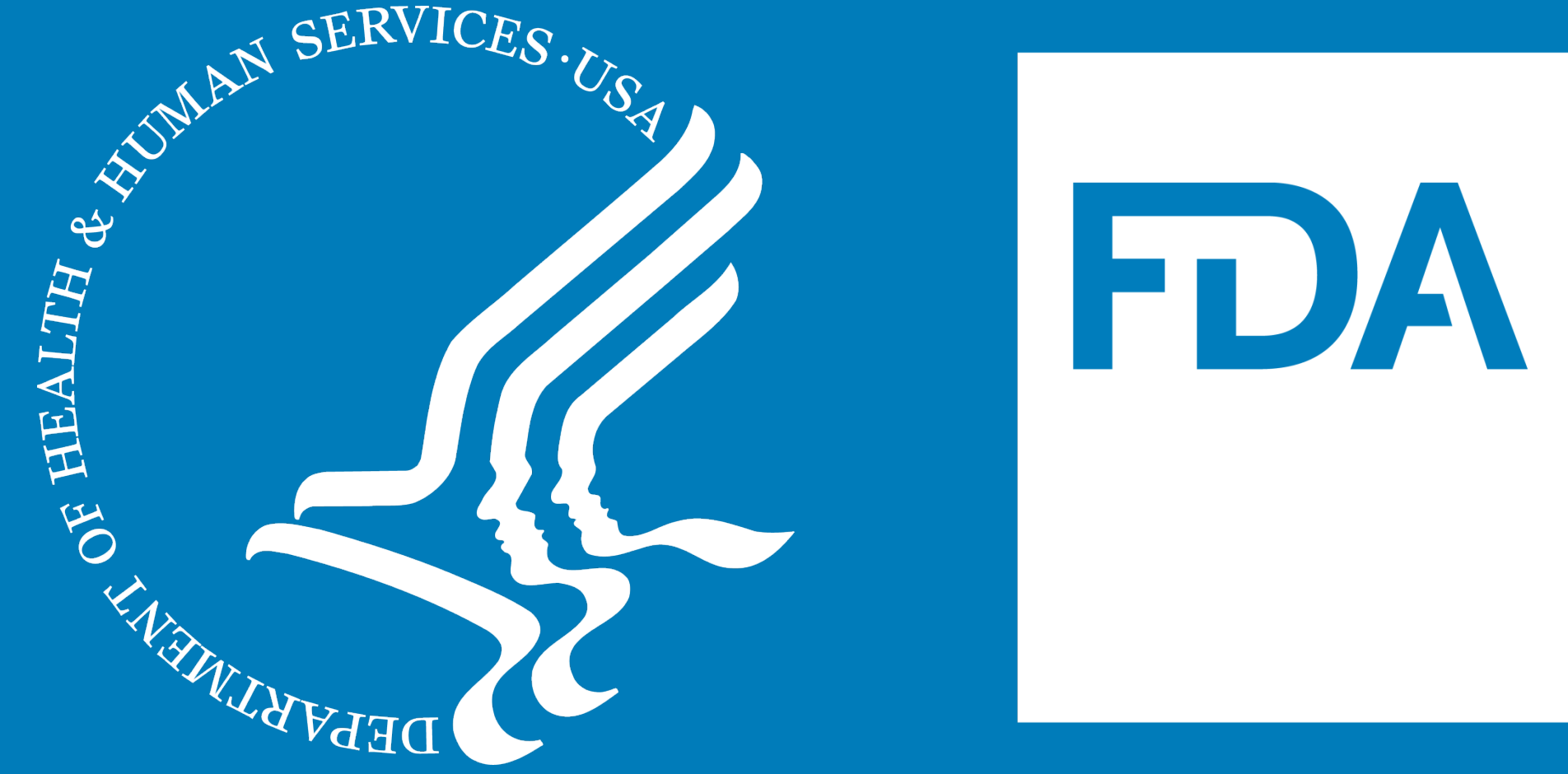


# Swing, Sample, Score

Christopher Slaten, MPH; Katie Silvia, MPA  
Rhode Island Department of Health, Center for Food Protection



## Background

The Rhode Island Department of Health’s (RIDOH) Center for Food Protection (CFP) coordinates a sampling training for state employees every two years. The most recent sampling training occurred on November 1, 2024. It was attended by inspectors from RIDOH CFP and Rhode Island Department of Environmental Management (RIDEM) Produce Safety. The purpose of the training is to refresh inspectors on various sampling techniques, ensuring they are well-prepared for sampling tasks, even if these opportunities are infrequent. The training is divided into three key components: environmental sampling, product sampling and sample collection form. These segments are designed to provide inspectors with the essential knowledge and skills necessary for conducting sampling effectively.

