

2016-7 NH Bee Hive Loss Survey Results

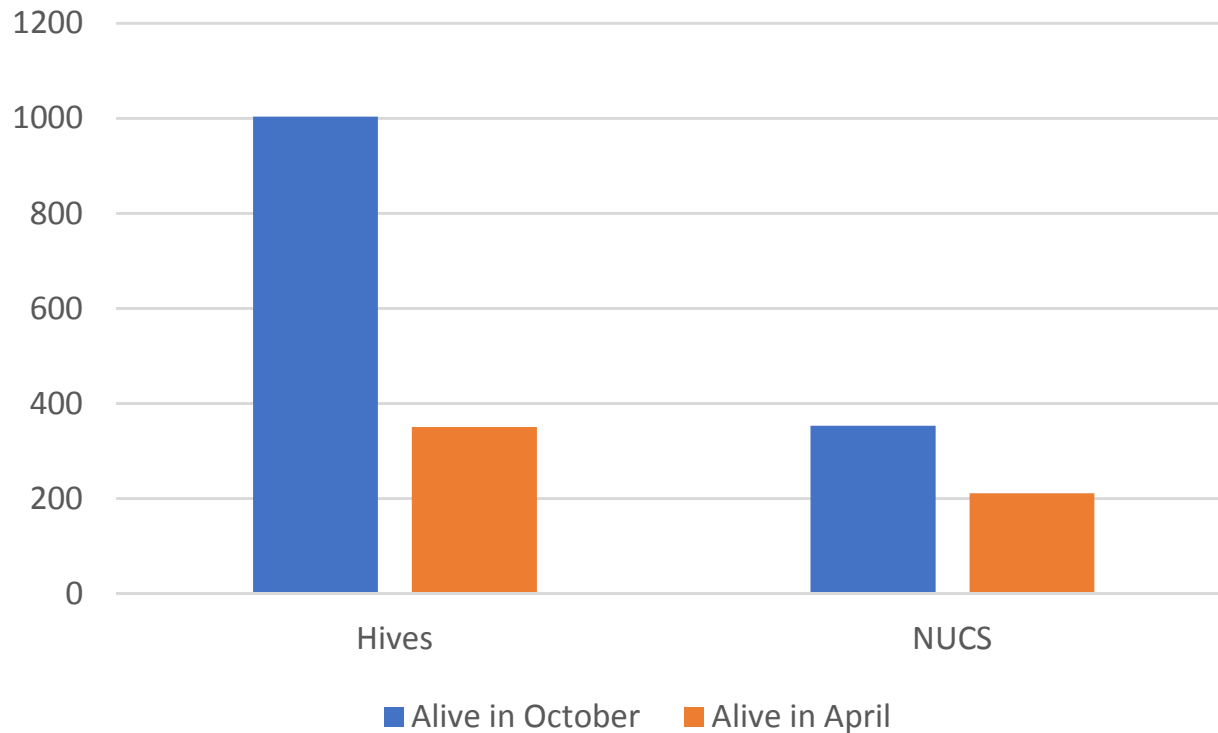
May 12 2017

2016-17 Hive Loss Survey Background

- Survey covered the period from approximately Oct 1, 2016-Mar 31, 2017
- Excellent response!
 - 261 questionnaires were filled out representing 247 beekeepers
 - Represented 130 towns (125 NH, 5 neighboring state)
 - Collected data for 1004 hives & 353 NUCs
- This first survey is giving us some interesting insights along with ideas about how to improve data gathering for future surveys
- **As with any survey data, don't take the numbers as absolute fact – but an indication of the trends**

Comparing Live Hives in Oct 2016 & April 2017

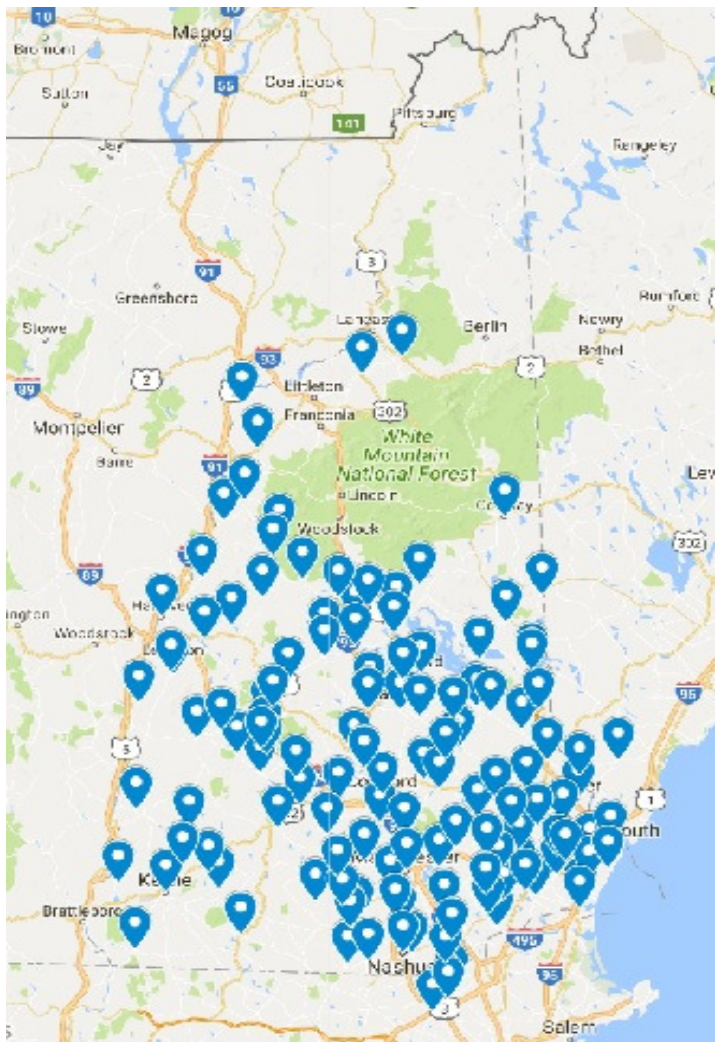
Comparison of Hives/Nucs alive in October (blue) and April (Orange)



