

PRELIMINARY REPORT:

Guild Hive Census Reveals Surprising Colony Survival Trends

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The response to the Guild's First Annual Hive Census was impressive – 52% of Guild households contributed. Thanks to each of you who gave your time and energy to review your records and share your experiences. We could use your suggestions to improve our outreach to non-Guild beekeepers, as we aim to census all the hives in San Mateo County. This year we only included five non-Guild local beekeepers.

After all your effort, what did we learn? This article represents a preliminary report of some fascinating results on colony survival, focusing on three themes: how well our hives fared during the 2012-2013 season, how many of our newly acquired colonies overwintered, and whether we can learn anything about treatment and survival rates.

1. Overall Hive Survival

Our census takers reported on the survival of 688 colonies, both new and some that have survived for many years – up to 9 years old. Of the hives that people had at the beginning of the census period (April 1, 2012) and the ones that they acquired over the ensuing year, about half or 46.8% survived.

What does this result mean for local small beekeepers, many with only 1 or 2 colonies? We found lots of variability in colony survival rates among individual beekeepers. There was quite a bit of pain last year as nearly a quarter of beekeepers reported losing ALL their colonies. That was the experience for 21 of 88 households (23.9%).

However, nearly another quarter DID NOT LOSE ANY colonies, including another 21 of 88 households (23.9%).

We are still analyzing the reasons for this variation. How much is due to the source of the colonies, beekeeper experience, type of management, or simply to chance, as our beekeepers generally do not have many colonies?

2. Survival of Newly Acquired Colonies 2012

With such large losses each year, obtaining new colonies has become commonplace in San Mateo County, as elsewhere. But how do these newly acquired colonies fare? Fewer people provided detailed information on their individual hives, so we have less data to answer this question, but still a dramatic picture emerged.

Newly acquired colonies fared worse overall than our total colonies of all ages – only 63 of 165 successfully overwintered. This means that only 38.2% of our new colonies from 2012 survived, a number that should give us pause. However, some sources performed exceptionally poorly and others considerably better (see Chart 1).

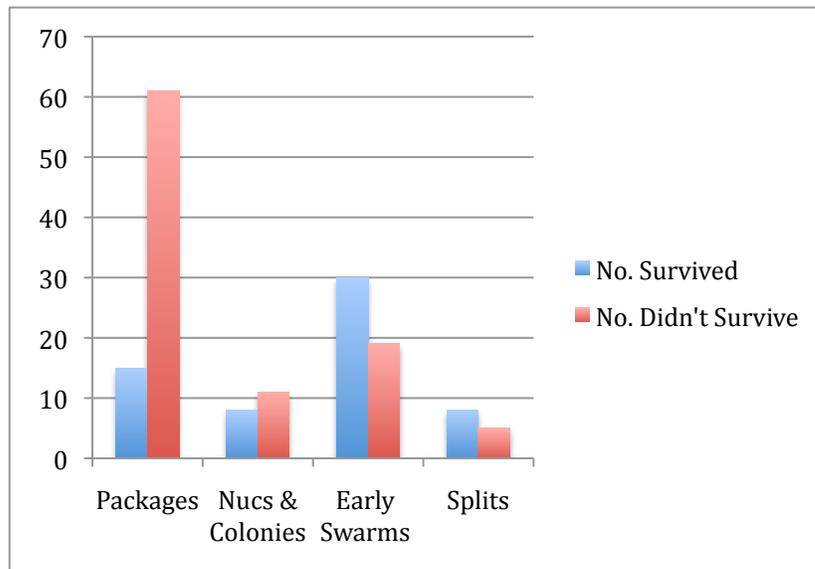


Chart 1: Survival of Colonies Acquired in 2012 by Source

Nearly half of our bees came from packages last year (46%), and yet this most popular source of bees proved to be the one that failed at the highest rate. Four out of five packages of bees (80.3%) died within the year. Our two major sources of packages in San Mateo had similar rates of failure (Olivarez 80% and April Lance 78.9%).

