Nutrition and Cost Analysis of Lemon Poppy Seed Muffins

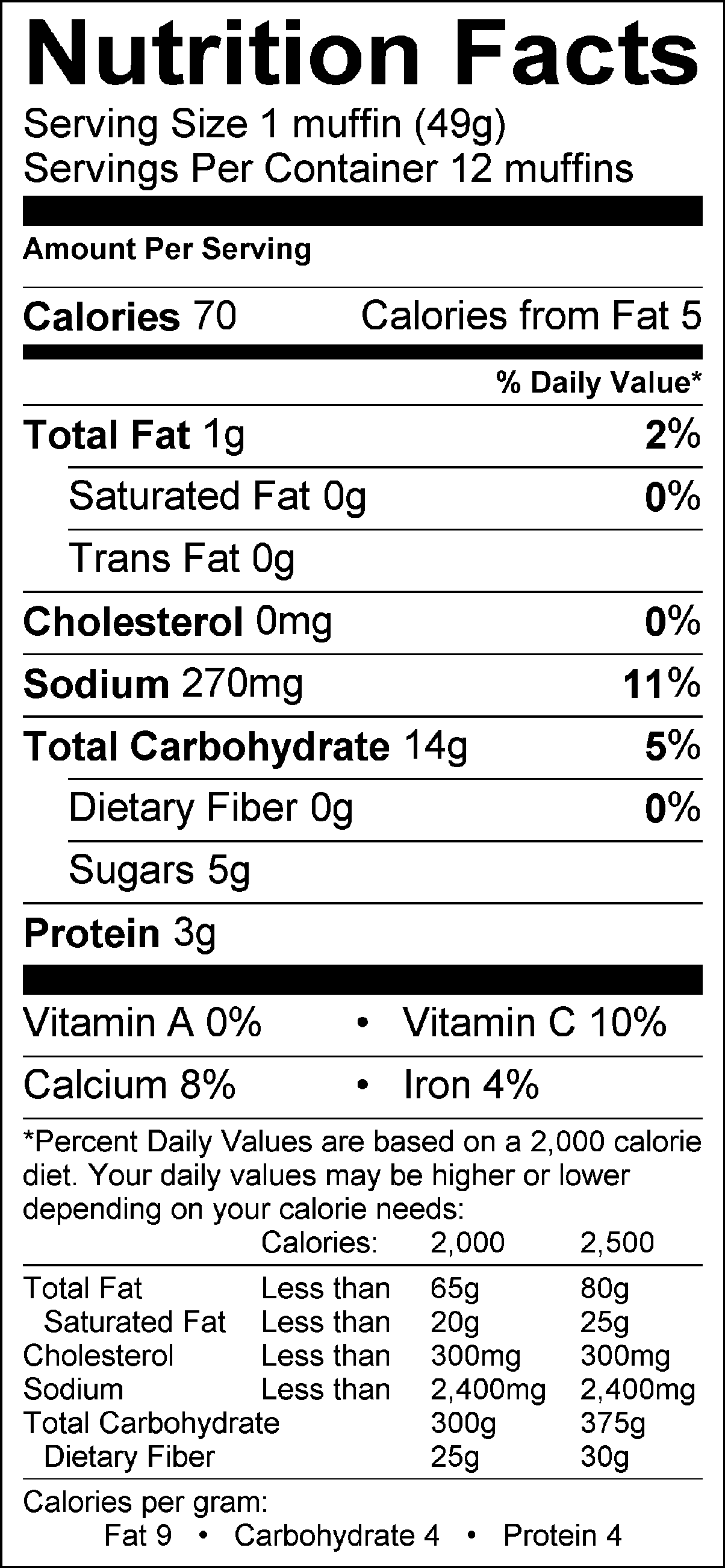
