

Collection, Handling, and Transport of Food Samples to NM SLD

The Environmental Microbiology Laboratory (EM) Section at NM SLD routinely conducts the microbiological testing of food and water samples. The Environmental Microbiology Section of NM SLD requests that all private submitted swab and food samples arrive at the laboratory **Monday through Wednesday 8 AM – 4:30 PM only**. There is a possibility that samples arriving later than Wednesday will not be tested until the following week if the sample condition is still adequate. Note that in general, it is strongly recommended that refrigerated samples should not be analyzed more than 36 hours after collection (*FDA -Bacteriological Analytical Manual Online, April 2003 Chapter 1 Food Sampling and Preparation of Sample Homogenate*). Any samples that need to be delivered to the laboratory on Thursdays, Fridays, or before a holiday need to have prior approval from the EM laboratory staff.

Before submitting any food samples for analysis please contact the EM Lab via telephone at 383-9129 for guidance and consultation regarding the situation at hand.

The condition of food and environmental swab samples received for examination at the lab is of primary importance. All samples should be collected aseptically and with sterile implements. The use of sterile gloves and sterile sample containers is highly recommended. All samples should be held at refrigerated temperature (< 10 °C) while in transit to the laboratory. If the samples are not properly collected, are mishandled during transport to the lab, or are not representative of the sampled lot, then there is an increased likelihood that laboratory results will be meaningless. Of utmost concern are proper collection, identification, and the shipment of a sufficient amount of sample to the laboratory.

Food Sample Collection

1. If sampling from a large amount of food product, a representative sample should be taken. When dealing with large food vessels take a well mixed sub sample portion from the geometric center as well as from other locations in the food container. Use a sterile utensil to aseptically transfer the samples to sterile leak-proof containers. Remember that a representative sample is essential in order to detect the presence of pathogens or toxins that may be sparsely distributed within the food.
2. Do not mix different types of food products or different lots of food products. For example, if two vessels (A & B) with ground beef are to be collected, transfer the beef from vessel A to one whirl-pak bag and the beef from vessel B to a second whirl-pak bag. It is important to keep different lots of food product separate and avoid cross contamination of any kind.

Food Sample Collection

3. Individual food product samples should be collected one at a time. Aseptically collect approximately 200 to 500 grams (sample portion about the size of a clinched fist, or filling an 18 Oz whirl-pak bag up to about 50% capacity). Properly seal the sample container to ensure that leakage will not occur during transport.

For sealing whirl-pak bags carefully fold over the twist tie opening of the bag at least three times. It is very important that each fold be wrinkle free. Then fold over each end of the twist tie toward the center of the bag and fasten (twist) the twist ties together. Give the bag a gentle squeeze between the palms of your hands to test the seal. If you notice air leakage re-seal the bag.

4. Identify each sample container with a properly marked strip of masking tape. If marking the sample container directly with a black permanent marker, take care not to puncture through lining the sample container (especially if that container is a whirl-pak bag). Label each sample container with the sample type, date and time of collection. It is important that the sample identification on the sample container match what the FIELD SAMPLE ID is on the Food Analysis Request Form.
5. For finished retail food products, like beef jerky, submitting the product in its finalized package form is acceptable. Just ensure that there is enough sample for testing. Depending on the test type we would need anywhere from 200-grams (7 ounces) to 500-grams (18 ounces).
6. When collecting samples remember to also include an additional sample to serve as a Temperature Control or **TC**. If there are no additional samples available or if you are sending environmental surface swabs then a bottle (such as a Bacti-Water testing bottle) containing water can be substituted as the **TC**. The **TC** should always be in close proximity to the sample so that the sample temperature is accurately reflected. Remember to clearly indicate what you are using as the temperature control by marking "**TC**" on the temperature control with a black permanent. Be sure to record the temperature of the **TC** at the time of collection on the Test Request Form.

