NAGC
NATIONAL AGRICULTURAL GENOTYPING CENTER

National Agricultural Genotyping Center

Honey Bee Testing Sample Shipping Instructions

SAMPLE STORAGE/PACKAGING/SHIPPING PROCEDURES FOR HONEY BEES

You will find the general guidelines for sending specimens to NAGC for honey bee testing below. Please read all directions carefully to ensure samples are submitted correctly. This will help to guarantee successful genotyping. We cannot test samples that are submitted incorrectly.

Whole-Body Samples (Honey Bees Only)

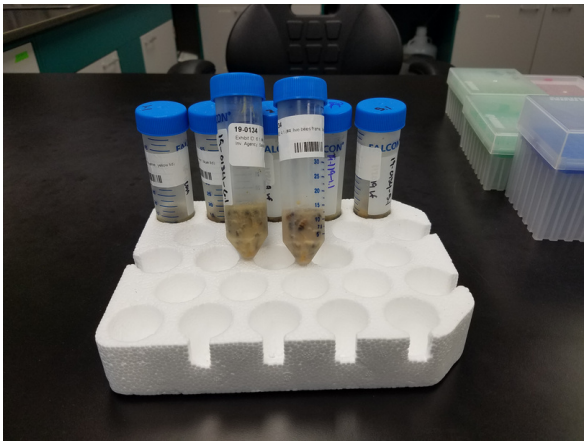
01 Please submit a minimum of 50 bees per hive (a minimum of 50 bees is ideal, but a sample with a lower count will be accepted).

Note: Be sure to keep honey bees from different hives separate for proper testing.

a. All bees submitted for sampling **MUST** be dead. We do NOT accept live bees. We suggest freezing the bees overnight prior to sending a collection sample to ensure all bee specimens are dead.

02 Honey bees should be placed in a leak-proof container, such as a 50mL conical tube or a Tupperware container.

a. Please have the leak-proof container labeled prior to collection.
b. DO NOT send honey bee samples in bags, glass jars, or attached to the paper.
c. All containers MUST be a leak- and crush-proof. See below for reference:



03 Please label each leak-proof container with:

a. Submitter name
b. Hive name and number
c. Date and initials of collection.

04 Next, add 70% denatured ethyl alcohol to the container until the honey bee sample is completely covered.

a. After the sample has been completely submerged, the ethyl alcohol should be removed by carefully pouring off the liquid. This will leave behind the alcohol-soaked bees in the container.
b. DO NOT use isopropyl alcohol. This type of alcohol can lead to loss of sensitivity and/or increased degradation.
c. DO NOT re-use the ethyl alcohol if sending more than one sample
d. Ethyl rubbing alcohol can be purchased at local pharmacies such as CVS, Walgreens, etc.

NAGC
NATIONAL AGRICULTURAL GENOTYPING CENTER

Whole-Body Samples (Honey Bees Only)

05 Include the completed Submission Form with the sample shipment.

06 Ship honey bee samples overnight or early in the week (Monday or Tuesday) to avoid unpredictable storage temperatures over the weekend.

Note: Secondary bacteria and fungi thrive under warm, humid conditions, which can result in specimens decaying. Genotyping and pathogen testing might be difficult or even impossible on decayed specimens.

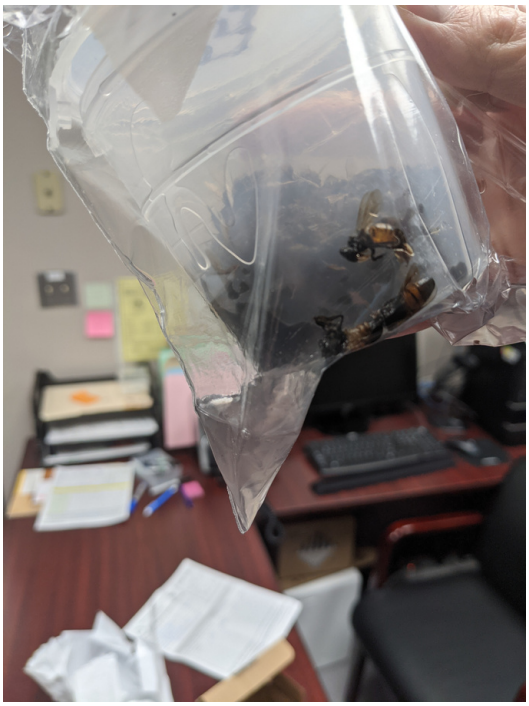
a. Samples should be sent at ambient temperature and shipped with an ice pack or dry ice.

b. If samples are NOT going to be shipped immediately (but will be within 2 days), the prepared samples should be stored at 4˚C (refrigerator or on ice) for up to 2 days until ready to ship at ambient temperature. When shipping samples, please send them packed with an ice pack or dry ice.

c. If the collected samples are not going to be shipped within 2 days, store the prepared samples at -20˚C (freezer) or -80˚C (ultra-freezer) until ready to ship at ambient temperature. When shipping samples, please send them packed with an ice pack or dry ice.