Participating organizations:

RIDOH Center for Food Protection

RIDOH State Health Laboratory

RIDEM Produce Safety



## The Numbers

Sampling is conducted to accurately identify the causative agent in an outbreak, enabling the removal of contaminated products from circulation and preventing further illnesses. Between 2015 and 2019, a total of 142 samples were collected across 15 different outbreaks. Of these samples, 27 tested positive for a causative agent, representing 19% of the total samples. Positive samples were associated with seven different outbreaks.

**Table 1.** Samples collected during Foodborne Illness Outbreaks in RI 2015-2019, by investigation  
Samples Collected During Foodborne Illness Outbreaks in RI 2015-2019, by Investigation.

Outbreak Investigations	Positive	Negative	Total Samples	% Positive
FBOI 1	0	8	8	
FBOI 2	2	2	4	50%
FBOI 3	0	6	6	
FBOI 4	1	2	3	33%
FBOI 5	0	16	16	
FBOI 6	0	8	8	
FBOI 7	8	22	30	27%
FBOI 8	4	0	4	100%
FBOI 9	9	2	11	82%
FBOI 10	0	8	8	
FBOI 11	2	7	9	22%
FBOI 12	0	10	10	
FBOI 13	0	6	6	
FBOI 14	1	17	18	6%
FBOI 15	0	1	1	
Total	27	115	142	19%

**Note:** These samples include multi-state foodborne illness outbreaks and foodborne illness outbreak investigations specific to Rhode Island.

## Environmental Sampling

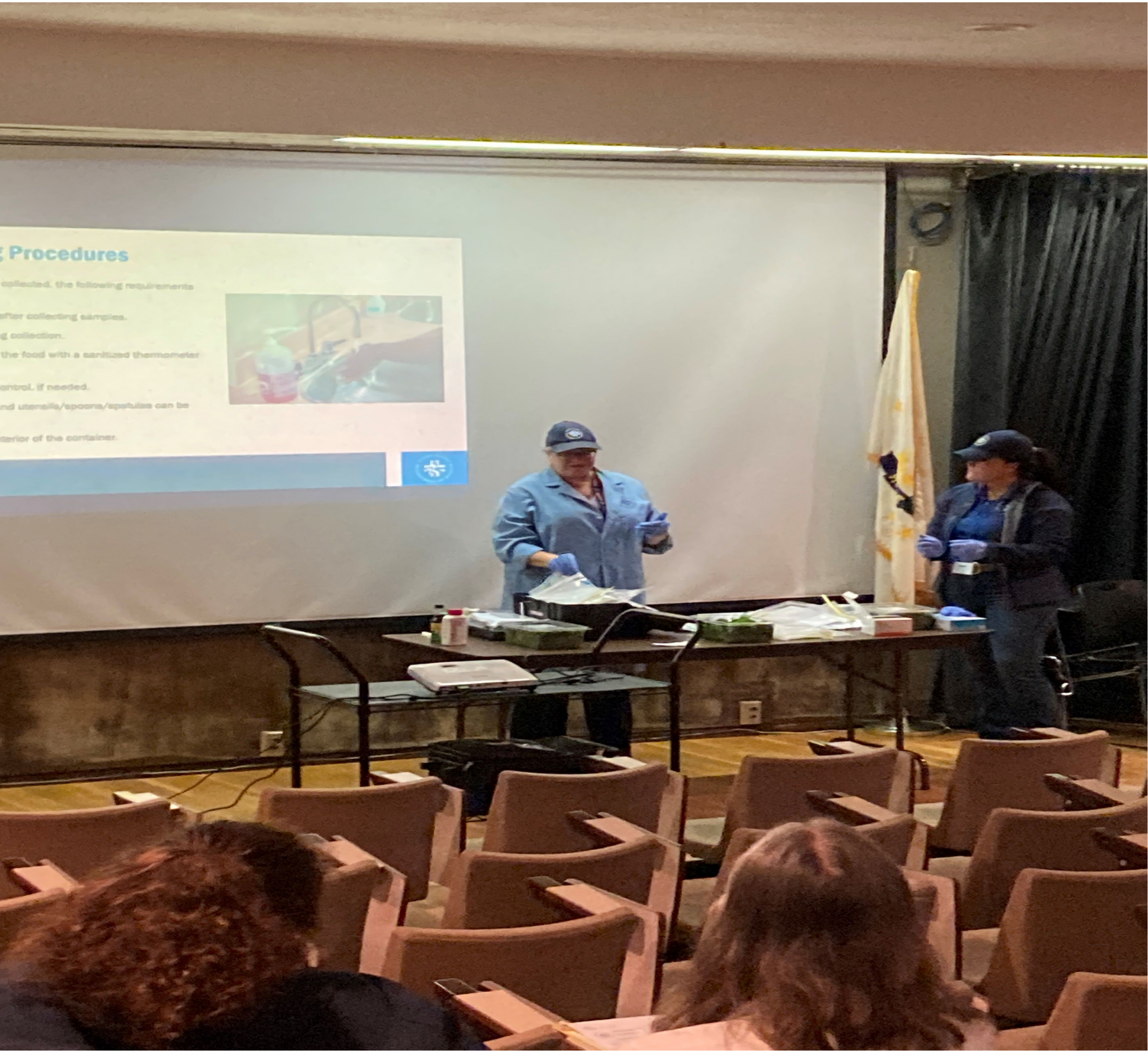
Inspectors may not have the opportunity to sample regularly, so CFP aims to train them in an environment where they can receive real-time feedback on their performance. Supervisors and senior inspectors were responsible for organizing groups to guide inspectors through the training sessions. Four distinct sampling-related stations are set up, with inspectors rotating between them.

