2014-2015 Bee Losses
for Lewis Co data from the Pacific North West Honey Bee Loss Survey

presented by

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w/ data geeking by

Jenai Fitzpatrick

http://pnwhoneybeesurvey.com
Beekeeping Education

Where do you feel you have obtained the majority of your beekeeping education?

- Bee club meetings, including Q&A (26%)
- Bee Mentor (11%)
- Books, journals, and magazines (22%)
- Online reading & videos (12%)
- Master Beekeeping Program (12%)
- Community beekeeping classes (9%)
- Other (8%)

Did you have mentoring during your first few years of beekeeping?

- NO (31%)
- YES (69%)

Lewis Co 100%
Lewis County

Majority of Beekeeping Education is From

- Club Meetings
- Reading
- Master Beekeeping Program
- Bee Mentor
- Community Bee Class
- Online

 PNW Region Beekeepers

 Lewis County Beekeepers
42% with 1, or 2 colonies; m=3, avg=4.2 [range 0-50]
45% with 1,2 or 3 years experience, M=4, avg=6 [range 0-60]
2014-15 Colony Losses-18% by Hive Type

% Loss of Colonies by Hive Type

- Langstroth 8-frame: 27%
- Langstroth 10-frame: 27%
- 5-frame nuc: 53%
- Top Bar: 49%
- Warre: 37%
- Other: 33%

Lewis, CO

# spring hives: 1 46 0 1 1 1 = 50
# fall hives: 1 55 0 2 3 1 = 61

Total: 18%
Washington Losses 2015

- lost 0 col
- Lost 1 col
- Lost 2 col
- Lost 4 col
- Lost 5+

Highest 14
- Other: 2, 2, 2
- Lewis Co: 2, 3
- Clark Co: 2, 2, 6

Highest 4
- Other: 0
- Lewis Co: 0, 0
- Clark Co: 1, 1, 2
% Loss by Origination – 48%

(PNW)

<table>
<thead>
<tr>
<th>Category</th>
<th>Overwintered from 2013</th>
<th>Packages</th>
<th>Nucs</th>
<th>Swarms</th>
<th>splits/divides</th>
<th>feral hive transfers/cut outs</th>
</tr>
</thead>
<tbody>
<tr>
<td># spring hives</td>
<td>343</td>
<td>72</td>
<td>97</td>
<td>182</td>
<td>104</td>
<td>28</td>
</tr>
<tr>
<td># fall hives</td>
<td>481</td>
<td>133</td>
<td>168</td>
<td>305</td>
<td>149</td>
<td>38</td>
</tr>
<tr>
<td>(PNW)</td>
<td></td>
<td></td>
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</tbody>
</table>
LEWIS by the numbers

2015 Lewis

- No loss #
- 100% loss
- Lost 1 colony
- Lost 2 colonies
- Lost 3 colonies
- Lost 4 colonies
Total US managed honey bee colonies Loss Estimates

- Acceptable level
- Total Winter Loss
- Total Annual Loss

Winter Loss (%)

- 2006-2007: 30%
- 2007-2008: 45%
- 2008-2009: 30%
- 2009-2010: 25%
- 2010-2011: 20%
- 2011-2012: 25%
- 2012-2013: 30%
- 2013-2014: 35%
- 2014-2015: 42%

9-yr Avg = 37%
23% 9-yr Avg = 29%
2015 Loss Comparisons

<table>
<thead>
<tr>
<th>Category</th>
<th>PNW</th>
<th>WA Comm Semi-comm</th>
<th>WA Backyarder</th>
<th>BIP National</th>
</tr>
</thead>
<tbody>
<tr>
<td># indiv.</td>
<td>41</td>
<td>7</td>
<td>31</td>
<td>6128</td>
</tr>
<tr>
<td>% est. col.</td>
<td>61%</td>
<td>59%</td>
<td>unknown</td>
<td>14.5%</td>
</tr>
</tbody>
</table>