What Not To Send

- DO **NOT** send samples in containers that can easily open in transit and leak out liquids, as seen below:

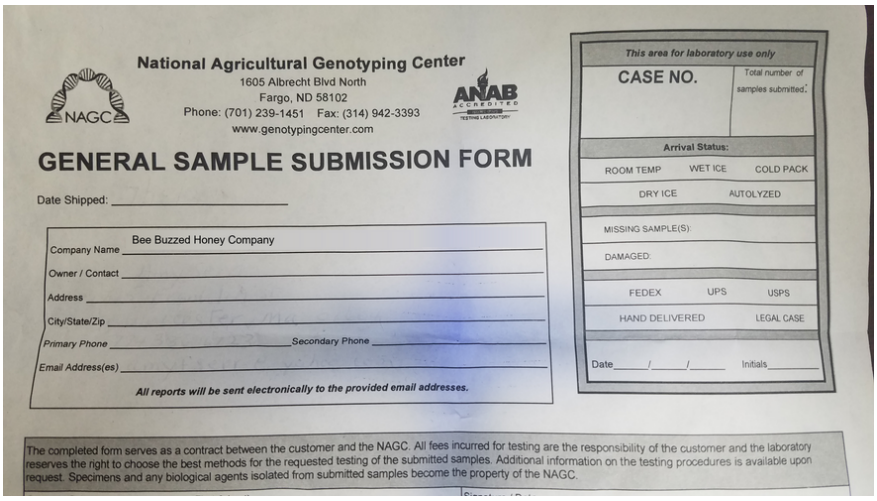


NAGC
NATIONAL AGRICULTURAL GENOTYPING CENTER

Whole-Body Samples (Honey Bees Only)

- **DO NOT** send samples in containers where specimens can easily come out and mix together, as seen below:

- **DO NOT** send submission forms in the same packaging as the specimen. If the submission form comes in contact with the ethyl alcohol, the written text will disappear, as seen below:



National Agricultural Genotyping Center
1605 Albrecht Blvd North
Fargo, ND 58102
Phone: (701) 239-1451 Fax: (314) 942-3393
www.genotypingcenter.com

GENERAL SAMPLE SUBMISSION FORM

Date Shipped: _____

Company Name: Bee Buzzed Honey Company
Owner / Contact: _____
Address: _____
City/State/Zip: _____
Primary Phone: _____ Secondary Phone: _____
Email Address(es): _____

All reports will be sent electronically to the provided email addresses.

This area for laboratory use only
CASE NO. | Total number of samples submitted:
Arrival Status:
ROOM TEMP | WET ICE | COLD PACK
DRY ICE | AUTOLYZED
MISSING SAMPLE(S):
DAMAGED:
FEDEX | UPS | USPS
HAND DELIVERED | LEGAL CASE
Date____/____/____ Initials_____

The completed form serves as a contract between the customer and the NAGC. All fees incurred for testing are the responsibility of the customer and the laboratory reserves the right to choose the best methods for the requested testing of the submitted samples. Additional information on the testing procedures is available upon request. Specimens and any biological agents isolated from submitted samples become the property of the NAGC.

NAGC
NATIONAL AGRICULTURAL GENOTYPING CENTER

Whole-Body Samples (Honey Bees Only)

- **DO NOT** send samples in containers that can easily open in transit and leak out liquids, potentially ruining outside packaging, as seen below:

If there are any questions regarding sampling and shipping procedures, please contact the National Agricultural Genotyping Center Laboratory at 701-239-1451 or research@genotypingcenter.com

Ship Samples To:
National Agricultural Genotyping Center
1616 Albrecht Blvd N
Fargo, ND 58102

NAGC
NATIONAL AGRICULTURAL GENOTYPING CENTER

Swab Samples – Bee Brood

You will find the general guidelines for sending specimens to NAGC below for bee brood testing. Please read all directions carefully to ensure samples are submitted correctly. This will help to guarantee successful genotyping. We cannot test samples that are submitted incorrectly.

Testing bee colonies for brood disease may require targeting individual brood cells. For accurate test results:

- Keep swabs sterile prior to sampling brood cells.
- If multiple colonies are being tested on the same day, it is important not to co-mingle.
- Swabs from different colonies in the same wrapper or container.

Follow these directions to successfully submit bee brood samples:

01 Samples should be collected using the following method:

a. Insert one dry, sterile swab into the targeted brood cell.
Note: Two swabs are ideal for replicating samples on the same brood cell, but one swab can be used if two swabs cannot fit into a single brood cell.

b. Rotate/twist the swab to ensure the entire swab will be covered in brood sample.

c. Briefly air dry the swab. The swab should be wrapped in cellophane or wax-lined paper or returned to the swab wrapper.

d. Package individually-wrapped swab samples into an envelope.
Note: DO NOT use a plastic bag, as samples will deteriorate.

e. Please see image below for reference:

NAGC
NATIONAL AGRICULTURAL GENOTYPING CENTER

Swab Samples – Bee Brood

02 Label each envelope containing swabs sampled from a single colony with

- **a.** Submitter name
- **b.** Hive name and number
- **c.** Date and initials of collection.

03 Include the completed Submission Form with the sample shipment.

a. If samples are NOT going to be shipped immediately (but will be within 2 days), the prepared samples should be stored at 4˚C (refrigerator or on ice) for up to 2 days until ready to ship at ambient temperature. When shipping samples, please send them packed with an ice pack or dry ice.

b. If the collected samples are not going to be shipped within 2 days, store the prepared samples at -20˚C (freezer) or -80˚C (ultra-freezer) until ready to ship at ambient temperature. When shipping samples, please send them packed with an ice pack or dry ice.

If there are any questions regarding sampling and shipping procedures, please contact the National Agricultural Genotyping Center Laboratory at 701-239-1451 or research@genotypingcenter.com

Ship Samples To:
National Agricultural Genotyping Center
1616 Albrecht Blvd N
Fargo, ND 58102

NAGC
NATIONAL AGRICULTURAL GENOTYPING CENTER