At the environmental sampling stations, cutting boards and a small slicer are provided for the inspectors to familiarize themselves with. Each inspector is given real swabs and asked to walk through the sampling process for each item. After completing the sampling, inspectors collect and label the swabs. Due to the difficulty of handling swabs without contaminating the inside of the bags, inspectors typically work in pairs to ensure proper technique

## Product Sampling

The product sampling stations utilized leafy greens as a practice commodity. Inspectors visited various stations, as shown in Photos 2 and 3, to collect samples intended for E. coli O157:H7 testing. The inspectors were tasked with gathering 200 grams of leafy greens, which were placed into a whirl-pack bag, labeled accordingly, and accompanied by completed sample forms. The exercise was designed to demonstrate the correct quantity of leafy greens needed to obtain a 200g sample. This emphasized the importance of ensuring an adequate sample size is collected for accurate laboratory testing.

**Photo 1.** Laurel Stewart, EHS-Net Specialist, and Brendalee Viveiros, Chief, going over sample collection techniques.



## Sample Form Training

The sample collection form, shown in Figure 1, is reviewed in detail, with each section discussed and examples provided to ensure proper completion. The areas that inspectors must fill out are outlined below, including chain of custody and sample collection technique. It is crucial to ensure that no fields are left blank during this process, as internal audits are completed annually and reported to FDA as part of the Manufactured Food Regulatory Program Standards (MFRPS) grant.

**Figure 1.** RIDOH CFP Sample Collection Form

Field Sample ID:

Laboratory- Apply Sample ID Label Here

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Room 203, Cannon Bldg., 3 Capitol Hill, Providence, RI 02908

Sample Collection Form

Reason: ☐ Investigation ☐ LFFM Project ☐ Other FDA Assignment ☐ Contract Inspection

1. Product Type (Brand):

2. Product Packaging:

3. Collected at:

4. Establishment License Number:

5. Collection Address:

6. City:

7. Zip:

8. Manufacturer Name:

9. Address:

10. Country:

11. Collected by:

12. Collection Date/Time:

13. Condition: ☐ Hot ☐ Cold ☐ Frozen ☐ Ambient

14. Package Opened: ☐ Yes ☐ No

15. Product Code/Date of Manufacture:

16. Lot Number:

17. Manufactured on Premises: ☐ Yes ☐ No

18. Lot Sampled:

19. Exp. Date:

20. Date of Shipment:

21. Import Product:

22. Temp. Collected ° F:

23. Temp. Rec'd. ° F:

24. Method of Collection (Check all that apply):  
☐ Washed hands ☐ Wore gloves  
☐ Single Use Sterilized Utensil ☐ Single Use Sterilized Container  
☐ Sterilized Whirlpak ☐ D/E 3M Swabs with broth  
☐ Other (specify in comments) ☐ Pre-packaged Item Collected