	Hives reported	NUCs reported
Alive Oct 1, 2016	1004	353
Alive April 1, 2017	350	211

65% Hive & 40% NUC Loss

Reported Hive and NUC Loss by County

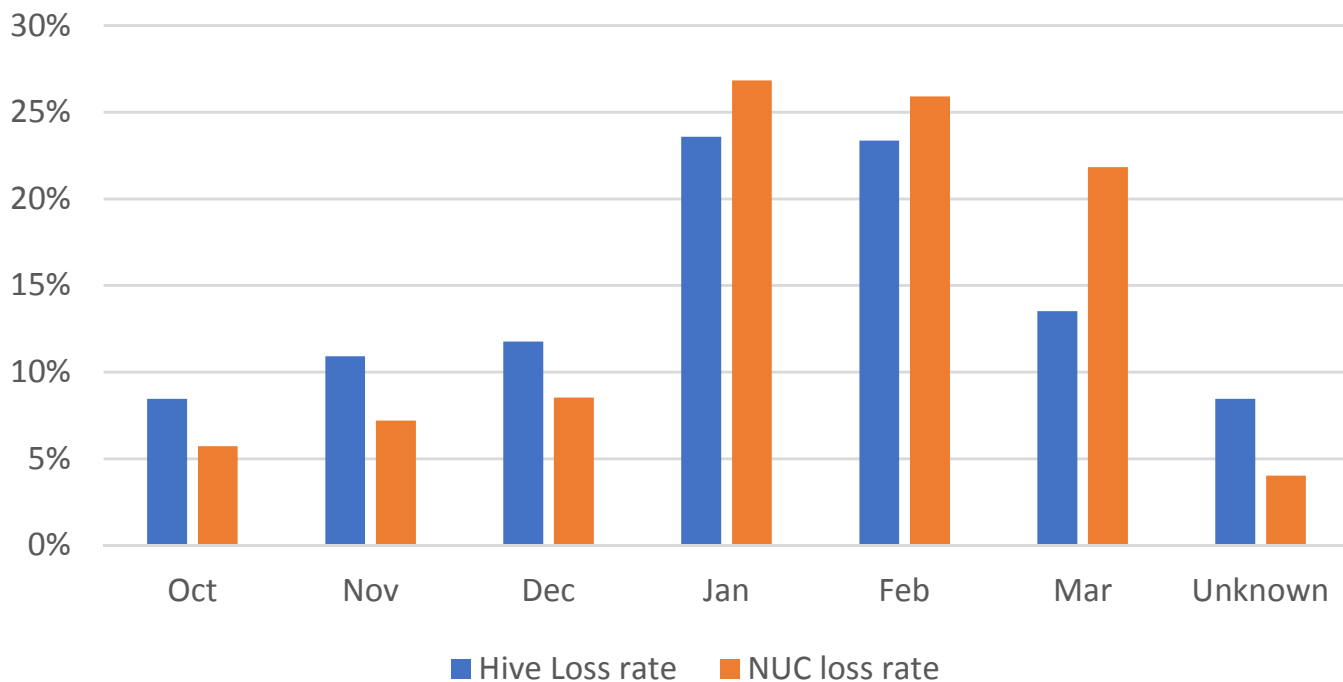


Each pin represents a town with at least 1 hive

County	Hives Reported*	Hives % Lost	NUCs Reported	NUCs % Lost
Merrimack	194	78%	9	100%
Belknap	49	78%	2	100%
Carroll	58	67%	1	100%
Hillsborough	109	64%	4	50%
Rockingham	134	64%	20	65%
Sullivan	217	62%	256	34%
Grafton	93	60%	20	20%
Strafford	84	56%	30	67%
Coos	4	50%	0	0%
Cheshire	45	38%	11	27%

