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

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

# Apple Browning

**Purpose**

The purpose of this exercise is to evaluate the rate of fruit browning with emphasis on quality for commercial resale.[[1]](#endnote-1)

**Procedure:**

 **Materials**

1. Browning Scale (Generated by students 1 day prior to lab.)
2. Apple (1 per student/group)
3. Knife
4. 2-3 plastic (Ziploc) bags (per student/group)
5. Digital Camera and printer

**Sequence of Steps**

1. Review support article provided entitled “Twelve Easy Pieces”[[2]](#endnote-2).
2. Slice an apple.
3. Do not treat the apple in any way.
4. Divide slices into 2-3 Ziploc bags.
5. Every 10 minutes take a photo of the apple.
6. Print the photos. Use the photos to decide (as a class) the amount of browning on a scale from 1-5. Anything greater than 3 cannot be sold commercially.
7. ![C:\Users\Angela\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\DRP2N1IJ\MCj04242300000[1].wmf]()Place photos and scale in a binder or another easily accessible area in the classroom.
8. Record observations and complete review questions.

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

 **Observations**

1. Describe your observations, clearly stating what you saw during this experiment.
2. Why were several bags/samples used for this experiment?
3. Based on your background knowledge, what causes browning in apples?
4. Describe the role played by enzymes in the process of apple browning.
5. What are some methods or new technology which may be employed to prevent browning in the food science sector of the agriculture industry?
1. Bottoms, Mandi (2008). No One Likes a Bad Apple. *Student,* *California Polytechnic State University, San Luis Obispo*. [↑](#endnote-ref-1)
2. Mooallem, J.Twelve easy pieces. (2006, February 12). *New York Times*. [↑](#endnote-ref-2)