

Sal-melon-ella Response

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Abstract

As of 11/9/2020 there were 77 Salmonella Newport cases from CA (1), FL (1), IA (1), IL (11), IN (12), KY (4), MI (28), MN (1), MO (2), NY (1), OH (10), PA (1), SC (2), TN (1), WI (1). Isolation dates were 7/7/2020 - 10/13/2020. The suspect vehicle was melons (cantaloupe and watermelon).

- 26/29 (90%) of people reported eating any watermelon, cantaloupe, or a cantaloupe variety referred to as Honey Rock (Athena type). 10 people reported eating both watermelon and cantaloupe, 9 people reported only eating cantaloupe, and 7 people reported only eating watermelon.
- Trace-backs for both cantaloupe and watermelon converged on an Indiana melon grower, although the watermelon traceback included a multitude of other sources as well.
- Indiana Department of Health (IDOH), Food Protection Division (FPD) investigators visited the farm to collect records and then later returned with the US Food and Drug Administration (FDA) to investigate further and collect environmental swabs, product from the pack house, soil samples, drag swabs, and water samples from the field.

Introduction

Early in the investigation, communication occurred between Michigan Department of Health and Human Services (MDHHS) and Indiana Department of Health (IDH) Epidemiology Resource Center (ERC) regarding two clusters of Salmonella with a few closely-related Indiana isolates. MDHHS reached out to gather more information on the isolates. There appeared to be a strong melon signal in the clusters.

Michigan Department of Agriculture and Rural Development (MDARD) conducted a traceback on a cluster of 4 cases who purchased honey rock from a chain grocer. The traceback led to a produce farm located in Indiana.

Due to the rapid growth of the outbreak, it was assigned to the FDA Coordinated Outbreak Response and Evaluation (CORE) team. Since most of the purchases involved three major retail chains across multiple states, traceback investigations were conducted at the national level. There were two convergences for the cantaloupe - one involving the Indiana farm and a Florida broker and although there were several watermelon sources there was a convergence at the same Indiana farm.

The Indiana RRT partnered with the Indiana Produce Safety Team to share information. This was a novel approach to produce outbreaks for Indiana. Whole seedless watermelons from various farms were collected from several retailers in Indiana. All were negative. Several pumpkins grown from the same implicated farm were tested. All were negative.

The IN RRT visited the farm for records collection and shared the information with FDA. A second visit was conducted, but weather conditions prohibited accomplishing all the assignments. The third visit allowed the team to complete the rest of the assignment. The assignment included product sampling and environmental sampling of the pack house to include the cantaloupe and watermelon line, re-usable plastic containers, and the reconstructed school buses and wagons. Furthermore, soil samples and drag swabs were collected from two fields included in the traceback.

Federal and State Partnership

The IDOH FPD houses both the Rapid Response Team and the Produce Safety Team. This was the first outbreak with a strong response of the two teams working together in collecting samples, information onsite, and conference calls.

The MDHHS and MDARD provided essential information with IDOH to work on finding commonalities among cases including exposure information and tracebacks early in the investigation.

Both MDARD and IDOH FPD collected a total of 95 produce samples grown by various farms at retailer grocers and distribution centers. All were negative for the outbreak strain.

Tracebacks for the cantaloupe conducted by FDA and Michigan identified a convergence for a farm in Indiana and a broker in Florida. Both the farm and broker were visited for records. Information provided identified the grower in Indiana as source needing additional investigation.