Reported Hive Loss Rate by Month

Reported Loss by Month

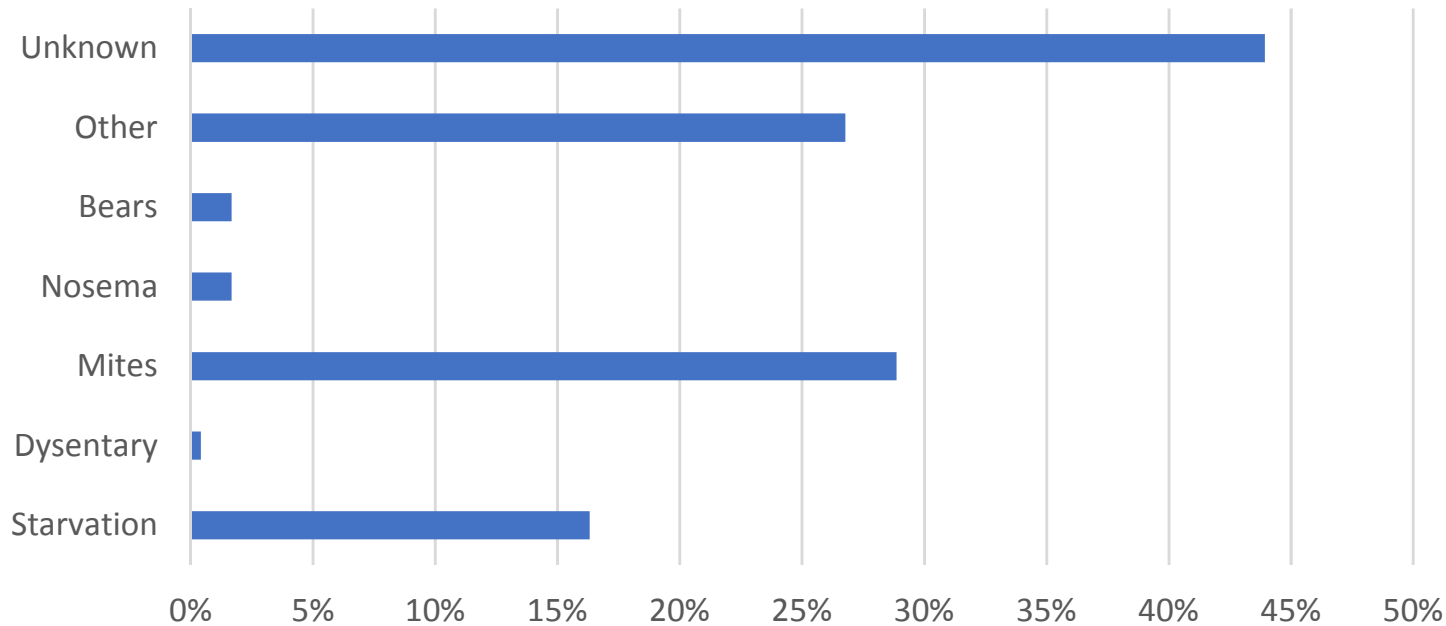


	Hives Lost*	NUCs Lost*
Oct	55	8
Nov	71	10
Dec	77	12
Jan	154	38
Feb	153	37
Mar	88	31
Unknown	55	6

*note –numbers per month are estimates based on survey comments.

Why do you suspect your hives died?

Reported Cause of Loss
% of 239 responses received



Note: Many of the 239 responses listed multiple reasons for hive loss. We did not ask for per hive data.

Is it surprising Nosema is so low?

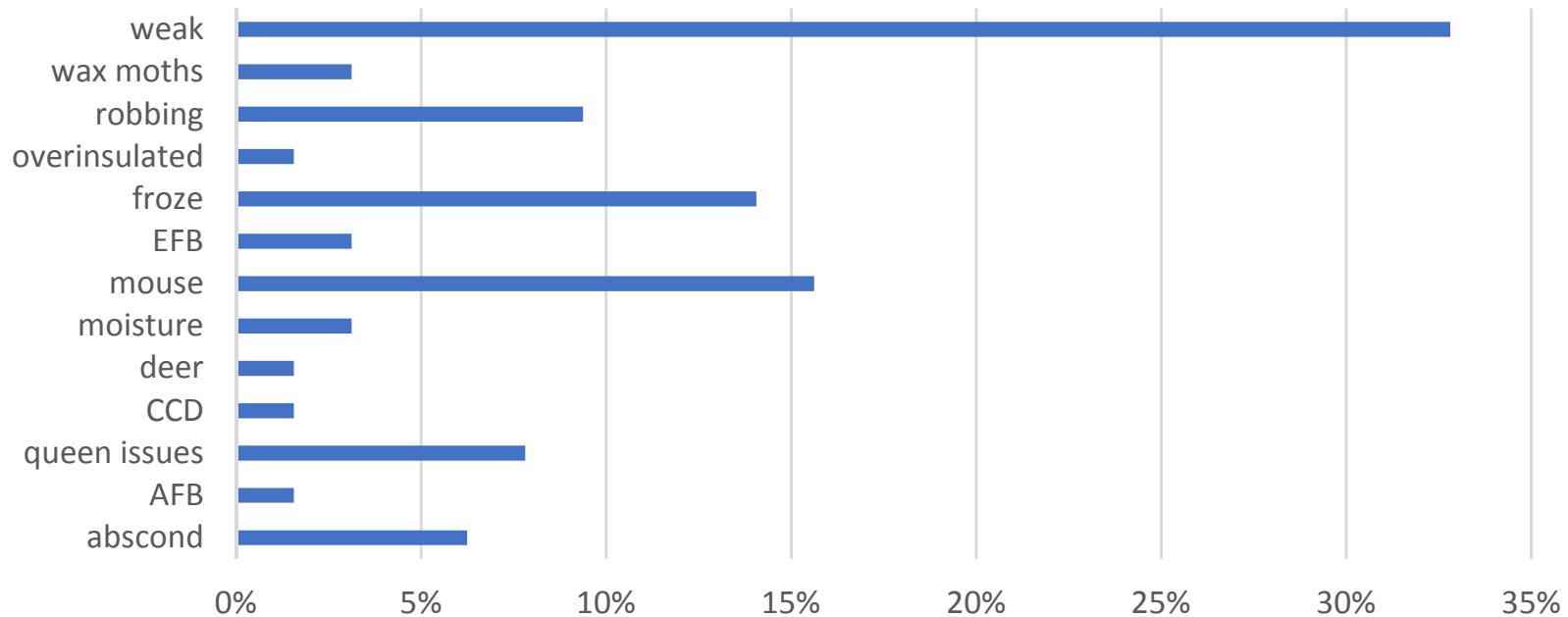
In the comment section for fall feeding there were several comments that the bees didn't take much food.

Does this indicate beekeepers don't know signs of Nosema?

