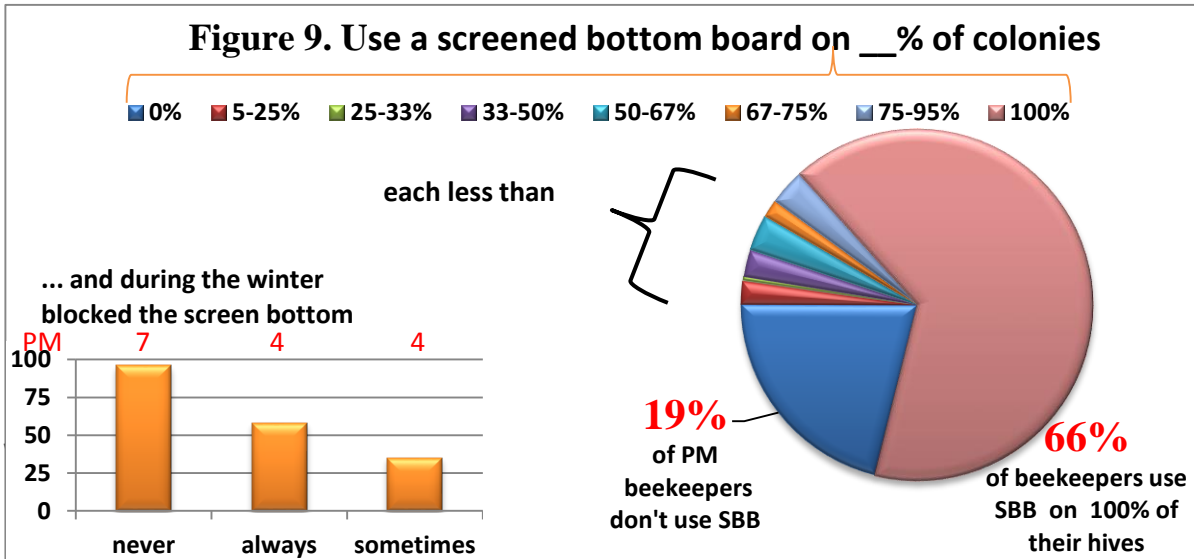
SANITATION PRACTICES: It is critical that we practice some basic sanitation in our bee care. We probably do too little to help insure healthy bees. We received 440 responses for this survey question. Ten percent said they did not practice any of the 8 offered alternatives. Screen bottom board use (38%) 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



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%). PM sanitation selections, 36 total, are shown in red line at 100 beekeepers, were screen bottom board (15 of 20 individuals), 4 who listed minimal hive intervention and 4 who said apiary did drone brood removal. All other selections were 1, 2 or 3 individuals; nobody indicted small cell/natural comb. Figure 8 above.