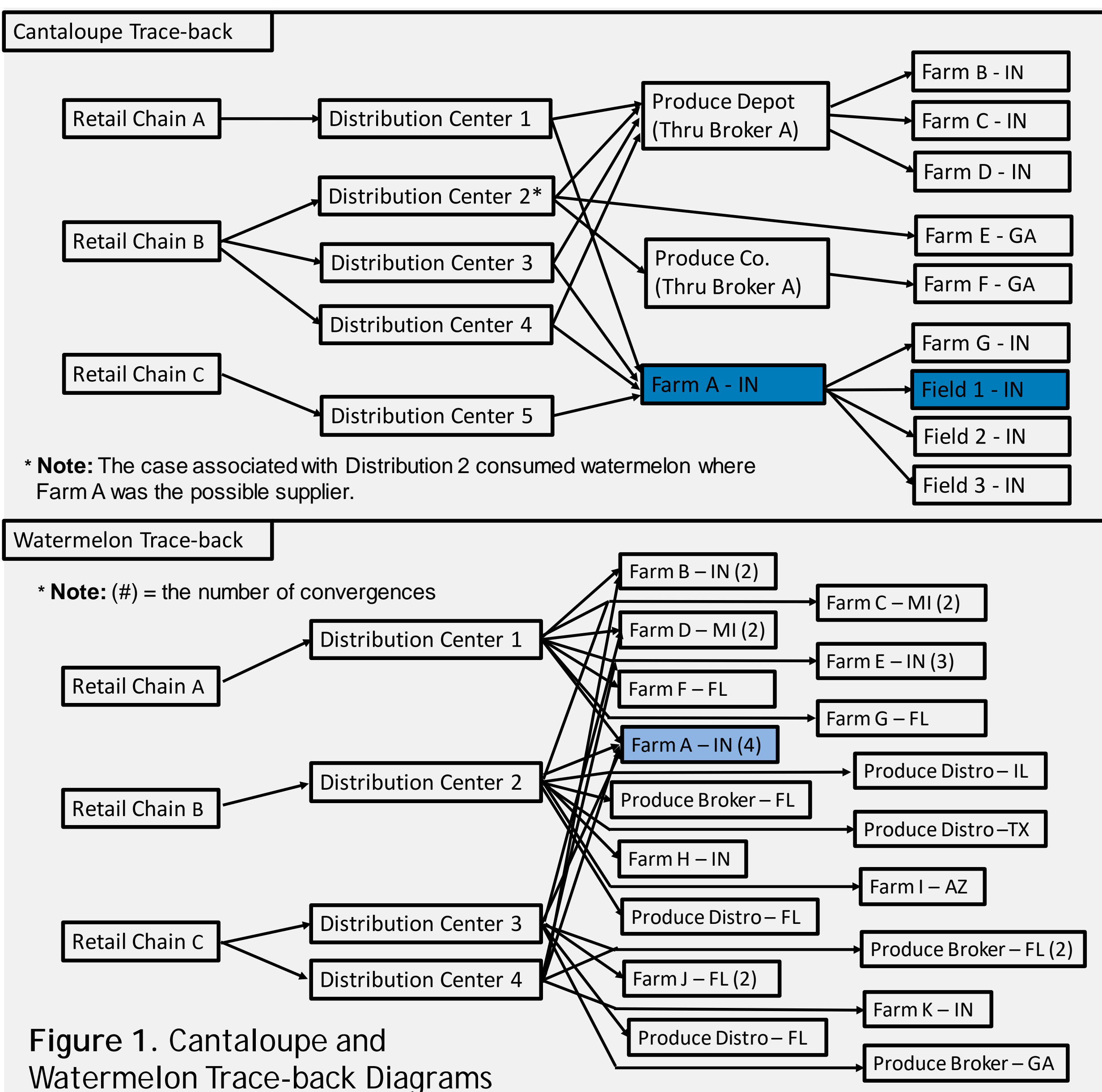


Figure 1. Cantaloupe and Watermelon Trace-back Diagrams



Figure 1. Small melon and pumpkin displays at retail grocers where several samples were collected

Results and Discussion

A total of 55 produce samples (grown by Farm A), 240 environmental samples of the pack house, re-usable plastic containers, converted school buses, and wagons, 18 soil samples from two fields, 10 field drag swabs, and 2 water samples from a field well were collected. So far, 2 soil samples from one field were positive for *Salmonella spp.* and one environmental swab from a converted school bus containing watermelon was cannot rule out (CRO) for *Salmonella spp.* Several samples are still pending.

The farm investigation revealed the following concerns;

- The watermelon and cantaloupe packing lines and reconstructed school buses did not have an adequate design, workmanship, or maintenance to enable cleaning.
- Equipment used for transporting produce did not appear to be adequately cleaned and contained produce/food package remnants.
- Observed a few instances of dripping from pipes above produce pallets.
- There was missing or incorrect documentation for cleaning and sanitization, traceability, and laboratory testing.



Figure 2. Reconstructed school bus used to transport produce to the pack house.



Figure 3. Muddy conditions in the field during the first inspection and field workers eating with nearby port-a-potties and hand washing stations.

Conclusion

The grower was visited by the Indiana Department of Health (IDOH), Food Protection Division (FPD) three separate times in response to this investigation. IDOH FPD team consisted of staff from the Produce Safety Team, the Rapid Response Team, and the Regulatory Team. The first visit involved a record collection and an interview of the farm owners and the food safety manager. The second and third visit involved a joint Indiana and FDA investigation team.

A total of 55 produce, 240 environmental, 18 soil, 10 field drag swabs, and 2 field well water samples were collected in this response. Currently, 2 soil sub samples tested positive (awaiting subtyping and whole genome sequencing) and one environmental sub sample tested cannot rule out (CRO) for *Salmonella spp.* The samples from the pack house, the reusable plastic containers, and the 45 product samples (watermelon and pumpkins collected by IDOH FPD) were negative. The 10 watermelon samples collected from the pack house, 10 drag swabs, 2 water samples, and several soil samples are still pending.

Many issues were observed while at the farm including poorly designed buses with porous and damaged wood floors, poorly designed and maintained packing house lines with many areas of harborage. Furthermore, incomplete record keeping prevented an effective initial traceback and field investigation which required clarification. Furthermore, additional cases were added to the outbreak and the grower continued to ship product after becoming aware of the investigation. However, the additional cases did not appear to be related to watermelon and the traceback involved many potential sources. A fourth visit occurred involving the FDA and IDOH FPD so that the farm could be issued a report detailing the observations.

Several produce growers in Indiana also use similar converted school buses. Discussions and assessments will occur to determine if the issues identified with these converted school buses and produce lines appear elsewhere.

This poster was created by Tracy Hawkins and Laurie Kidwell from the Indiana Department of Health (IDOH), Food Protection Division (FPD).