

# QUEEN QUALITY REPORT



Report date: **July 28, 2016**



Source	Received date	No. queens
<b>XC OWS</b>	<b>07/28/16</b>	<b>1</b>
Sweet Bee Honey Co. Inc		

## Morphological measures

A+	Weight (mg)	Thorax width (mm)	Head width (mm)
<b>Average</b>	241.0	4.9	3.8
<b>Maximum</b>	241	4.9	3.78
<b>Minimum</b>	241	4.9	3.78
<b>% GLOBAL</b>	96.0%	88.7%	76.5%



## Pathogens and diseases

NA	Nosema apis	Nosema ceranea	Viruses							
			ABPV	BQCV	CBPV	DWV	IAPV	KBV	SBV	
<b>% Positive (+)</b>	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured
<b>% Negative (-)</b>	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured
<b>% Low</b>	NA	NA	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured
<b>% Medium</b>	NA	NA	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured
<b>% High</b>	NA	NA	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured	Not measured

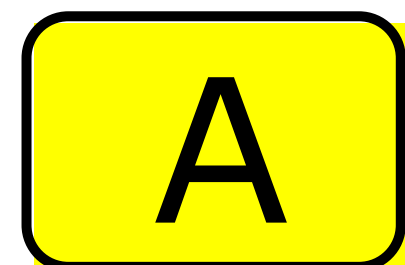
## Insemination success and mating number

B+	% Viability	Sperm count (x10 <sup>6</sup> )	% filled
<b>Average</b>	94.8%	3.47	27.8%
<b>Maximum</b>	94.8%	3.47	27.8%
<b>Minimum</b>	94.8%	3.47	27.8%
<b>% GLOBAL</b>	74.2%	41.6%	31.1%

## Comments and recommendations

Large queens are an indication of strong and well-fed cell builders. These queens appear to have been raised in very good cell builders. These queens were not screened for any parasites or pathogens, so no conclusions or recommendations can be made concerning disease. The sperm stored in the spermathecae of these queens is of high viability, meaning that a sufficiently high percentage of the sperm was still alive at the time of processing. The total number of stored sperm is low. Check your records for poor weather, inadequate drone sources, or other factors that could explain poor insemination success.

## OVERALL ASSESSMENT



These queens are of high reproductive quality

# Key and instructions for interpretation



- Average** The *average* score for the set of queens measured in the *current* group
- Maximum** The *maximum* score for the set of queens measured in the *current* group
- Minimum** The *minimum* score for the set of queens measured in the *current* group
- % GLOBAL** The percentile of the average score within the entire population of all queens measured (n=1191)
- % Positive/Negative** The percentage of positive or negative detections of a particular Nosema species or virus in the current group
- % Low/Medium/High** The proportion of samples in each category based on their relative disease intensity (i.e., how much virus)

**Queens to date: 1191**

## Morphological measures

	Global avg.	Standard dev
<b>Weight (mg)</b> Wet weight of adult queen, assumed to be mated. Expected greater weight if <i>actively</i> laying.	196.9	25.3
<b>Thorax width (mm)</b> The distance between the two widest points across the thorax.	4.57	0.27
<b>Head width (mm)</b> Maximum width of the head.	3.61	0.23
<b>Right wing (mm)</b> Length of right wing from insertion to tip.	9.76	0.25
<b>Left wing (mm)</b> Length of left wing from insertion to tip.	9.76	0.24
<b>FA (mm)</b> Fluctual asymmetry; difference in wing lengths that can indicate developmental problems.	0.086	0.080
<b>Total ovariole no.</b> The number of individual egg-producing factories within the ovaries; indication of fecundity.	315.6	39.0

## Pathogens and diseases

<b>Nosema apis</b> The "original" species of gut microsporidian that is a harmful parasite to workers as well as queens.	0.0%	NA
<b>Nosema ceranea</b> The "new" and predominant gut microsporidian that is a harmful parasite to workers as well as queens.	0.0%	NA
<b>HBTM</b> Presence/absence of the tracheal mite, <i>Acarapis woodi</i> , a microscopic endoparasite of adults.	2.5%	NA
<b>ABPV</b> Acute Bee Paralysis Virus.	38.5%	NA
<b>BQCV</b> Black Queen Cell Virus.	82.1%	NA
<b>CBPV</b> Chronic Bee Paralysis Virus.	5.1%	NA
<b>DWV</b> Deformed Wing Virus.	92.3%	NA
<b>IAPV</b> Israeli Acute Paralysis Virus.	33.3%	NA
<b>KBV</b> Kashmir Bee Virus.	5.1%	NA
<b>SBV</b> Sacbrood Virus.	28.2%	NA

## Insemination success and mating number

<b>% Viability</b> The percentage of the sperm stored in the queens' spermathecae that are alive.	84.1%	16.5%
<b>Sperm count (x10<sup>6</sup>)</b> Total number of stored sperm, in millions. Fully mated queens are expected to have >5 mil.	4.02	2.57
<b>% filled</b> The proportion of the theoretical maximum number of sperm that can fit in the spermatheca.	41.4%	27.5%
<b>No</b> Observed mating number, the total number of mates by the queen.	19.2	7.5
<b>Me</b> Effective paternity frequency, the weighted average of paternal contribution to the workers.	16.4	8.6

Thank you for working with the NC State Apiculture Program and our Queen Quality Clinic!  
If you have any questions, please don't hesitate to contact us.