Food Sample Collection

- Complete a SLD **Food Analysis Request Form** or **FARF** for each sample that is to be submitted. For private submitters sending in routine compliance samples it is important that you write in your proper Submitter Code and Submitter Name (call the lab if you do not know your submitter code). Also mark an “X” on the “Other” box and write in **64000**. Other required information on the Food Test Request Form includes: the name and phone # of the sample collector, the date and time that the sample was collected, the sample type, field sample identity (ID), address and phone # of the food establishment involved, the Food Establishment # (which is the same as the submitter #), the reason for collection (usually routine surveillance), the temperature of the temperature control sample at the time of packing, and the test(s) being requested. Below is an example of what a properly filled out FARF would look like from a routine private submitter.

NEW MEXICO		FOOD ANALYSIS REQUEST FORM		LAB NO.
DEPARTMENT OF HEALTH		Scientific Laboratory Division 1101 Camino de Salud NE Albuquerque, N.M. 87102 Phone # (505) 383-9129		Place Lab No. sticker in this area
DATE & TIME OF RECEIPT AT SLD	USER CODE:	<input type="checkbox"/> 51000 (Epidemiology) <input type="checkbox"/> 55110 (NMED) <input type="checkbox"/> 70101 (VDS) <input type="checkbox"/> 70102 (NMDA) <input type="checkbox"/> 91300 (FDA) <input checked="" type="checkbox"/> Other: 64000		
SUBMITTER CODE: 171	Submitter Agency Name: _____			
COLLECTED BY: Doe, John	DATE SAMPLE COLLECTED: 8 / 11 / 10		MM / DD / YYYY	
Phone Number: _____	TIME SAMPLE COLLECTED: 14:00		Hour / Min	
SAMPLE INFORMATION ~ to be filled out by the Sample Collector				
SAMPLE TYPE: <input type="checkbox"/> FOOD <input checked="" type="checkbox"/> SWAB <input type="checkbox"/> OTHER: _____		FIELD SAMPLE ID: Packing Table A		
FOOD ESTABLISHMENT / SOURCE				
Name: Doe's Meat Store		Full Address: 1262 John Doe Ave		
		Albuquerque, NM 80020		
Food Establishment #: A7X		Phone #: 802-0000		
Reason for Collection <input type="checkbox"/> Suspected Foodborne Illness <input checked="" type="checkbox"/> Routine Surveillance <input type="checkbox"/> Consumer Complaint <input type="checkbox"/> RMS NARMS <input type="checkbox"/> Other		Product Information Manufacturer/Brand: _____ Code / Lot: _____		
Temperature Control at Time of Packing _____ 39 _____ °C / °F (Circle one) Comments: _____		SLD Use Only Temp Control at SLD: _____ °C Initials: _____ <input type="checkbox"/> Sample Not Intact <input type="checkbox"/> Sample Intact Mode of Arrival: <input type="checkbox"/> DMC <input type="checkbox"/> In Person <input type="checkbox"/> Other		
Analysis Requested (Check the following that applies:)				
<input checked="" type="checkbox"/> Listeria <input type="checkbox"/> Salmonella <input type="checkbox"/> E. coli O157:H7 <input type="checkbox"/> E. coli O157:H7 Robust Test(325-grams) <input type="checkbox"/> Campylobacter <input type="checkbox"/> Meat Carcass Swab Coliform/E.coli count <input type="checkbox"/> Standard Plate Count (food) <input type="checkbox"/> Aerobic Plate Count (swab) <input type="checkbox"/> Beta Hemolytic Strep		<input type="checkbox"/> S. aureus <input type="checkbox"/> B. cereus <input type="checkbox"/> Shigella <input type="checkbox"/> Y. enterocolitica <input type="checkbox"/> C. perfringens <input type="checkbox"/> C. difficile <input type="checkbox"/> Yeast / Mold <input type="checkbox"/> Gram Negative Culture <input type="checkbox"/> Gram Positive Culture		<input type="checkbox"/> C. sakazakii <input type="checkbox"/> Gram Stain <input type="checkbox"/> pH <input type="checkbox"/> Foreign Matter ID <input type="checkbox"/> Container Analysis <input type="checkbox"/> Coliform Count <input type="checkbox"/> E. coli Count <input type="checkbox"/> Vibrio species <input type="checkbox"/> Other: _____
SLD DCS Form 102 v.10/2010		For the proper food sample collection and shipping instructions please visit our website at http://www.nmehhs.state.nm.us/dcm.asp		