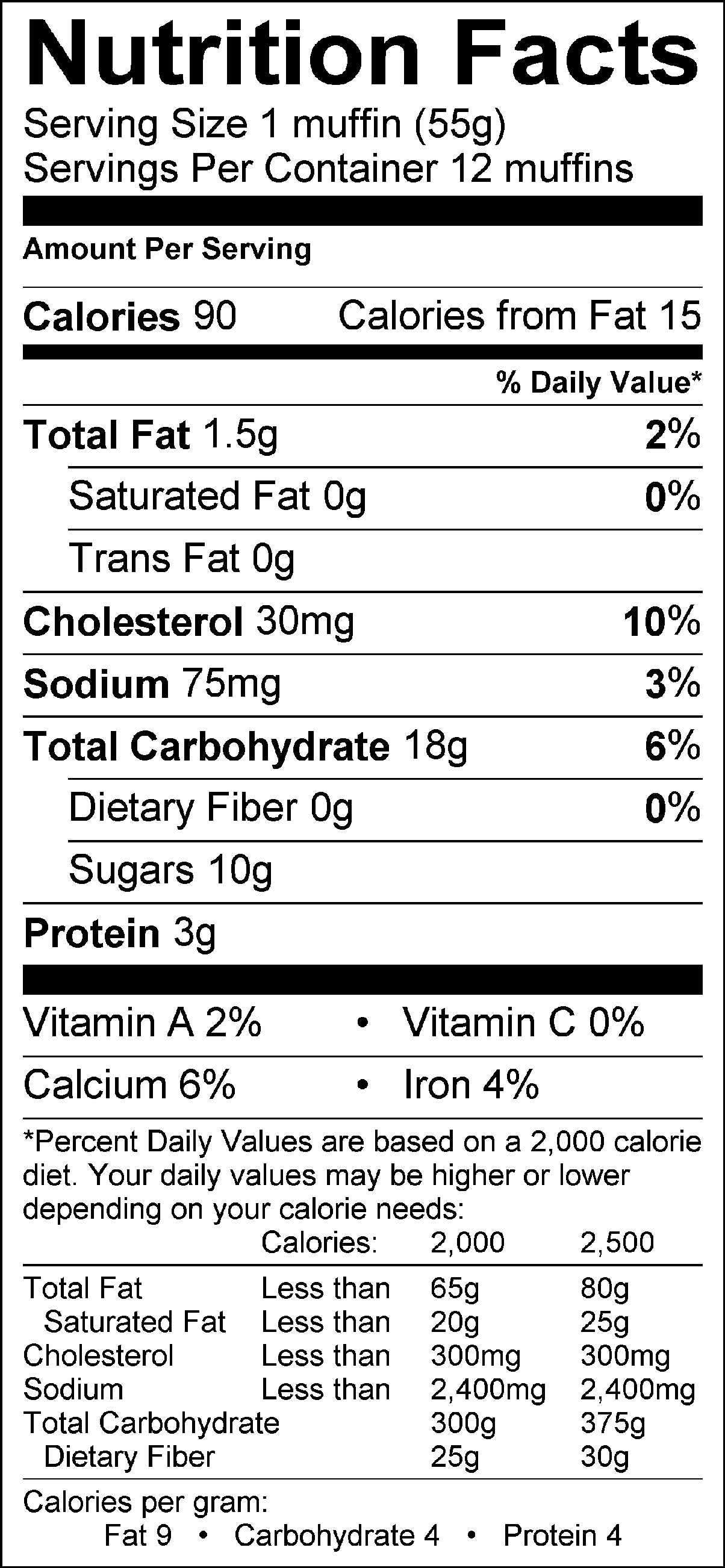
Performance Objective 7—Full-fat Food vs. low-fat/fat-free



