FoodChain-Lab web application "hands-on" training

Scenario on *Clostridium botulinum* in dried salted roach

Part 1

Disclaimer

This scenario was inspired by a real incident with *Clostridium botulinum* in roach (https://www.ecdc.europa.eu/sites/default/files/media/en/publications/Publications/01-12-2016-RRA-Botulism-Germany%2C%20Spain.pdf).

However, all stations and deliveries are fictitious. If there is by chance any similarity to existing food businesses, this was not intended.

Nice to know for troubleshooting:

If you experience problems with FCL Web (e.g. it is not responding), the following might help:
- Go to the dashboard ("FoodChain-Lab" button on the left side of the blue menu bar) and then click on "Tracing View" button.
- Reload the webpage, click on "Tracing View" button and load the dataset again.
- Try a different browser. As stated below, we recommend the latest version of Chrome or Firefox.

Access to FCL Web

Please go to the FoodChain-Lab web application (https://fcl-portal.bfr.berlin). It is recommended to use a desktop PC or laptop with Chrome or Firefox as browser for the optimal user experience. Using a mobile phone or tablet is not recommended.

Please log in using your FoodChain-Lab web credentials.

If you have not registered, yet, please do so at https://fcl-portal.bfr.berlin/register.

General information

Most functions in FCL Web can be accessed
  … either by right-click on stations/deliveries/empty space
  … or in the blue menu bar on the header of the app

The following screenshot gives you a quick overview on FCL Web. Detailed exercise instructions are given in the tasks below the screenshot.

View, select and filter

After you have logged in, click on the "Tracing View" button.

Left-click on the button "Upload Data" in the blue menu bar, select "FCL file (.json)" and upload *FCL_Seafood_scenario.json* from the exercise material you received (via the BfR data cloud link).

> You can see stations (squares, circle, triangles, …) that represent various types of food businesses. The arrows are deliveries. The text in the middle of the lines is the product which is delivered from one station to another.

Apply the farm-to-fork layout by right-click into the empty space -> Apply Layout -> Farm-to-fork.

If needed, make further adjustments to the network by moving the stations via drag-and-drop. To select multiple stations, press shift, left-click on the white background and drag the mouse to open a selection rectangle. In order to move the whole supply chain, left-click on the background and drag.

If you need to adjust the node size or font size, open the graph settings by clicking on the menu button (three stripes) in the blue menu bar, click on the "Graph Settings" tab. You can close the tab by clicking on the menu button again. If you would like to keep the menu open but still want to see the whole supply chain, simply click on the double cross in the top left to adjust the view.

First, we need to tell FoodChain-Lab that the five stations "Case 1" to "Case 5" (representing ill people) were positive for the outbreak strain.
-   Press shift, select all five stations with a left-click, then right-click on one of these stations and select "Mark as Outbreak".

The size of some stations has increased, indicating a change in score. A score of 1 means that a station is connected to all outbreak stations (here: cases 1-5). A score of 0 means that the stations is not connected to any outbreak station. To check the changes in the scores of the stations, right-click on a station and select "Show properties". You can also find the scores in the filter table: Open the menu and select the filter tab (next to "Type of business").

What are the common links (stations highlighted in yellow) between all the cases?

> Nice to know: The score is a measure for the number of disease cases to which each company and delivery is connected via deliveries. The higher the score, the more connections exist to outbreak cases. This helps you to prioritize the next steps of your tracing investigation since companies with higher scores might be more important in the situation. However, you need more evidence in addition to the tracing investigation to evaluate the situation.

In which country is Versevis Ltd. located and to what type of business does it belong? Hint:
-   Open the menu and click on the "Filter" tab. Then left-click into the search box below the heading "Name" and type "versevis"; or…

- check the legend, if you have already found the station in the graph; or…
- have a look at the <u>properties of the station</u> Versevis Ltd. (right click on the station -> Show Properties).

Tracing

Case 5 from Madrid consumed a dried and salted roach bought at Cado Madrid. A sample was taken from this product and it was positive for *Clostridium botulinum*. Follow the trace backwards. What is the lot number of the contaminated fish? Who produced the dried and salted fish product? Where was the fish caught?
- Right-click on the delivery arrow between Cado Madrid and Case 5 and select Properties.
- Right-click on the delivery arrow between Cado Madrid and Case 5, then select "<u>Set Trace</u>" and "Backward Trace".

Let us assume that the freshly caught fish did not contain *Clostridium botulinum*. The fish must have been contaminated either on the fishing vessel or in any company between the ship and Case 5. Let us also assume that the contamination took place only once. In FoodChain-Lab you can test *in silico* in which company a contamination could explain most of the cases and thus where to send food safety inspectors first to take samples.
To test this hypothesis, right-click on one of the stations on the trace and select "Set Trace" and "Full Trace". Have a look how many of the cases are on the forward trace (orange stations and deliveries). Try out other stations on the trace. Due to your findings, to which companies would you send a food inspector first?

<u>Reset the trace</u>: Right-click into the empty space and select "Clear Trace".

How many kilograms of *Rutilus rutilus* were fished in the Ijsselmeer?
- Right-click on the delivery arrow from Ijsselmeer to Versevis Ltd. to show the <u>delivery properties</u>.

How many retailers sell dried and salted roach which was originally caught in the Ijsselmeer?
- Right-click on the delivery from Ijsselmeer to Versevis Ltd. and set the forward trace.
- In the stations filter table, click on the 3-dot symbol on the left of the table header (it looks like this: ⋮).
- Scroll down and tick the box next to "On Forward Trace". Close the window with OK
- Scroll to the right in the filter table and type "true" in the column header filter of the newly added column.
- Type "retail" in the filter of the column "Type of Business".
- The number next to "total" below the table is the answer to the question.