Why do you suspect your hives died? – “Other Cause” breakdown

Other Breakdown

% of 64 responses



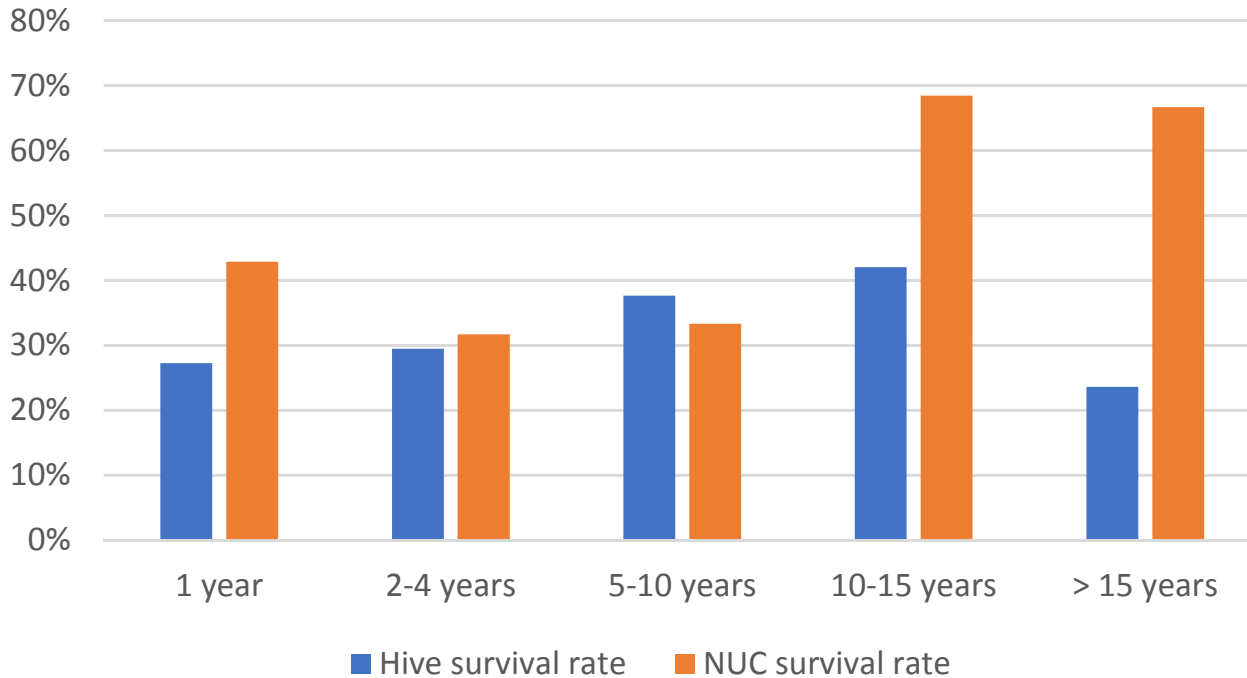
Several comments about:

- tops blown off so bees froze
- moisture
- Yellow jackets robbing hives

Next sets of graphs are SURVIVAL RATES

Beekeeping Experience vs Survival Rates

Survival rate by years of experience

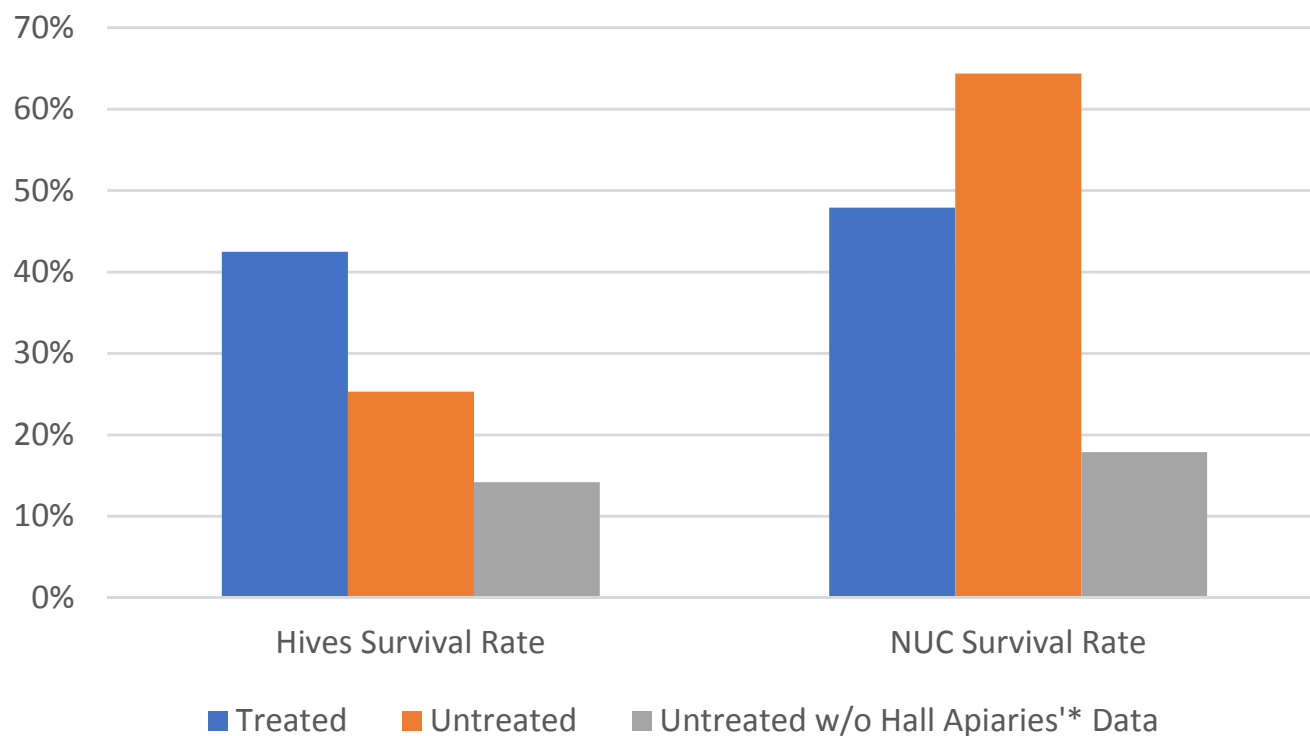


experience	Hives Reported	Nucs reported	# Of beekeepers
1 year	88	7	56
2-4 years	275	41	85
5-10 years	255	39	73
10-15 years	314	260	18
> 15 years	72	6	14

