

**ERU ACTIVITY SUMMARY REPORT**

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| <b>INVESTIGATION NAME:</b><br>20004_Korea_EnokiMushrooms_LM_MI_030220                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                    | <b>ASSIGNMENT DATE:</b><br>3/2/20 |
| <b>ERU LEAD:</b><br>Nikolas Storm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                    |                                   |
| <b>FIRM NAME:</b><br>Multiple                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                    |                                   |
| <b>ADDRESS:</b><br>Multiple                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>CITY:</b><br>Multiple                                                           | <b>ZIP CODE:</b><br>Multiple      |
| <b>FIRM CONTACT:</b><br>Multiple                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>POSITION:</b><br>Multiple                                                       | <b>PHONE:</b><br>Multiple         |
| <b>E-MAIL ADDRESS:</b><br>Multiple                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>FAX:</b><br>N/A                                                                 | <b>CELL PHONE:</b><br>N/A         |
| <b>REPORTING PERSON:</b><br>Lauren Edwards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>AGENCY:</b><br>Michigan Department of Agriculture and Rural Development (MDARD) | <b>PHONE:</b><br>517-256-4781     |
| <b>ACTIVITY:</b> <input type="checkbox"/> PRODUCE INVESTIGATION <input type="checkbox"/> PFR ENVIRONMENTAL <input type="checkbox"/> RETAIL ENVIRONMENTAL<br><input checked="" type="checkbox"/> TRACEBACK<br><br>INVESTIGATION<br><br><input type="checkbox"/> TAMPERING <input type="checkbox"/> COMPLAINT <input checked="" type="checkbox"/> SAMPLING <input type="checkbox"/> TECHNICAL ASSISTANCE <input type="checkbox"/> OTHER:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                    |                                   |
| <b>BACKGROUND:</b><br><p>From 2017 to 2020, the California Department of Public Health (CDPH), Food and Drug Branch (FDB) participated in a multi-state outbreak investigation of <i>Listeria monocytogenes</i> (LM), cluster code 17010MLGX6-3WGS. The U.S. Centers for Disease Control and Prevention (CDC) originally opened this cluster in 2017 and repeatedly closed and re-opened it due to the lack of a specific food item of interest. As of March 2, 2020, CDC reported 36 cases from 17 states including nine cases in CA. Isolation dates ranged from 11/23/2016 to 12/13/2019. The median age of cases was 67 years; 58% of cases were female; and 30 hospitalizations and four deaths were reported. Six pregnancy-associated illnesses with two fetal loss were also attributed to this outbreak.</p> <p>In February 2020, this cluster code was re-opened by CDC after the Canadian Food Inspection Agency (CFIA) posted multiple clinical and food isolates that were closely related to the outbreak strain. The food isolates included samples of enoki mushrooms that were imported from Korea.</p> <p>In response to these findings, the Michigan Department of Agriculture and Rural Development (MDARD) collected samples of enoki mushrooms from a retail store linked to a patient in Michigan. These samples were collected in late February 2020. The enoki mushrooms collected by MDARD were imported from Korea and were distributed by Sun Hong Foods Inc. located in Montebello, California.</p> <p>On March 2, 2020, MDARD notified FDB that two of the Sun Hong Foods Inc. branded enoki mushrooms tested positive for LM.</p> |                                                                                    |                                   |

## SUMMARY OF ACTIVITY:

In response to the findings reported by MDARD, FDB initiated surveillance sample collection of enoki mushrooms at retail locations. On March 3, 2020, FDB visited [redacted] and [redacted] and collected a total of nine samples of enoki mushrooms. Among the nine samples collected, two were [redacted] brand enoki mushrooms and seven were Sun Hong Foods brand enoki mushrooms. All nine samples were labeled "Product of Korea".

Sample collection was conducted aseptically with the use of sterile implements. Each sample was placed inside of a sterile whirlpak bag and labeled with a specific FDB sample identifier number. Detailed photographs of the samples including the front and back panels of the packaging and label information were also collected. After collection, the samples were placed in a cooler packed with gel icepacks. At the end of sample collection, the samples were transported back to FDB's headquarters in Sacramento, CA. The samples were placed in a clean plastic bag, sealed with an evidence seal, and labeled with a "Chain of Custody" evidence tag. The samples were stored overnight inside the evidence refrigerator located inside FDB's secured evidence storage room. In the morning of March 4, 2020, the samples were checked-out of the evidence storage room and were hand-delivered to the Food and Drug Laboratory Branch (FDLB) for *Listeria* analysis.