<http://www.crumblycookie.net/wp-content/uploads/2011/01/lemon-muffins-4.jpg>

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| --- | --- | --- | --- | --- |
| Lemon Poppy Seed Muffins-Full-Fat Recipe | Cost per Package | Cost per 12 Serving Recipe | Time: Prep + Cooking | Totals:  Cost  Time Estimate |
| 2/3 cup sugar  (133 g) | $1.88—2 lb.  (907 g) 1 cup = 200 g | $0.28 |  |  |
| 1 lemon—juiced and zested | 4 for $1.00 | $0.25 | About 3 minutes (1.5 min YouTube) |  |
| 2 c flour | $2.48—5 lb. (2.26 kg)  1 c = 125 g | $0.28 |  |  |
| 2 tsp baking powder | $2.13 for 10 oz (284 g) can—  1 tsp = 4.6 g | $0.07 |  |  |
| 1/4 tsp baking soda | $0.58—8 oz (227 g)  1 tsp = 4.6 g | $0.01 |  |  |
| 1/4 tsp salt | $1.12—26 oz. (737 g)  1 tsp = 6 g | $0.01 |  |  |
| 3/4 c sour cream | $1.98 –16 oz. (453 g)  1 cup = 230 g | $0.76 |  |  |
| 2 eggs | $2.68—dozen  $0.23 per egg | $0.46 |  |  |
| 1 tsp vanilla | $3.68—2 fl oz. or 12 teaspoons  1 tsp = 0.167 fluid oz. | $0.31 |  |  |
| 1/2 cup butter, melted | $3.44 for 1 lb.—(2 cups)  (4- 1/2 c sticks) | $0.86 |  |  |
| 2 tsp poppy seeds | $3.97—2.4 oz.  (68 g)  1 tsp = 2.8 g | $0.33 | Prep abt 20 min + 20 min cooking = | 40 minutes  $3.62 for 12 muffins |
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| *Lemon Poppy Seed Muffins Low-Fat Recipe* |  |  |  |  |
| *1 c + 2 TB flour* | *$2.48—5 lb. (2.26 kg)*  *1 c = 125 g*  *1 TB = 7.8 g* | *$0.16* |  |  |
| *3/4 c sugar* | *$1.88—2 lb.*  *(907 g) 1 cup = 200 g* | *$0.32* |  |  |
| *2 tsp poppy seeds* | *$3.97—2.4 oz.*  *(68 g)*  *1 tsp = 2.8 g* | *$0.33* |  |  |
| *1-1/2 tsp baking powder* | *$2.13 for 10 oz (284 g) can—*  *1 tsp = 4.6 g* | *$0.06* |  |  |
| *2 eggs* | *$2.68—dozen*  *$0.23 per egg* | *$0.46* |  |  |
| *1 c fat-free milk* | *$2.37 per gal*  *16 cups in gal* | *$0.15* |  |  |
| *1/2 c applesauce* | *$3.32 for 46 oz. (1.304 kg)*  *1 c = 244 g* | *$0.32* |  |  |
| *1 tsp lemon extract* | *$2.88 for 2 fl. oz.* *or 12 teaspoons*  *1 tsp = 0.167 fluid oz.* | *$0.24* | *Prep time about 15 minutes +*  *22 minutes cooking* | *Time: 27 min*  *Cost: $2.04* |
|  |  |  |  |  |
| Lemon Poppy Seed Muffins  Fat-free Recipe |  |  |  |  |
| 1-1/4 c flour | $2.48—5 lb. (2.26 kg)  1 c = 125 g | $0.18 |  |  |
| 1/4 c sugar | $1.88—2 lb.  (907 g) 1 cup = 200 g | $0.32 |  |  |
| 2 tsp baking powder | $2.13 for 10 oz (284 g) can—  1 tsp = 4.6 g | $0.04 |  |  |
| 1 tsp baking soda | $0.58—8 oz (227 g)  1 tsp = 4.6 g | $0.02 |  |  |
| 1/2 tsp salt | $1.12—26 oz. (737 g)  1 tsp = 6 g | $0.01 |  |  |
| Zest of one lemon (about 1 TB) | 4 lemons for $1 | $0.25 | About 3 min. (1.5 min on YouTube) |  |
| 2 tsp poppy seeds | $3.97—2.4 oz.  (68 g)  1 tsp = 2.8 g | $0.33 |  |  |
| 1 tsp lemon extract | $2.88 for 2 fl. oz. or 12 teaspoons  1 tsp = 0.167 fluid oz. | $0.24 |  |  |
| 2 egg whites | $2.68—dozen  $0.23 per egg | $0.46 | About 2 minutes (30 seconds using a water bottle) |  |
| 1 c fat free lemon or plain yogurt | $2.00 for two 5.3 oz. (150 g) containers  1 c = 8 fl oz. or 245 g | $1.64 |  |  |
| 1/2 cup orange juice (not the concentrate) | $2.82 for 48 fl oz. (1493 g) (1 fl. oz = 31.1 g)  1 c = 249 g | $0.24 | Prep time 20 minutes + cook time 22 minutes = | Time: 42 minutes  Cost: $3.73 |

**LEMON POPPY SEED MUFFINS**



**Full-Fat Muffins Low-Fat Muffins Fat-Free Muffins**

**Analysis:**

*Cost:* Low-fat recipe is cheapest at $2.04, $1.58 less than the full fat and $1.69 less than the fat-free.