5+ years of experience appears to help survival rate

Varroa Treated vs Untreated Survival Rate

Survival Rate - Varroa Treatment vs Untreated



	Hives reported	NUCs reported
Treated	577	95
Not Treated	427	258

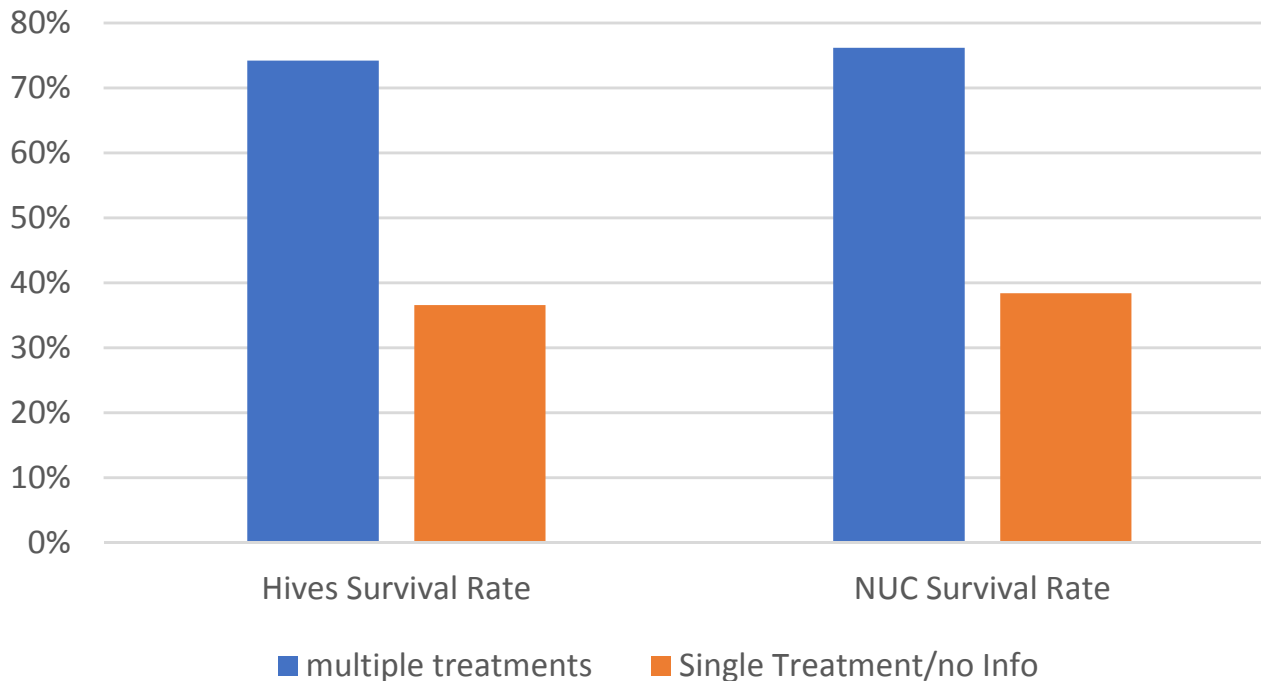
*Treated is defined as adding a product such as those listed on the following page. IPM only (drone comb, etc) was considered non-treated

- Treating for Varroa at least 1 time made a significant difference in survival rates
- Comparing untreated survival rate with and without Hall Apiary data indicates genetics made a difference

*Hall Apiaries is a treatment free operation that raises their own queens selecting for mite resistance and other traits that do well in the Western NH climate.

Survival rate Comparing Single vs Multiple Varroa Treatments

Survival Rate - Multiple vs Single Treatment



Treatments	Hives reported	NUCs reported
Multiple	93	21
Single or no info	462	73

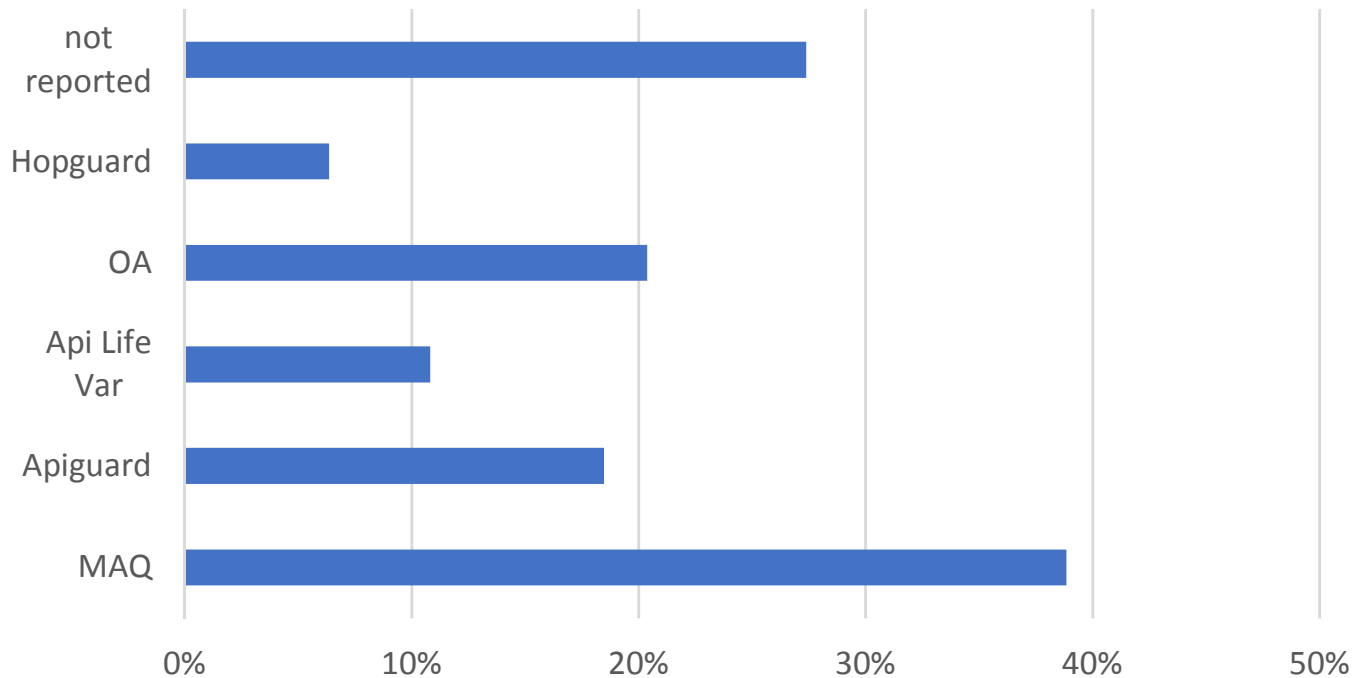
*note: a treatment = Whatever vendor recommends

