

## Investigation of the mysterious milk disease called yogurt

You are a milk expert who has been called in by the CDC to direct the lab portion of an epidemiological survey for a new disease of milk that causes the milk to thicken. The CDC is calling the disease "Yogurt."

As a milk expert, and you have been given the task to define what is (and what is not!) yogurt and to determine the background rate of yogurt on campus. In addition, you have been asked to identify, characterize, and confirm, to the best of your abilities, the agent responsible for yogurt.

Each group will be introduced to a different patient that is displaying symptoms of yogurt. Perform a survey of the symptoms in your patient group to create a case definition for yogurt. You and your group members will then complete an investigation to isolate any potential infectious agents from yogurt and to confirm that the agent is, indeed, responsible for yogurt. At the end, you will compile your results with the other investigators to come to a consensus about the case definition of yogurt and the agent or agents responsible for the disease.

The following supplies will be available to you in lab:

- A selective agar media that experts at the CDC have developed to grow agents for diseases similar to yogurt (called LSD agar)
- Nutrient Agar (an agar that is formulated to preferentially grow bacteria)
- Equipment for sample collection from patients (sterile pipets, spreaders, bacteria loops)
- Gram stain reagents
- pH paper
- 4-6 patients who have volunteered to participate in your study (sterile tubes of milk)
- The internet

Today we will begin by testing milk-to-milk transmission of yogurt. You will be given a healthy patient (pasteurized or "healthy" milk) to assess. Check the pH of your healthy patient and compare it to that of your yogurt sample. After you have described your healthy patient, inoculate it with 1 teaspoon from your yogurt patient. Monitor your patient and the healthy control patient for the next 24 hours to determine how quickly symptoms develop.

Before you leave Cafe Bio, collect a small sample from your yogurt patient to work with in 311. Store your patient in the fridge in Cafe Bio in a zip-lock bag in case you need another sample.

You will have access to the lab during class on 23, 25, and 27 Feb (and perhaps 04 and 06 March) for about one-quarter to one-half of each class session. Additional lab time outside of class can be arranged on an individual basis if necessary.

With your group, construct an hypothesis about the agent responsible for yogurt based on whatever information you can gather from the internet and the Beloit College Campus environment (the location of the current outbreak). Identify a strategy and any protocols necessary to identify, characterize, and confirm the agent responsible for yogurt. Finally, after you have collected your data, you will write a report to the CDC that shares your findings and makes recommendations for the prevention of a future yogurt outbreak. The report will be due after spring break (**Friday, 20 March**).