By contrast, our bees did better when they reproduced naturally. Early swarms were our second major source of colonies; the census reported on 49, and these performed well. Nearly two thirds, or 61.2%, survived. Splits or divides build on the urge to swarm, and the pattern of survival was nearly identical to early swarms with a 61.5% survival rate.

Nucs and mature colonies make up only about a tenth of our new colonies, but they proved to be an intermediate choice. Less than half survived, with 42.9% of nucs, and 41.7% of colonies living through the winter.

3. *Some Enticing Trends: Treatments and Survival*

Another possibility is that the ways we treat our hives – or don't – might affect the survival of our colonies. Two major approaches taken by beekeepers include:

1. Medication against varroa mites to avert Parasitic Mite Syndrome using mainly organic treatments;
2. Propagation of colonies that survive from year to year under the hypothesis that the queens manifest characteristics that will keep mite levels low as well as traits that are well adapted to local environmental conditions.

I looked at the data to try to disentangle whether we could learn anything about survival rates using these two approaches.

First I wondered how many beekeepers in our sample fell into one camp or the other. Surprisingly, 65 reported that they used no treatments at all. A smaller number used “soft treatments” like powdered sugar to treat for mites (10) or cinnamon for ants (8). Another small group of 10 used organic treatments such as Formic acid (5 used either Mite Away II or Mite Away Quick Strips), or Apiguard, Apistan (fluvalenate), or Fumagilin-B (another 5).

Beekeepers from 79 households shared information on what kinds of treatments they used during the survey period and also reported on their colony survival rates. The reports on organic and soft treatments are very low, but the trend this year was for untreated colonies to survive better than treated. See chart 2.

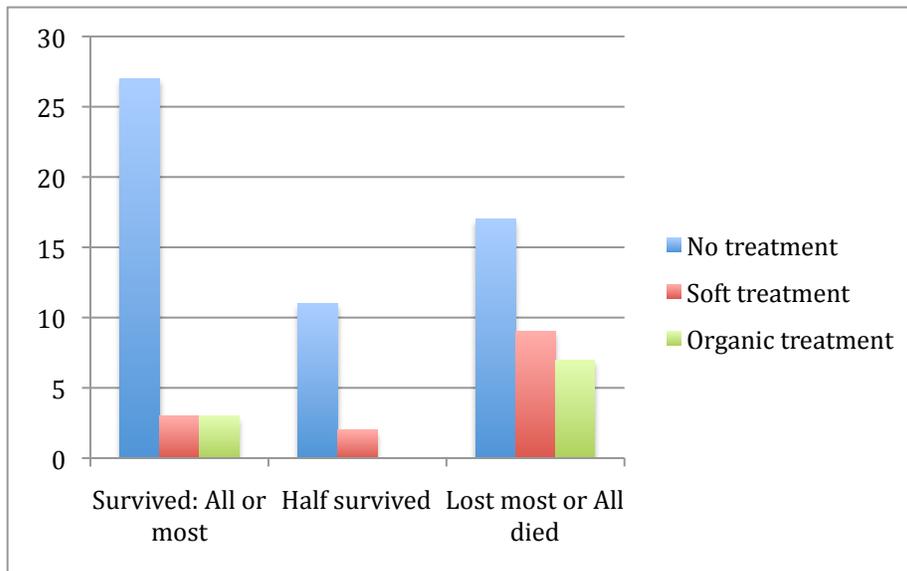


Chart 2: Number of Households with honeybee colonies that survived or did not, by treatment regime

The Future of the Guild's Annual Hive Census

We hope to make improvements to the Annual Hive Census starting next spring. We welcome any comments or suggestions (please send to [nickieirvine at gmail.com](mailto:nickieirvine@gmail.com)). In addition to making it easier to navigate and fill out, we would like to provide examples for better record-keeping practices to make it easier to remember and to tally up your results each year. And if anyone has experience with surveys or with statistical analysis, we would welcome your assistance in the future.

Finally, join us at the Annual Holiday Party on December 5 for a drawing of our raffle winners. If you filled out the hive census completely, you have two opportunities to win. See the side box for details – we have some great prizes!