Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Fat Cells: Raw vs. Homogenized Milk

**Purpose**

The purpose of this exercise is to evaluate the difference in fat cells found in raw vs. homogenized milk.[[1]](#footnote-1)

**Background**

The diary industry and the processing unit, to be specific, have a vast array of careers in quality control. It is important that the milk sold in grocery stores is always uniform. There are two types of milk that will be compared: raw milk and homogenized milk. If raw milk were left to stand, the fat would rise to the top to form a cream layer. Homogenization is a process that treats the fat globules by passing milk under high pressure through a tiny opening. [[2]](#footnote-2)

**Procedure:**

 **Materials**

1. Compound microscope with an oil immersion lens.
2. Raw milk from a dairy or a health food store that carries raw milk.
3. Homogenized milk

**Sequence of Steps**

1. Put a drop of raw milk on one slide.
2. Put a drop of homogenized milk on another slide. Place a cover slip over each.
3. ![C:\Users\Angela\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\DRP2N1IJ\MCj04242300000[1].wmf]()With the oil immersion lens look at the differences in the size of the fat cells.
4. Record your observations and clean your lab station.

**![C:\Users\Angela\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\DRP2N1IJ\MCj04242300000[1].wmf]()**

**Observations**

1. Sketch the fat globules of the homogenized milk sample and the fat globules from the raw milk sample.

FAT GLOBULES

Homogenized fat globules Raw fat globules

2. Explain your observations using complete sentences.

3. Analyze: Why are the globules different?

4. Analyze: What is the purpose of homogenization and how is this beneficial to agriculturists or consumers?

1. Dickson, Chris (2008). Fat Cells, Lab. *North High School, Bakersfield Agriculture Department*. [↑](#footnote-ref-1)
2. Homogenization of Milk and Milk Products. Retrieved January 13, 2009, from University of Guelph; Dairy Science and Technology Web site: http://www.foodsci.uoguelph.ca/dairyedu/homogenization.html [↑](#footnote-ref-2)