On March 6, 2020, MDARD notified FDB that the Sun Hong Foods enoki mushroom isolates were closely related to the clinical isolates of the outbreak strain (Attachment A).

In the afternoon of March 6, 2020, the U.S. Food and Drug Administration (FDA), CDC, MDARD, and FDB contacted Sun Hong Foods Inc. by phone and notified management of the Michigan samples that tested positive for LM. The firm agreed to conduct a voluntary recall of all 7.05 oz/200g retail-packed Sun Hong Foods Inc. branded enoki mushrooms (Attachment B). During the call, management at Sun Hong Foods Inc. confirmed that one of their enoki mushroom suppliers was Green Co. LTD of South Korea.

After the call with Sun Hong Foods Inc., FDB requested an inspection at the Sun Hong Foods' facility in Montebello, CA. Investigator Scott Stys embargoed all enoki mushrooms (100g, 150g, and 200g packages) present in the warehouse. In addition, Investigator Stys issued a Notice of Violation to Sun Hong Foods Inc. for selling adulterated products (Attachment C).

Due to the significant concern for public safety, FDB initiated additional sample collection for other brands of enoki mushrooms in retail markets. On March 10, 2020, FDB staff visited three SF Supermarket stores in Sacramento, CA:

1. SF Supermarket - 5280 S Land Park Dr. Sacramento, CA 95822
2. SF Supermarket - 6930 65th St #123 Sacramento, CA 95823
3. SF Supermarket - 4562 Mack Rd. Sacramento, CA 95823.

FDB staff collected a total of 18 samples of Guan's brand enoki mushrooms from the three retail stores. The Guan's enoki mushrooms were distributed by Forest Mushroom Food Inc. located in Commerce, CA (dba Guan's Mushroom Co.). Sample collection was performed aseptically following the procedure described above. In the morning of March 11, 2020, the samples were hand-delivered to the Food and Drug Laboratory Branch (FDLB) for *Listeria* analysis.

On March 16, 2020, FDLB reported to FDB that the [redacted] and Sun Hong Foods brand enoki mushrooms collected on March 3, 2020 were negative for LM. However, eight out of the nine samples were positive for *Listeria* spp. (Attachment D).

On March 19, 2020, FDLB reported to FDB that one sample of Guan's enoki mushroom (761031020-P007) tested positive for LM. In addition, nine samples tested positive for *Listeria* spp. (Attachment E).

On March 20, 2020, FDB and the FDA contacted management at Forest Mushroom Food Inc. by phone and notified them of the positive LM finding. The firm agreed to conduct a voluntary recall of all 7oz/200g retail packed Guan's enoki mushrooms (Attachment F). On March 20, 2020, FDB initiated a traceback investigation

to determine the source of the positive Guan's enoki mushroom sample. The traceback investigation determined that Green Co. LTD of South Korea was the sole supplier of enoki mushrooms to Forest Mushroom Food (Attachment G).

Additionally, FDB was made aware by the FDA that a voluntary recall for enoki mushrooms was initiated by H&C Foods Inc. (Brooklyn, NY) on April 7, 2020 (Attachment H). These recalled mushrooms were also supplied by Green Co. LTD of South Korea. This recall was initiated after LM was found on import samples collected the FDA. Subsequently, WGS analysis determined that the LM found in the positive samples of H&C Foods Inc. enoki mushrooms was closely related to the outbreak strain.

On April 15, 2020, FDLB reported to FDB that the Guan's enoki mushroom isolates were also closely related to the outbreak strain (Attachment I).

#### **FINDINGS AND CONCLUSIONS:**

Green Co. LTD of South Korea was the common supplier of enoki mushrooms between Sun Hong Foods Inc., Forest Mushroom Food Inc., and H&C Foods Inc (Attachment J). The enoki mushroom samples collected from these importers tested positive for LM and were later confirmed to be closely related to the outbreak strain by WGS.

In response to these findings, Green Co. LTD was placed on Import Alert 99-23 and Import Alert 99-35 by the FDA on April 7, 2020 and April 13, 2020 respectively (Attachment K). In addition, the CDC issued a Do Not Consume Food Safety Alert for enoki mushrooms from Sun Hong Foods Inc., Guan's Mushroom Co., and H&C Foods Inc. on April 17, 2020 (Attachment L).

This outbreak investigation is ongoing.