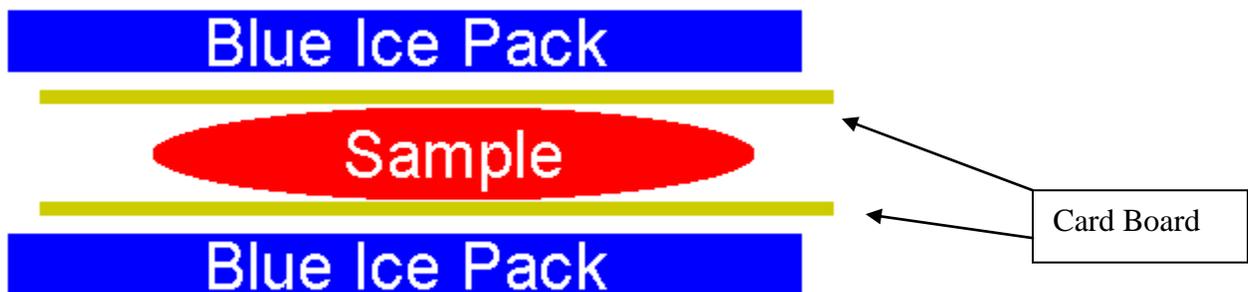
Food Sample Collection

8. Food samples should be held under refrigeration immediately after collection and should be maintained as such during transport to the laboratory. Do not freeze food samples as it causes a significant loss of viability of certain microorganisms. If the food sample was frozen when initially collected, then maintain it in the frozen state (dry ice recommended) when shipping it to the laboratory.

Note that for finished beef jerky, dry, and canned foods that are not perishable and are normally kept at ambient temperatures need not be refrigerated.

9. When shipping the samples to the laboratory that need to be transported in the frozen or refrigerated state use insulated containers of rigid construction (like Styrofoam ice chests). This will help ensure that the samples will arrive at the laboratory unchanged from the original temperature state at the initial time of collection. For samples that require to be shipped in the refrigerated state, use pre-frozen icepacks to keep the samples cold. If commercially made ice packs are not available then you can make your own ice packs by filling plastic beverage containers to about $\frac{3}{4}$'s full with water and then freezing. The use of loose ice should be avoided. If there is no other choice but to use loose ice then samples must be double bagged using Zip-lock bags.

10. When shipping meat carcass and environmental surface swabs ensure that the swabs are transported in the refrigerated state (0.1 to 10°C). The use of pre-frozen icepacks and insulated containers of rigid construction for transport is highly recommended. It is important to protect the swab sample from contact freezing during transport. Ensure that there is adequate insulation between the swab bag surface and the frozen ice packs. Use card board pieces so that contact freezing will not occur.



Avoid Direct Primary Sample Container Contact with Ice Packs
Do not forget the Temperature Control. Do not forget the Food Analysis Test Request Form
Keep the Temperature Control in close proximity to the sample

Food Sample Collection

11. Transport samples via the most rapid and convenient means available (e.g., in first person, courier, bus, or express mail).

Sample Submission REMINDER(S):

- ✓ Recommended Sample Submission days: Monday through Wednesday 8 AM to 4:30 PM. We do not accept samples the day before state holidays.
- ✓ Aseptic technique should be followed during the collection of the sample. Ensuring that the sample is intact (properly sealed) during transport to the lab is also critical.
- ✓ A Temperature Control should always accompany every sample. (A bottle filled with water can be used this purpose.)
- ✓ ***Completely fill out the Food Analysis Request Form.*** Remember that the **Date** and **Time of Collection** should always be included in the test request form. Also remember to include an emergency contact phone number as well so that we can notify the submitter directly during the instance of a positive result, sample rejection, or if we need more information.
- ✓ Use ice packs during transport of samples. The use of loose (wet) ice is not recommended.
- ✓ During the winter months: In order to prevent contact freezing of surface swabs during transport to the lab, place cardboard pieces between sample swab bags and the ice packs. (This serves as insulation for the swabs.)

Environmental Microbiology Food Sample Guidelines