Ex: Apiguard must be applied 2x for A single treatment

Hives treated multiple times for Varroa during 2016 had a better survival rate than those only treated one time

Reported Treatment Types

Reported Treatments
% of 157 responses

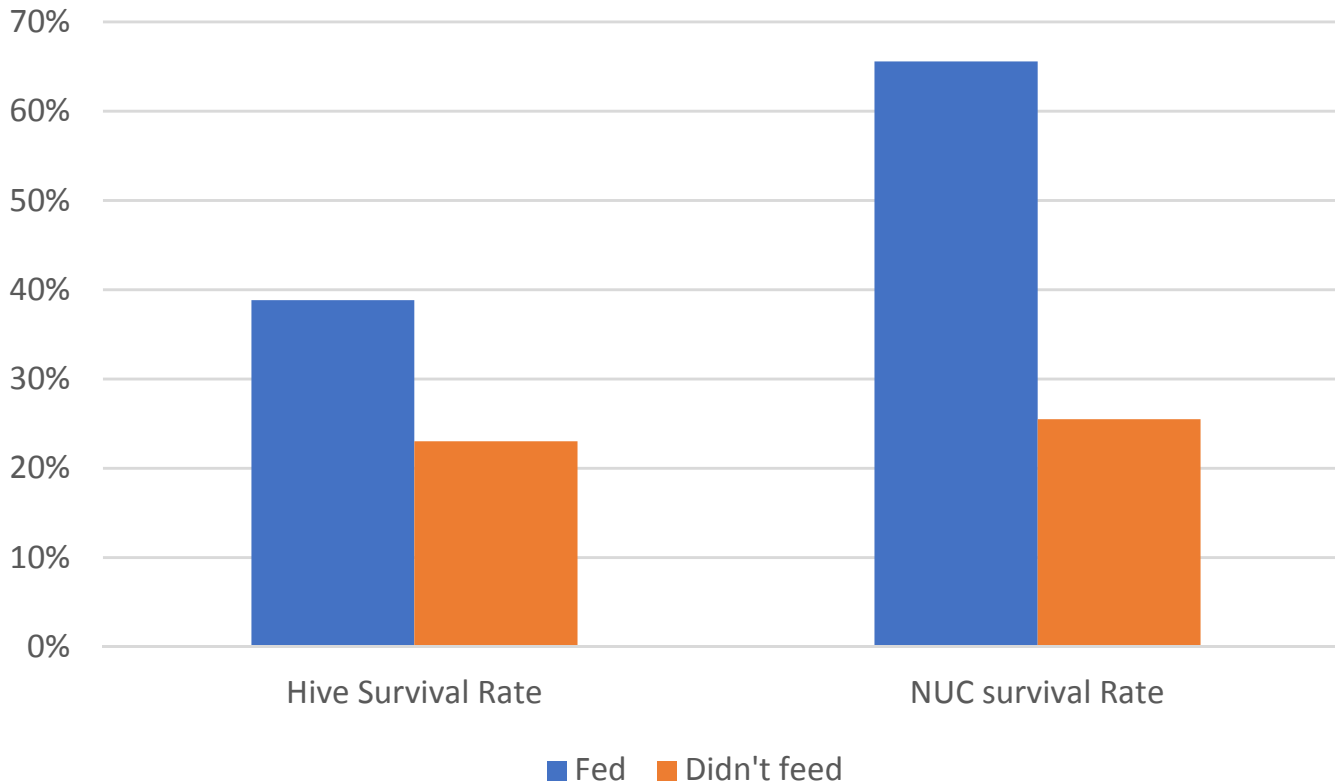


Treatments	Reports
MAQ	61
Apiguard	30
Api Life Var	16
Oxalic Acid	32
Hopguard	10

Note: Many of the 157 responses listed multiple reasons for hive loss. We did not ask for per hive data.