*Time:* Low-fat recipe is fastest at approximately 27 minutes, between 13 and 15 minutes faster than the other two.

*Nutrition:* Low-fat has by far the lowest sodium at 75 mg; the cholesterol for low-fat is high at 30 mg (10%); but the total fats is as low as the fat-free; the vitamins are the lowest of all the recipes, however the vitamins are not particularly high for any of the recipes; calorie count is about half of the full-fat and only 20 calories higher than the fat-free. Overall, the Low-fat recipe seems to be best.

*Taste:* Taste is up to the cooks!

# Lemon Poppy Seed Muffins

**Regular**

**2/3 c. sugar 3/4 c. sour cream**

**1 lemon, juiced and zested 2 eggs**

**2 c. flour 1 tsp. vanilla**

**2 tsp. baking powder 1/2 c. butter, melted**

**1/4 tsp. baking soda 2 tsp. poppy seeds**

**1/4 tsp. salt 12 paper muffin liners**

**1. Preheat the oven to 400°.**

**2. In a large sized mixing bowl, combine the sugar and lemon zest (about 1 Tbsp.). Rub them together with your fingers until the sugar is moist and the fragrance of lemon is strong.**

**3. Add the flour, baking powder, baking soda and salt to the large mixing bowl and stir together until combined. Make a well in the center of the dry ingredients and set aside.**

**4. In a separate medium sized mixing bowl, combine the sour cream, eggs, vanilla, lemon juice and melted butter and stir until combined.**

**5. Pour the liquid ingredients into the well of the dry ingredients and gently stir to blend. Do not over mix. Stir in the poppy seeds.**

**6. Pour the batter evenly into 12 muffin liners. Bake for 18 to 20 minutes, or until the tops are golden and a toothpick inserted comes out cleanly.**

**7. Transfer the muffins to a cooling rack. After the muffins are cooled down, cut each muffin into four pieces and bring them to the supply table.**

# Lemon Poppy Seed Muffins

**Low-Fat**

**1 c. + 2 Tbsp. flour 1 c. fat-free milk**

**3/4 c. sugar 1/2 c. applesauce**

**2 tsp. poppy seeds 1 tsp. lemon extract**

**1 1/2 tsp. baking powder 12 paper muffin liners**

**2 eggs**

**1. Preheat the oven to 375°.**

**2. In a large sized mixing bowl, combine the flour, sugar, poppy seeds and baking powder. Mix together until combined. Make a well in the dry ingredients and set aside.**

**3. In a small sized mixing bowl, combine the eggs, milk, applesauce and lemon extract. Stir until combined.**

**4. Add the liquid ingredients to the well of the dry ingredients. Stir until combined, but do not over-stir.**

**5. Pour the batter evenly into 12 muffin liners. Bake for 18 to 22 minutes, or until the tops are golden and a toothpick inserted comes out cleanly.**

**6. Transfer the muffins to a cooling rack. After the muffins are cooled down, cut each muffin into four pieces and bring them to the supply table.**

# Lemon Poppy Seed Muffins

**Fat-Free**

**1 1/4 c. flour 2 tsp. poppy seeds**

**1/4 c. sugar 1 tsp. lemon extract**

**2 tsp. baking powder 2 egg whites**

**1 tsp. baking soda 1 c. fat free lemon or plain yogurt**

**1/2 tsp. salt 1/2 c. orange juice (ready to drink)**

**Zest of one lemon (About 1 Tbsp.) 12 paper muffin liners**

**1. Preheat the oven to 375°.**

**2. In a large sized mixing bowl, combine the flour, sugar, baking powder, baking soda, salt, lemon zest and poppy seeds. Stir until combined. Make a well in the center of the dry ingredients and set aside.**

**3. In a separate small sized mixing bowl, combine the lemon extract, egg whites, yogurt and orange juice stir until combined.**

**4. Pour the liquid ingredients into the well of the dry ingredients and gently stir to blend. Do not over mix.**

**5. Pour the batter evenly into 12 muffin liners. Bake for 18 to 22 minutes, or until the tops are golden and a toothpick inserted comes out cleanly.**

**6. Transfer the muffins to a cooling rack. After the muffins are cooled down, cut each muffin into four pieces and bring them to the supply table.**