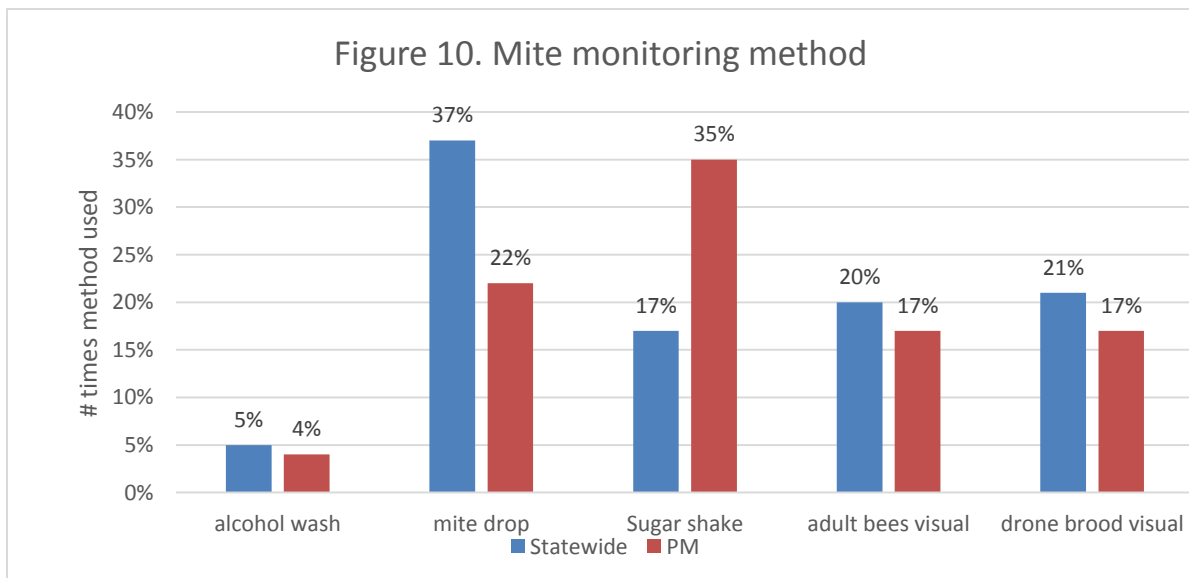
Other sanitation measures listed were cleaning of hive tool between inspections, planting medicinal plants in apiary and replacing/cleaning moldy boxes/frames. What we intend to do is compare individuals who had heavier winter losses with those who did not have losses and their responses to these three 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 PM members only 3 individuals (15%) said they did not use them. Statewide 66% used them on all their hives while 50% of Portland Metro beekeepers using Screen bottom boards in PM used on all their hives. The majority statewide (51%) and in PM (46%) left them open over the winter period (never response). 18% statewide and 27% in PM sometimes blocked them and 31% statewide and 27% Portland Metro beekeepers closed them during the winter .



Mite monitoring/sampling and control management

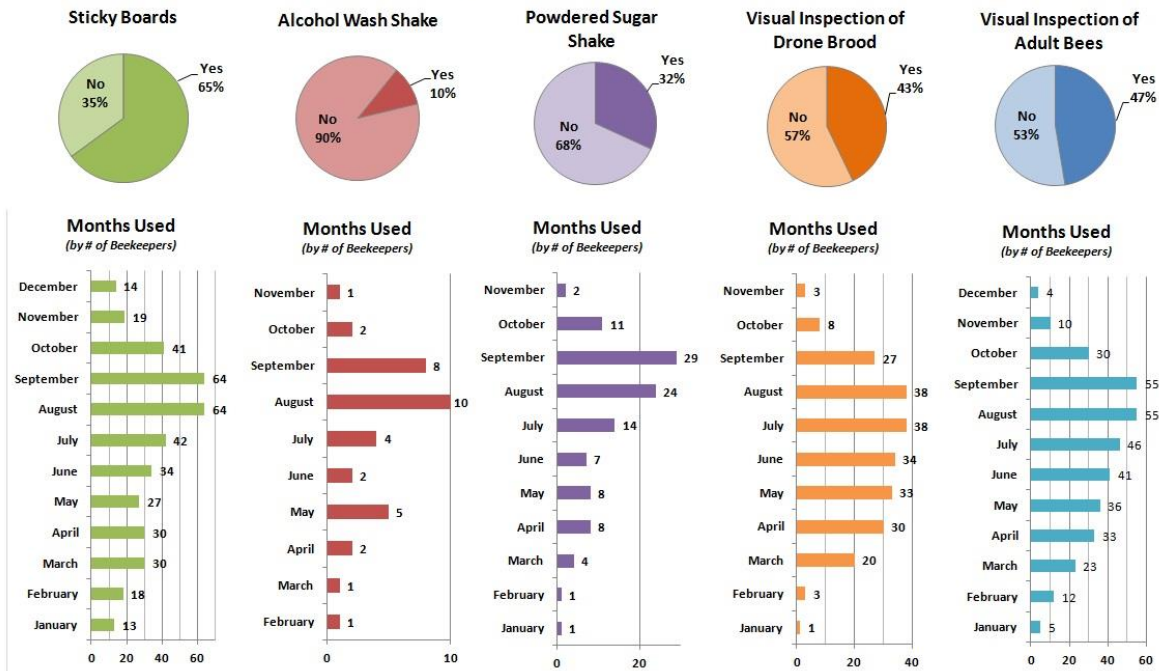
We asked percentage of hives monitored for mites during the 2014 year and/or overwinter, whether sampling was pre- or post-treatment or for both pre and post-treatment and by which of the 5 possible



sampling methods was that tool used. In order of popularity of use, statewide sticky boards was used by 37% (for PM 22%), with alcohol wash, visual inspection of adults and drone brood about the same statewide and for PM members. Washing adults with powdered sugar was indicated twice as frequently by PM members compared to statewide. Figure 10. Most sampling was done in August September and October as might be expected (Figure 11).