22% 25% 23.1- [39]% WA
8 Years of Comparison

9 yr avg – 29%
8 yr avg – 22%
7-yr avg – 34%

National | PNW Comm-Semi-comm | Backyarder

2008: 36% (National), 30% (PNW Comm-Semi-comm), 40% (Backyarder)
2009: 35% (National), 28% (PNW Comm-Semi-comm), 35% (Backyarder)
2010: 38% (National), 32% (PNW Comm-Semi-comm), 45% (Backyarder)
2011: 34% (National), 28% (PNW Comm-Semi-comm), 34% (Backyarder)
2012: 32% (National), 24% (PNW Comm-Semi-comm), 32% (Backyarder)
2013: 35% (National), 29% (PNW Comm-Semi-comm), 35% (Backyarder)
2014: 40% (National), 35% (PNW Comm-Semi-comm), 45% (Backyarder)
2015: 38% (National), 32% (PNW Comm-Semi-comm), 45% (Backyarder)
Acceptable Loss?

- 0%: 33%
- 5-15%: 1%
- 15-25%: 10%
- 25-50%: 30%
- 50-75%: 26%
Factors of Colony Death

- I don't know: 10%
- No death: 24%
- Nosema disease: 1%
- Other: 6%
- Poor wintering conditions: 7%
- Queen failure: 11%
- Starvation: 7%
- Varroa mites: 11%
- Weak in the fall: 12%
- Yellow jackets: 4%
- CCD: 6%
Use and Timing of Mite Monitoring Methods

- Sticky Boards: Yes 65%, No 35%
- Alcohol Wash Shake: Yes 10%, No 90%
- Powdered Sugar Shake: Yes 32%, No 68%
- Visual Inspection of Drone Brood: Yes 43%, No 57%
- Visual Inspection of Adult Bees: Yes 47%, No 53%

**Months Used (by # of Beekeepers):**

<table>
<thead>
<tr>
<th>Month</th>
<th>December</th>
<th>November</th>
<th>October</th>
<th>September</th>
<th>August</th>
<th>July</th>
<th>June</th>
<th>May</th>
<th>April</th>
<th>March</th>
<th>February</th>
<th>January</th>
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<tbody>
<tr>
<td>Sticky Boards</td>
<td>14</td>
<td>19</td>
<td>41</td>
<td>64</td>
<td>64</td>
<td>42</td>
<td>34</td>
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<td>Alcohol Wash Shake</td>
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<td>0</td>
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<tr>
<td>Powdered Sugar Shake</td>
<td>2</td>
<td>11</td>
<td>29</td>
<td>24</td>
<td>14</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Visual Inspection of Drone Brood</td>
<td>3</td>
<td>8</td>
<td>27</td>
<td>38</td>
<td>38</td>
<td>34</td>
<td>33</td>
<td>36</td>
<td>36</td>
<td>36</td>
<td>3</td>
<td>12</td>
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<tr>
<td>Visual Inspection of Adult Bees</td>
<td>4</td>
<td>10</td>
<td>30</td>
<td>55</td>
<td>55</td>
<td>46</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>36</td>
<td>53</td>
</tr>
</tbody>
</table>

Bar charts and pie charts illustrate the use and timing of mite monitoring methods among beekeepers.
Sampling colony adults

sugar shake

Alcohol wash (window washer fluid)

Keep below 2-5% -- 5mites/100 bees
Feeding, Moisture Control and Ventilation

Moisture will kill bees ...NOT cold!

• Locate hive out of the wind, in sun, protected.
• Use screened bottom boards, top ventilation.
• Feed bees to insure enough food stores

• Use screen tops with moisture collector.
  Burlap
  Straw
  Old Towels
  Etc.
Sanitation Practices

- Small cell/Natural comb: 29
- Screen bottom board: 165
- Requeen with hygienic bees: 22
- Other: 7
- None: 46
- Minimal hive intervention: 66
- Drone brood removal: 26
- Brood cycle interruption: 12
- Apiary site selection: 37
- Apiary colony configuration: 30
Do you like/use Screen Bottom Boards?