Fall feeding Survival rate

Survival rate - Fall feeding

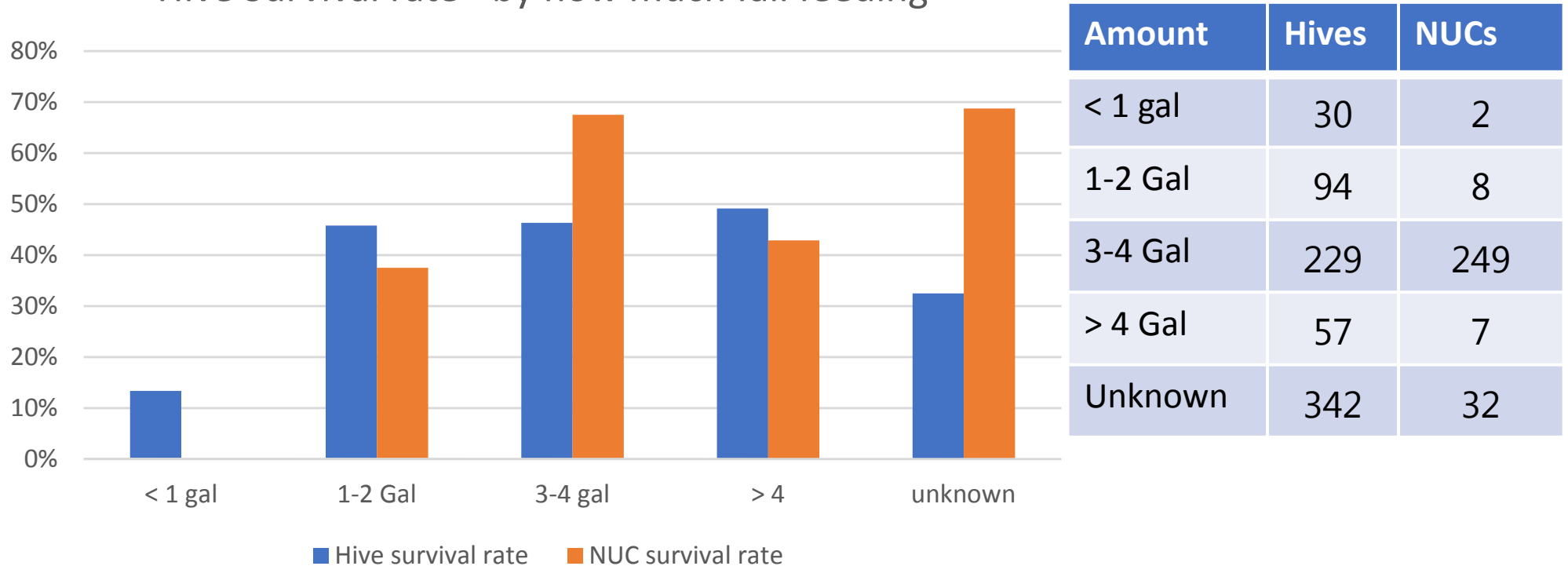


	Hives Reported	NUCs reported
Fed	752	302
Didn't Feed	252	51

Fall feeding in 2016 appeared to help survival rate

Survival rate by how much syrup was fed

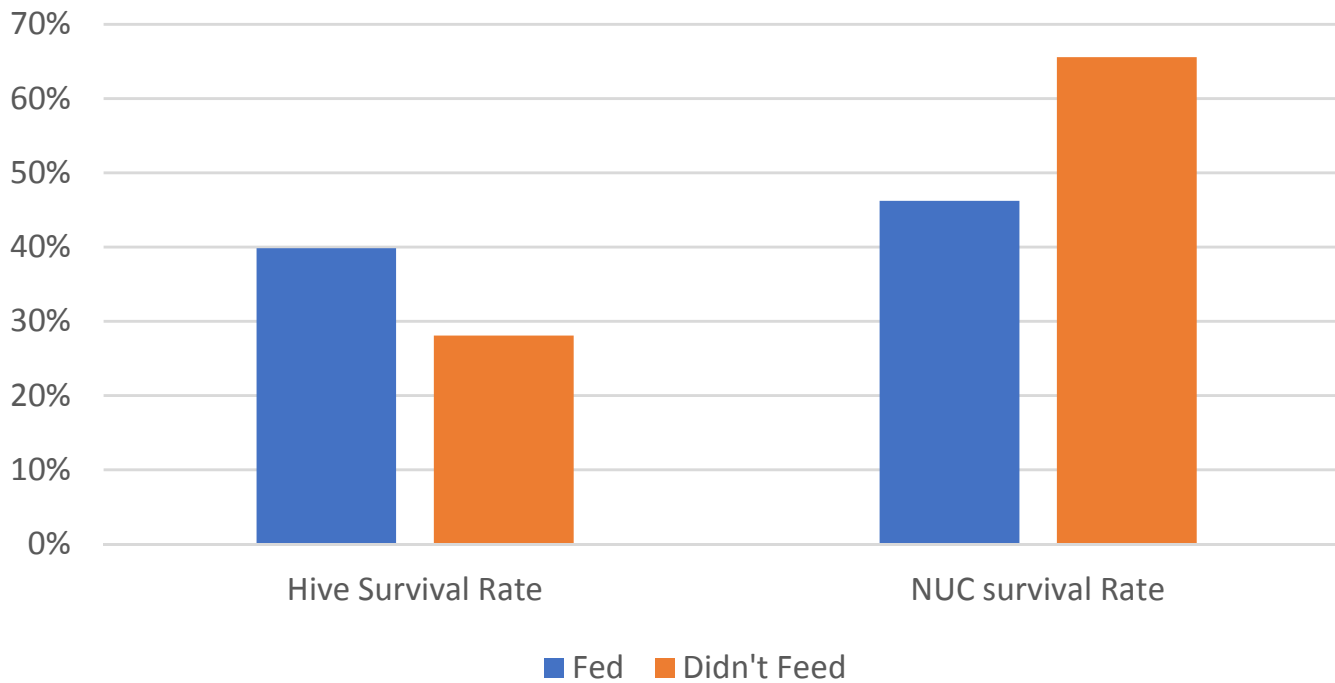
Hive Survival rate - by how much fall feeding