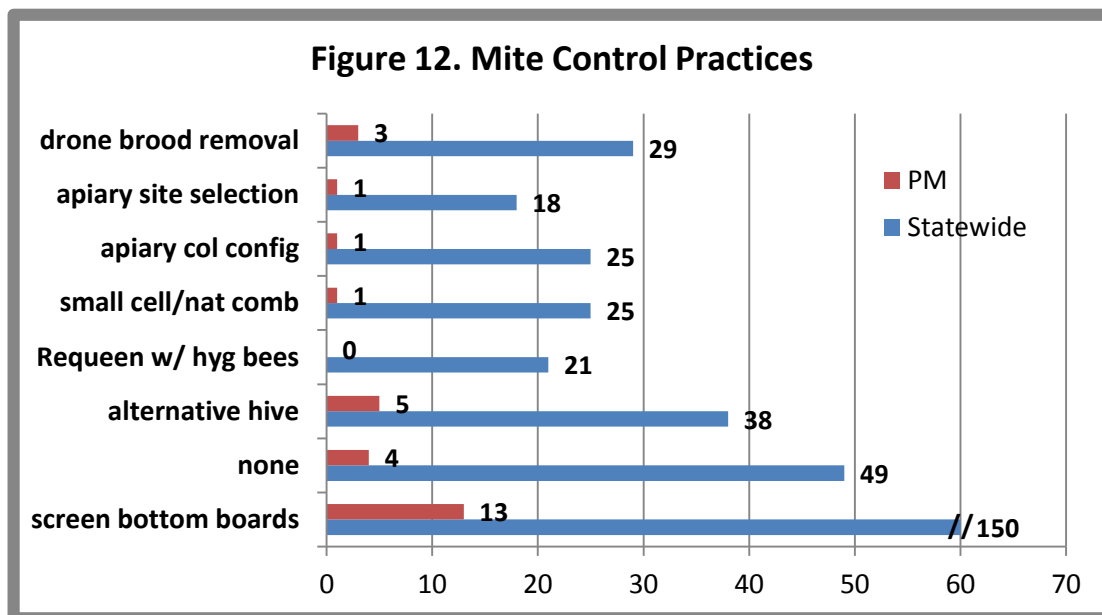
Figure 11

Use and Timing of Mite Monitoring Methods

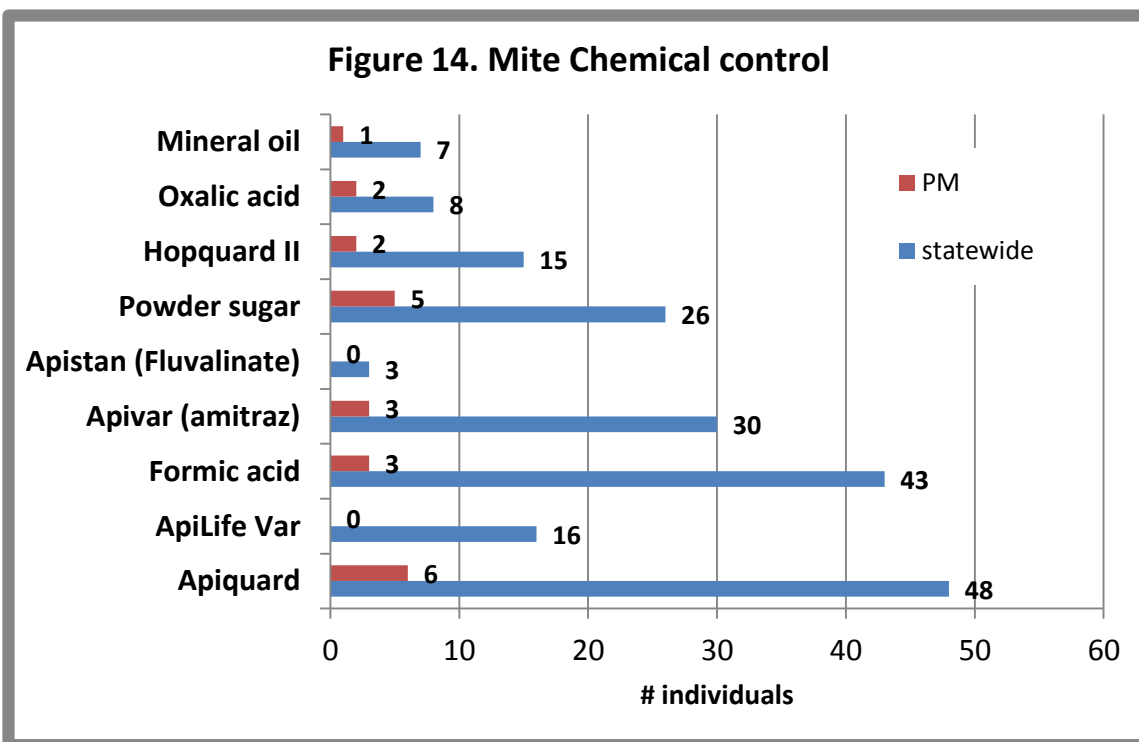


Use of medications and control treatments

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 PM. 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 WVBA individuals closely mirrored those of the statewide respondents as shown in graph below. Sixty percent of Portland Metro respondents used more than one of these practices.