- 95% of BIP survey respondents say THEY DO USE THEM
BUT SCREEN BOTTOM BOARDS apparently DO NOT REDUCE LOSSES


- However in northern states a 12.4% reduction of loss was recorded in last survey year (2013-2014).
X% use a screened bottom board on ____% of colonies

- 0%
- 5-25%
- 25-33%
- 33-50%
- 50-67%
- 67-75%
- 75-95%
- 100%

each less than 3% of beekeepers

... and during the winter blocked the screen bottom

- 21% of beekeepers don't use SBB
- 66% of beekeepers use SBB on 100% of their hives
MITE CONTROL PRACTICES:

- None: 49
- Small cell/Natural comb: 25
- Screen bottom board: 150
- Requeen with hygienic bees: 21
- Other: 10
- Drone brood removal: 29
- Brood cycle interruption: 18
- Bee sanitation measures: 23
- Apiary site selection: 18
- Apiary colony configuration: 25
- Alternative hive: 38
Drone brood removal
Drone Brood removal

- 11% fewer overwintering colony losses detected in one of four survey years (2012-13).
- However in northern states a 10 % - 33% reduction in loss was recorded in operations that used this technique in 3 of 4 survey years (2011-12, 2012-13, 2013 -14)
Did you medicate or treat your hives in 2014?

Yes 144
No 99
Mite Control Treatment Products Used

- Amitraz / Apivar
- Apilife Var
- Fluvalinate / Apistan
- Grease patties
- Mineral oil
- None
- Other herbal treatments
- Powdered sugar

Amitraz (Apivar)

<table>
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<th>Month</th>
<th>Count</th>
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<tr>
<td>February</td>
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Essential Oil (Apiguard or Apilife-Var)

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<td>April</td>
<td>4</td>
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<td>March</td>
<td>3</td>
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<tr>
<td>February</td>
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Acid (Formic or Oxalic)

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<tr>
<td>October</td>
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<tr>
<td>April</td>
<td>8</td>
</tr>
<tr>
<td>March</td>
<td>6</td>
</tr>
</tbody>
</table>
Treating with Chemical controls

Known Varroa Control Product Used

Some Significant Differences

[Graph showing data with bars and pie chart]

Respondent Ratio

N=2,749

Beekeepers who reported treating with a known varroa control product reported 7 fewer overwintering colony deaths per 100 managed colonies than those who did not report using a known varroa mite control product. In other words, beekeepers who reported treating lost 20% fewer colonies than those who did not report such use. Sixty-one percent of beekeepers did not report using a varroa mite control product.
Do you use essential oils?

Apiguard

ApiLife Var
If you do use an essential oil --

- APIGUARD - 26-31% fewer overwintering colony losses with use (4 consecutive survey years: 2010-11, 2011-12, 2012-13, 2013-14)
- APILIFE VAR 24.5-40% fewer overwintering colony losses with use (4 consecutive survey years: 2010-2011, 2011-12, 2012-13 and 2013-14)
- Essential oils in HONEY BEE HEALTHY & other supplements are not adequately control mites
Alternative material used

Honey - B - Healthy
Do Acids control mites?

Formic (MAQS)        Hop Beta
OXALIC
Acids for varroa control

- Formic ACID (MAQS) - 16-31% fewer overwintering colony losses with use (4 consecutive survey years 2010-2011: 2011-12; 2012-13; 2013-14)
- OXALIC ACID - 37- 41% fewer overwintering colony losses with use (2 consecutive survey years 2012-13, 2013-14)
- HOPGUARD II - 10% fewer overwintering colony losses with use in one survey year (2013-14)

Smart chemicals need some smarts to use
Do you use/have you used a miticide?

APIVAR (Amitraz) - 35-47% fewer overwintering colony losses with use (3 consecutive survey years; 2011-2012, 2012-13 and 2013-14)

Smart chemical for Dumb beekeeper
What Percentage of Colony Loss Was Queen Related

- 0%: 53%
- 10-30%: 12%
- 30-50%: 4%
- 50-75%: 7%
- 75-100%: 3%
- I don't know: 21%

Bar chart showing:
- 0%: 129
- 10-30%: 16
- 30-50%: 8
- 50-75%: 11
- 75-100%: 29
- I don't know: 50
All about queens

Did you (or your hive) requeen?

- Yes: 45%
- No: 36%
- Not that I’m aware of: 19%

How Did You Requeen

- Mated queen introduced: 61
- Queen cells introduced: 14
- Split hive-colony created new: 27
- Supercede occurred: 25
- Swarmed: 43
- Virgin queen introduced: 4
- Other: 3
Some seasons/colonies are tough....

Bee Counted Bee Informed
Beeinformed.org
Thank you

Go to survey results (top bar)-- 2015 Survey reports