#### **SUPPORTING DOCUMENTATION:**

Attachment:

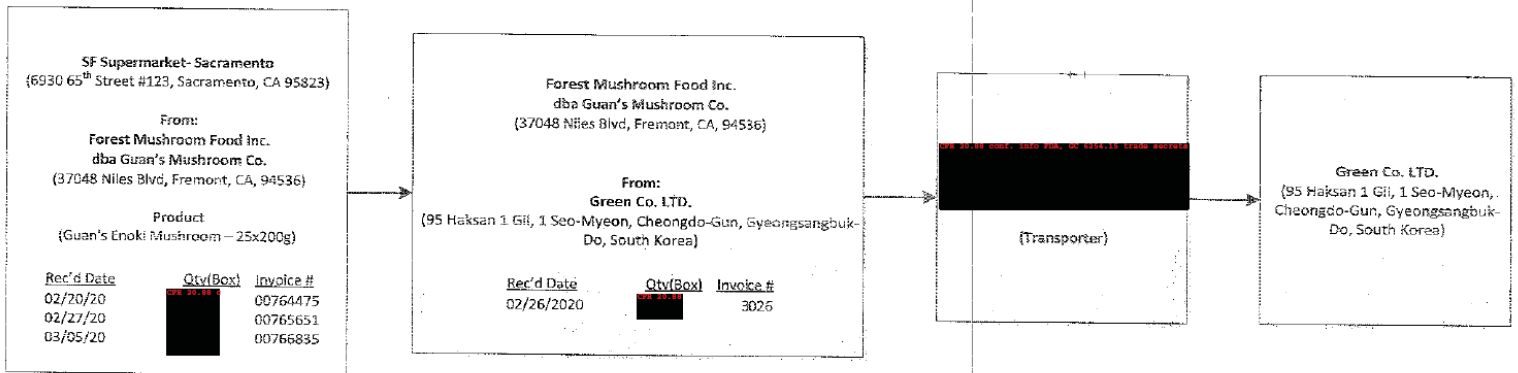
- A. MDARD WGS Results
- B. Sun Hong Foods Inc. - Recall Announcement
- C. Sun Hong Foods Inc. - NOV and Embargo
- D. Sun Hong Foods Inc. - Lab Results
- E. Guan's Mushroom Co. - Summary of Positives
- F. Guan's Mushroom Co. - Recall Announcement
- G. Guan's Mushroom Co. - Traceback Diagram
- H. H&C Foods Inc. - Recall Announcement
- I. WGS Results for Guan's Enoki Mushroom
- J. FDA - Traceback Diagram
- K. FDA - Do Not Consume Advisory (Import Alerts 99-23 & 99-35)
- L. CDC - Do Not Consume Food Safety Alert

**ERU ELECTRONIC FILE LOCATION:** <J:\ERU\Investigations\Investigations 2020\20004 Korea EnokiMushrooms LM MI 030220\REPORTS>

**ENFORCEMENT ACTIONS:** ☒ NOV ISSUED ☒ EMBARGO ☐ VC & D ☐ REG. LETTER ☐ REFERRAL ☐ OTHER:

|                                                                                                                                                             |                  |                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------|
| <b>RECOMMENDATIONS:</b> <input checked="" type="checkbox"/> NAI <input type="checkbox"/> MINOR VIOLATIONS / FIRM CORRECTING <input type="checkbox"/> OTHER: |                  |                                    |
| <b>COMMENTS / FOLLOW-UP ACTION:</b>                                                                                                                         |                  |                                    |
| <b>ERU LEAD SIGNATURE:</b> <i>Storm</i>                                                                                                                     | <b>INV.#</b> 761 | <b>REPORT DATE:</b><br>5/28/20     |
| <b>SUPERVISOR SIGNATURE:</b> <i>[Signature]</i> #727                                                                                                        |                  | <b>DATE REVIEWED:</b><br>5/27/2020 |
| <b>SUPERVISOR DISPOSITION:</b> Continue to monitor for additional illnesses linked to this outbreak.                                                        |                  |                                    |

**Listeria monocytogenes cluster 1710M1.6X6-3WGS**  
**Guan's Enoki Mushroom – 25x200g**  
**Traceback Diagram - Final**



California Department of Public Health Food & Drug Branch (CDPH-FDB)  
This diagram contains confidential information intended for CDPH use in its law enforcement and/or regulatory activities. Document may not be further distributed outside of CDPH without consent of CDPH-FDB  
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Attachment G  
3/24/20  
N. Storm #761