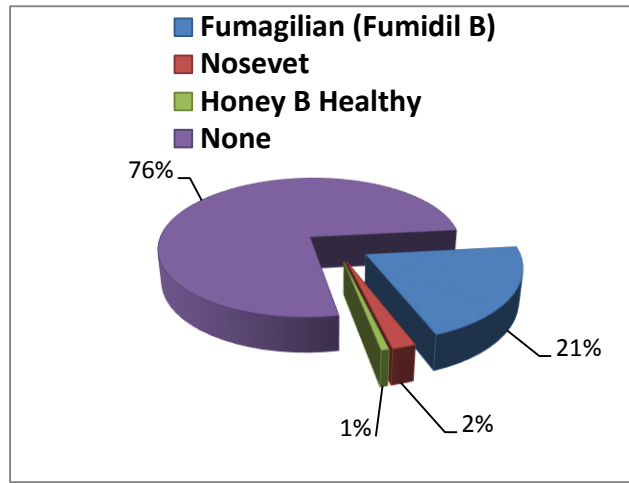


Chemical control: For chemical control there were 215 statewide responses, 29 by PM members. Apiguard (21%), followed by powdered sugaring (17%); amitraz (Apivar) and MAQS, formic acid strips were both utilized by 3 individuals (10%). There were 3 who said they used another essential oil treatment. Others as shown in figure 14.

