



Aseptic Sampling in a Hydroponic Greenhouse

Heather Birt, MDARD Recall Specialist
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Incident Summary



Collected LFFM sample
of hydroponically grown
lettuce



Tested positive for
Listeria monocytogenes



Linked to a cluster from
August 2022



On-farm investigation

Response Activities

3/22

Hydroponically grown lettuce sampled

Submitted to Geagley Lab

3/29

Cannot rule out for *Listeria spp.*

4/3

Positive *Lm* and isolates sent for analysis

Produce Safety Unit (PSU) notified farm

4/4

PSU began on-farm investigation

RRT notified FDA partners

4/5

PSU on-farm investigation continues

Farm initiates a voluntary recall for affected lettuce



Response Activities



4/6

Isolates related to historical cluster

Food, PSU, and RRT met with FDA and PSN

Farm voluntarily recalls all product

4/7

RRT, Food, and PSU hold tactics meeting for sampling

Food staff collect samples at co-packer, distributor, and retail locations

RRT notified MN about isolates

4/10

PSU continued on-farm investigation

PSU sampled seed and peat

Food staff swab on-farm

4/11-4/17

MDARD and FDA meet regarding communications

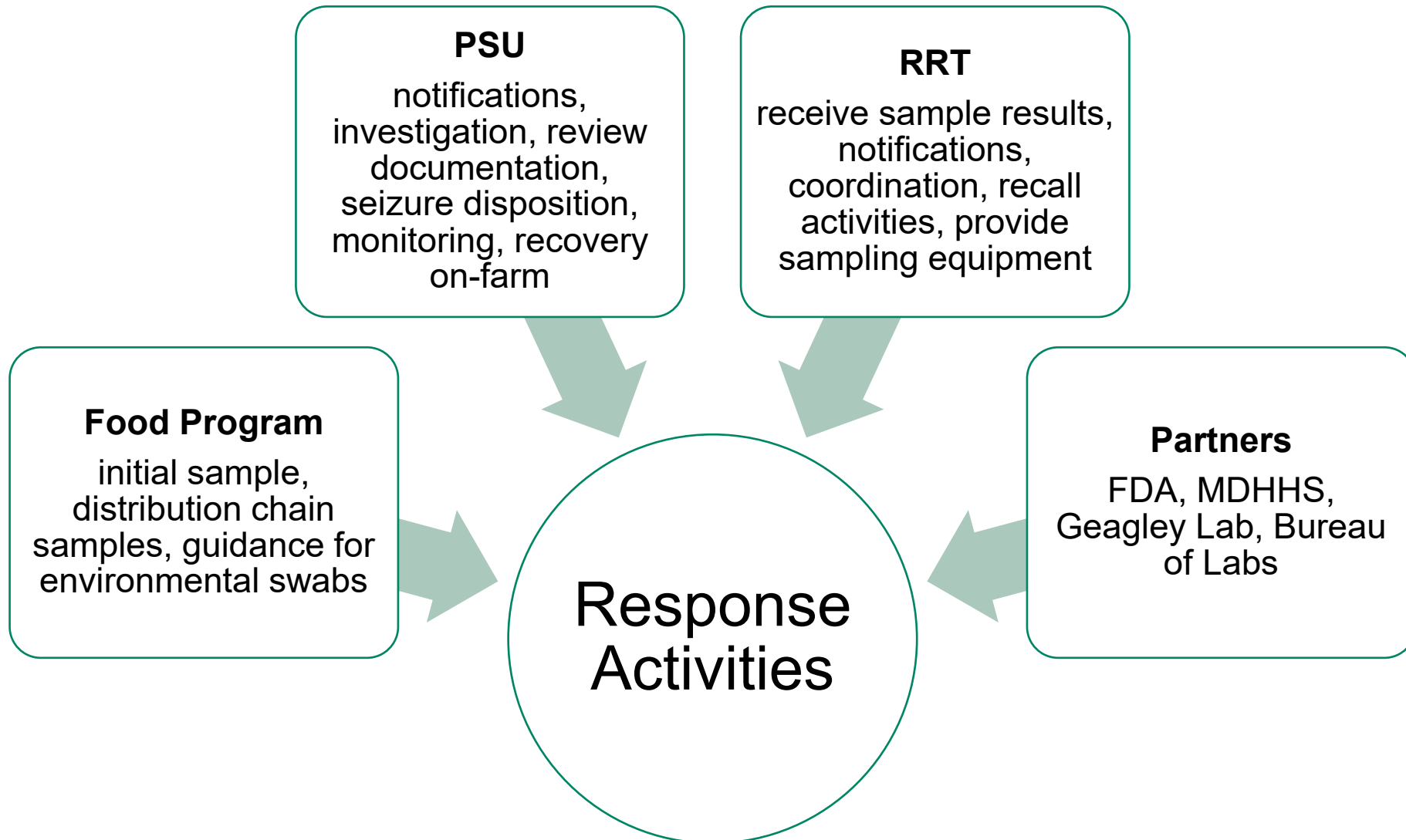
PSU shared investigation finding with farm

