Milk and Cheese Due: Mar 29th by 5:00 PM

Please submit your answers via the course website.

1. Describe how fat is distributed throughout the volume of milk. In your answer, make sure to consider the role of emulsifiers.

2. Why is fat important when considering the nutrient content of milk?

3. Milk is rich in calcium.
    a. What role does calcium play in the structure of milk protein?
    b. Investigate the role of calcium in osteoporosis. In your discussion, make sure to include what osteoporosis is.

4. Vitamin D is commonly added to milk as a supplement. Why is milk an ideal "delivery" platform?

5. Lactose is a disaccharide found in high concentrations in milk.
    a. What is the chemical name for lactose (e.g. cellobiose is β -glucose (1→4) β-glucose)
    b. Adults that suffer from lactose intolerance are often in a lot of pain when they consume lactose because they lack the ability to digest this sugar. Why does this cause pain?

6. Describe the structure of casein proteins in milk.

7. Adding acid to milk is one way to initiate the coagulation process when making cheese or yogurt. Describe how this works.

8. Adding chymosin (aka rennin) is another way to initiate coagulation. Describe how this works.

9. What are the main ways that cheese can be classified/categorized?

10. In your own words, describe what brine is as it relates to cheese.

11. What role do bacteria and mold have in the cheese making process? How do they influence the taste?