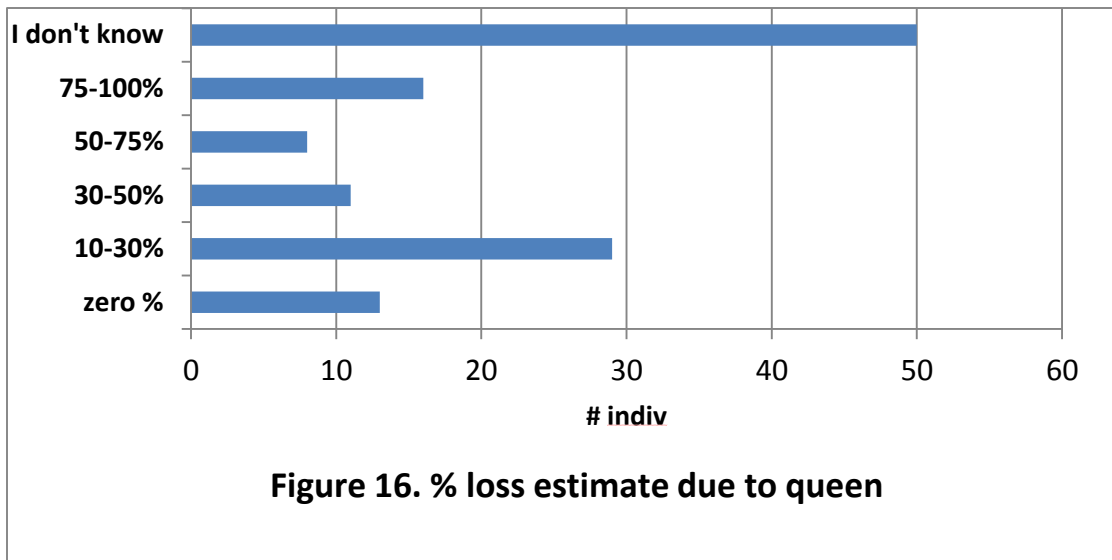


Six individuals of 144 that responded statewide (4%) indicated they treated with terramycin for foulbrood disease, none were PM members although one PM person used Hopguard II. Thirty individuals (21%) indicated use of Fumigillin for Nosema disease control, 3 in PM. One individual in PM indicated use of Nosevet and another indicated use of Honey Bee Healthy. See Figure 15

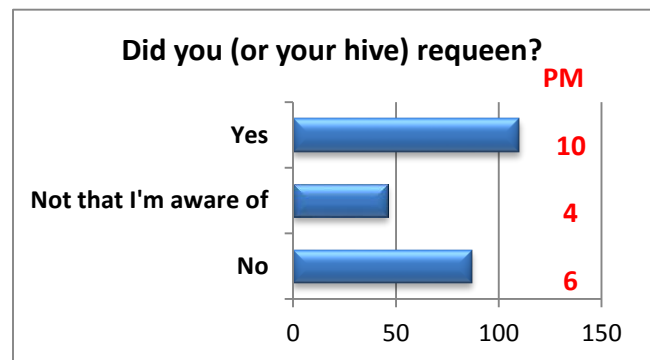
Figure 15



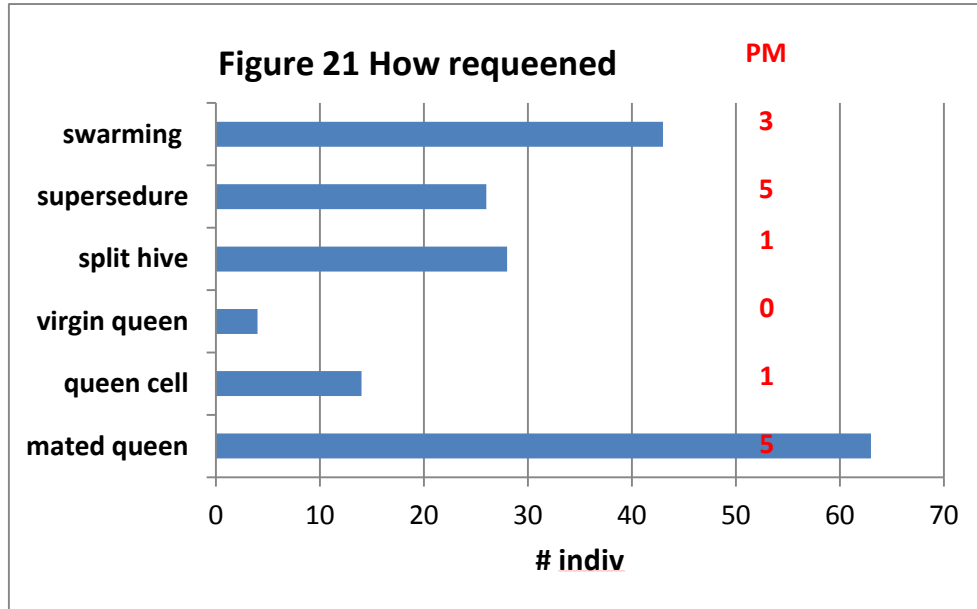
We are not satisfied with our questions about queens on this year's survey. We asked what percentage of colonies lost died because of queen problems. The largest response statewide was I don't know (39%) followed by 10-30% at 23%. See Figure 16. PM responses were similar.



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. PM 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%). PM 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) 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 and will respond to any questions/concerns you might have.

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