PSU oversee disposition of some product

4/28

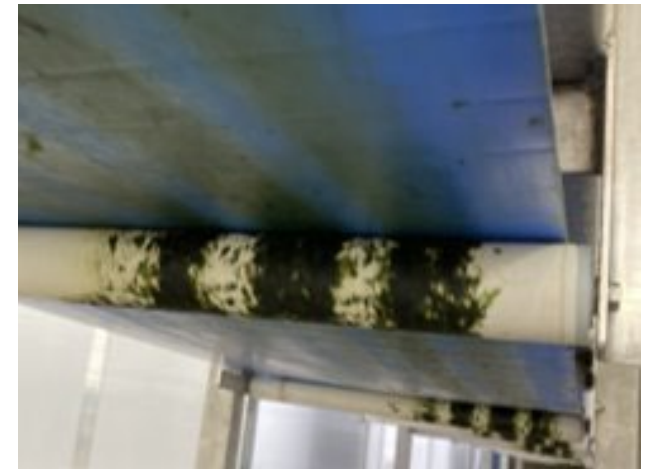
Farm provides a Root Cause Analysis

Collaboration



Investigation

- Conducted between April 4, 2023 – April 12, 2023
- Observations during investigation
 - Condensate accumulation and drip
 - Roof leaks
 - Excessive pooled water
 - Power washing in areas where *Listeria* spp. had been found in EMP
 - Inadequate sanitation procedures and frequency
 - Spread of agricultural water throughout facility
 - Lack of product traceability
- Product seizure and disposition



Sampling Plan

- Manufactured Foods team re-assigned from FDA contract sampling
 - Second pre-meeting held to reestablish goals of the assignment
- PSU assigned peat and seed sampling

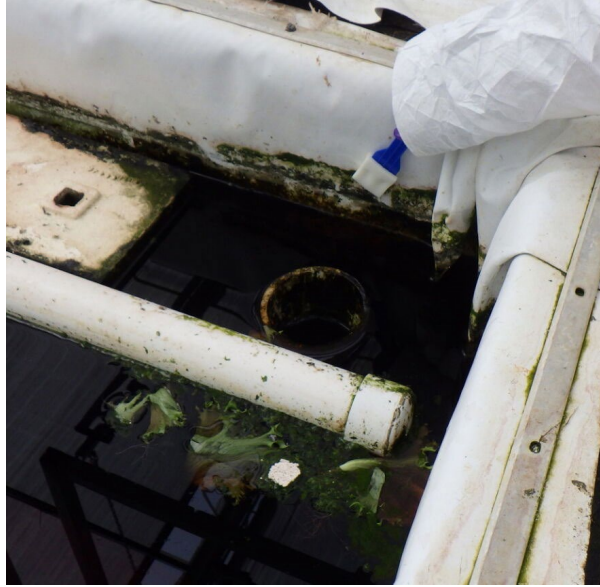


Environmental Targets

- Implicated greenhouse and packaging rooms
- Poor product storages practices
- Areas where *Listeria* spp. was found by firm
- Known facility issues
 - Condensation and roof leaks
 - Pools of standing water
 - Agricultural water
 - Poor sanitation









Response Activities

5/1

PSU reinspect on-farm

Farm provides a Corrective and Preventive Action Plan to PSU

5/5

Investigation samples negative for *Listeria spp.*

5/10

PSU received revised SOPs from the farm and conclude the follow-up investigation

5/18

PSU witness disposition of remaining seized product

Ongoing

Recovery Phase

Monitoring sample results



Lessons Learned

Design and use of CEA facilities bring about specific considerations for environmental sampling

Opportunities for RRT and inspection program overlap help develop capacity and skills throughout the agency

Developing or sharing outreach materials regarding whole genome sequencing and the risk of commingling lots would be beneficial to industry



Thank you!