25. Sampling Techniques:  
☐ Random Sampling  
☐ Selective Sampling  
☐ Environmental Swabbing  
☐ Other (specify in comment)

26. Chain of Custody – Date, Time or Transaction of Complaint from Field to Lab, etc. (please sign then print your name)

1. From (sign):

To (sign):

Print:

2. From (sign):

To (sign):

Print:

3. From (sign):

To (sign):

Print:

4. From (sign):

To (sign):

Print:

27. Food Chemistry Tests\*  
☐ PC02 Adipic Acid  
☐ FC08 Domoic Acid (ASP)  
☐ FC12 Fat  
☐ FC14 Filth  
☐ FC15 Heavy Metals  
☐ FC19 Lactose/Galactose  
☐ FC21 Manganese  
☐ FC23 Mercury  
☐ FC24 Moisture  
☐ FC28 Nitrite  
☐ FC29 Organoleptic  
☐ FC30 pH  
☐ FC45 Water Activity  
☐ FC48 Pesticides  
☐ TOMMSC Total Solids (GCMS)  
☐ Other (specify)

28. Food Micro Tests\*  
☐ SM08 Enteri  
☐ SM18 Salmonella  
☐ SM19 Clostridium perfringens  
☐ SM20 Clostridium Botulinum  
☐ SM15 Staph. aureus  
☐ SM16 Bacillus cereus  
☐ SM17 Vibrio  
☐ SM44 Campylobacter  
☐ SM49 Shigella  
☐ SM49 E. coli MPN  
☐ Other:  
☐ SM42 Shiga toxin-producing E. coli  
☐ SM43 Male Specific Bacteriophage  
☐ Other:

29. Product Category  
☐ Grains ☐ Spices  
☐ Baking ☐ Beverages  
☐ Dairy Products ☐ Candy and Desserts  
☐ Frozen Desserts ☐ Confections  
☐ Eggs ☐ Multiple Foods  
☐ Fishery Products ☐ Food Additives  
☐ Meats ☐ Equipment  
☐ Fruit ☐ Containers  
☐ Nuts ☐ Other:  
☐ Oils / Shortening ☐ Other:  
☐ Vegetables ☐ Other:  
☐ Detergents ☐ Other:

Comments:

**Photo 4.** Inspectors practicing sampling for leafy greens.



## Conclusion

The training was deemed a success, with a strong turnout and excellent participation from attendees. It served as a valuable training for identifying areas of improvement within our sampling process. Inspectors were encouraged to provide feedback throughout the session, offering suggestions to enhance operational procedures.

Key recommendations from the training include:

- 1. Sample Sign-In Sheet Modifications:** It is recommended to update the sample sign-in sheet to include temperature readings at both intake and storage. This form is utilized when CFP staff must store samples at RIDOH overnight.
- 2. Regular Calibration and Continuous Monitoring:** CFP should explore the implementation of a regular calibration schedule for the thermometer used in the CFP fridge to ensure accurate readings. Explore adding a continuous monitoring thermometer for the CFP fridge to maintain consistent temperature control and safeguard sample integrity.
- 3. Standardized Sampling Assignment Template:** Develop a standardized template for sampling assignments that will contain all requested samples and control measures.
- 4. Expanded Sampling Photo Requests:** Update the sampling photo request to include broader facility photos. This will provide staff with a clearer understanding of the facility layout.
- 5. Procurement of New Sampling Equipment:** Consider acquiring new equipment, such as knives, tongs, Q-tip swabs and sterile gloves, to ensure sampling equipment is up to standard and fully hygienic.

The post-training survey also received positive feedback, with respondents providing favorable ratings. This further reinforces the success of the training and highlights the value it brought to attendees in terms of both learning and engagement.

**Photo 2.** Inspectors practicing sampling for leafy greens.

**Photo 3.** Inspectors prepare to swab the deli slicer.