Feeding < 1 gal in 2016 shows significant loss
feeding more than 1 Gal shows no significant difference in survival rate

Winter feeding Survival rate

Winter Feeding Survival Rate

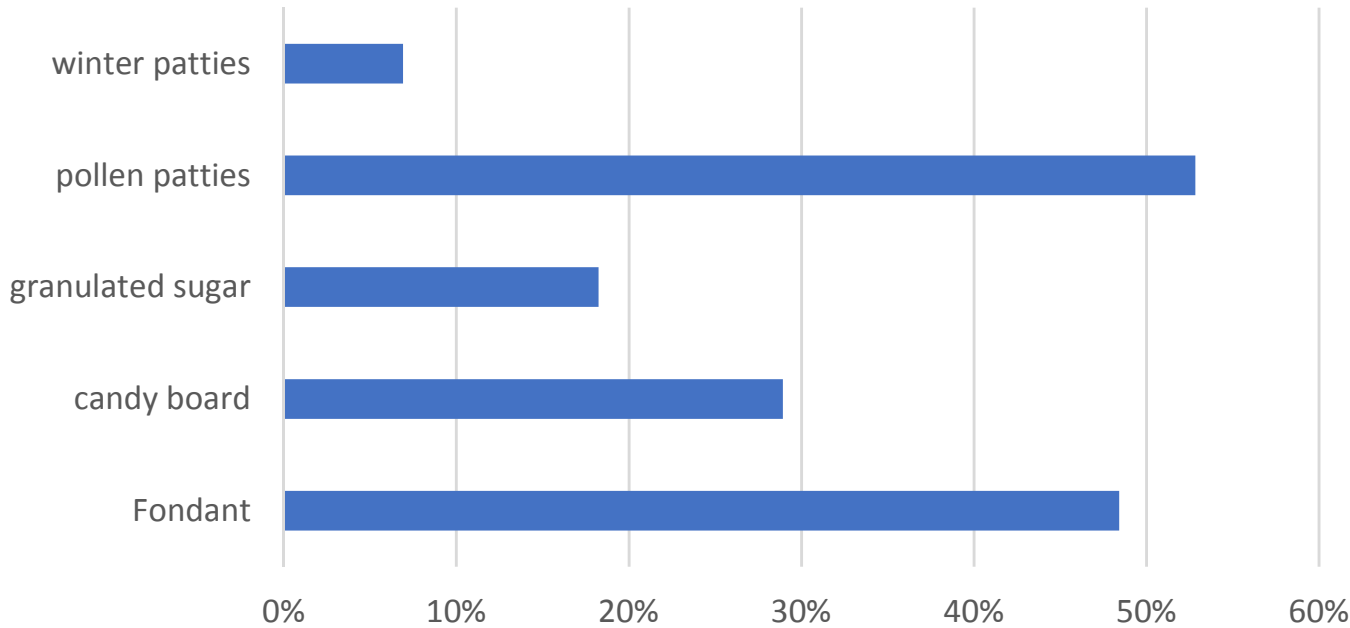


	Hives Reported	NUCs reported
Fed	580	106
Didn't Feed	424	247

Winter feeding in 2016 appeared to help survival rate of hives

Types of Winter Feed Reported

Type of Winter Feed
% of 159 responses



Type	# of reports
Fondant	77
Candy Board	48
Granulated Sugar	29
Pollen Patties	87
Winter Patties	12

Several responses showed multiple types of winter feed.

*Note – winter patties were not an option in the survey and are probably under represented
– the Winter patty submissions counted were submitted by paper

2016-17 Hive Loss Survey Summary

- Great response for our first year of collecting data – 261 responses covering
 - 130 towns
 - 1004 hives + 353 NUCs
- Reported data indicates in 2016
 - 65% Hive Loss & 40% NUC Loss
 - Survival rates were significantly better with at least 1 varroa treatment & even better with multiple treatments
 - Fall feeding helped survival rates
 - Beekeepers with more than 5 years experience had a better survival rate
- This is a great start – but we need multiple years of data to really understand trends

2016-17 Hive Loss Survey Recommendations & Request for Approval

- Work with our UNH coop extension colleagues using this data to:
 - Support grant applications to further beekeeper education.
 - Overlay drought and other information on interactive maps so we can draw more insights.
- Make this summary data public on our website
 - Present data at club meetings if the clubs are interested.
 - Email the summary (or a pointer to the info on the website) to :
 - All NHBA Membership
 - All participants that submitted information to the survey
 - Send paper copies of the summary to members who participated via postal mail.
- Run this survey annually
 - Research committee takes the lead on doing an annual survey – including taking input on how to improve data collection along with other data to be collected.

**Approved @ 5/1/17 NHBA
board meeting**

Background

Assumptions made when collating the data into this summary.

- For entries with only the county, Used county seat as town
- For entries with multiple towns, used first town
- For what month was hive lost, if no details in comment, divided loss amongst the listed months
 - ex if 3 hives were lost, with Nov/Jan listed – I assigned 1.5 hives to Nov & 1.5 to Jan
- For Varroa treatment, if multiple treatments were listed, I assumed all hives had those treatments unless otherwise noted
- For Feeding, estimated total based on comments
- On Reason for loss, attempted to categorize “other”
- On Reason for loss, didn’t have per hive detail so just added all hives when a reason was listed...
 - Ex: if 4 hives were lost & it listed starvation + Mites, I counted 4 in starvation & 4 in mites

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 - Ex: if 4 hives were lost & it listed starvation + Mites, I counted 4 in starvation & 4 in mites
- ~10 lbs. of sugar = 1 gallon 2-to-1 sugar syrup