

Gluten Free Eggplant Parmesan

Production Amount: 5

Description	Quantity	Cost
Brown rice flour	1 5/8 oz	\$2.50
Egg-Liquid	3 1/3 fl oz	\$0.20
Gluten Free Bread crumbs	1 1/8 oz	\$1.80
Eggplant-fresh cut in ½ in circles	10 oz	\$0.29
Olive oil	1 1/4 fl oz	?
Sauce-Marinara Deluxe, Canned	1 2/3 C	\$0.62
Mozzarella Cheese, Shredded	2 1/8 oz	\$0.29
Parmesan Roman Cheese Blend	1 2/3 oz	\$0.40

I calculated the cost of the bread (3 slices = 1 cup)
 The loaf cost \$6.80 and there are 13 slices in a loaf
 1 slice is \$0.52

Total Cost=

Preparation

1. Cut washed eggplant into ½ inch circles and place on tray lined with paper towels.
2. Sprinkle kosher salt over eggplant and let sit out for a couple of hours.
3. Place gluten free bread in the food processor and process until breadcrumbs are fine in texture.
4. Place flour and bread crumbs in separate bowls.
5. Beat eggs lightly for egg wash. Place in a bowl. CCP-Hold refrigerated at internal temperature of 40°F or below or on ice at all times for use.
6. Dip eggplant in flour. Shake off excess. Dip thoroughly in egg mixture. Drain slightly, then press into breadcrumbs until coated on all sides.
7. Place finished breaded eggplant neatly on line trays. CCP-Hold refrigerated at internal temperature of 40°F or below for use.
8. Discard leftover flour, egg mixture, and breadcrumbs.
9. Pan fry eggplant in oil for 3 minutes or until golden brown. CCP-Minimum internal temperature should be at least 145°F. CCP-Hold hot at 140°F or above.
10. Spread a layer of marinara sauce on the bottom of the pan. Layer eggplant on top of sauce.
11. Sprinkle mozzarella cheese and parmesan cheese over the eggplant.
12. Bake at 375°F for 10 minutes or until eggplant reaches a minimum internal temperature of 165°F.
13. Shelf Life: 20 minutes. If left over, do not reuse.

Modification of Recipe

Target Customer: College students who are allergic to or have intolerance to wheat.

Taste Panel Members: Olin College students and foodservice employees.

Rational of recipe:

- Food allergies are becoming more prevalent and food service operations need to make more accommodations to serve people with food allergies.
- There are about a dozen students at Olin College who cannot eat gluten. These students are constantly asking the staff if food items contain gluten and are looking for new foods they can eat.
- It important that the dining facility at Olin meets the needs of all their students, including the needs of gluten free students. All students are required to have a meal plan and for most of them the cafeteria is the only means for them to get food.
- If more meals were prepared in ways that gluten free students could eat then it would give them more variety to choose from and increase their satisfaction.

Nutrition Analysis:

The modifications that were made to the recipe were small and did not have a large impact on the nutritional value of the dish. The fat content changed slightly because of the change in preparation methods. Instead of deep frying the eggplant I chose to pan fry. Pan frying requires less oil than deep frying so the fat content of the dish was reduced. Due to the slight difference in nutritional value I choose to look at the nutrients of the changed ingredients compared to the original ingredients.

Comparison of Changed Ingredients:

Type of Flour:	Brown Rice Flour (1 cup)	All Purpose (1 cup)
Calorie	573 kcal	455 kcal
Fat	4g	1g
Saturated Fat	1g	0g
Sodium	13mg	2mg
Total Carbohydrate	121g	95g
Dietary Fiber	7g	3g
Sugar	1g	0g
Protein	11g	13g

All Information came from NutritionData

When comparing the two flours, the brown rice flour is higher in calories and all nutrients except protein.

Type of Bread crumbs:	Homemade Gluten Free Bread crumbs* (1 cup)	Bread crumbs dry, plain (1 cup)**
Calorie	240 kcal	427 kcal
Fat	4.5g	6g
Saturated Fat	0g	1g
Sodium	600mg	791mg
Total Carbohydrate	51g	78g
Dietary Fiber	3g	5g
Sugar	0g	7g
Protein	3g	14g

*3 sliced of Gluten Free bread equaled one cup

**Information came from NutritionData

The homemade bread crumbs are lower in calories and all nutrients.

Analyze Cost:

The cost of the modified recipe is greater than the original (numbers). The increase cost is due to the gluten free bread, which is very expensive (\$ 6.80 for one loaf). The gluten free bread crumbs cost \$1.80 while the premade white bread crumbs only cost \$0.11. That is a difference of \$1.69. The brown rice flour also adds to the increase cost of the modified recipe because it is much more expensive than all purpose flour. The brown rice flour is \$2.47 more than the all purpose flour. The recipe also require more labor hours which is another cost. Making the bread crumbs takes about 20 minutes and it takes longer to pan fry the egg plant then deep fry. Considering the higher price of the ingredients and the more labor it takes to create, this recipe it is defiantly more expensive than the original recipe.

The selling price of this product does not need to be determined because the students use prepaid meal plans, the faculty is charged a flat rate of \$6.42 for lunch and \$7.70 for dinner and the community pays \$8.15 for lunch and \$10.25 for dinner.

Statistical Information:

n=12

Standard deviation = 0.197

5=Perfect, needs no improvement

4= Good, but needs some improvement

3=fair, but needs some improvement

2=Poor, does not meet standard

1=Unacceptable

Characteristics	Average
Bright in color	4.2
Appealing to the eye	4.6
Eggplant was soft and easy to chew	4.6
Moderately moist	4.8
Full of flavor	4.5
Overall taste	4.6

Questions	Yes	No
I would eat this dish again	10	1
I usually eat gluten free foods	9	1

Please look at sensory cards for additional comments

Taste panel members rated the modified eggplant parmesan with an average of 4.5- Good, but needs some improvement. The area where improvement is needed is appearance. Participants rated “bright in color” as the lowest characteristic. Ways to improve the dish’s color would be adding a garnish on top or using a mixture of cheddar and mozzarella cheese to add some color. Moderately moist was the highest scored characteristic with a score of 4.8. Ten out of the eleven participants would eat this dish again.

Evaluation of recipe:

- Everything needed to create this recipe was found in the kitchen, including ingredients and equipment.
- A food processor was needed to make the breadcrumbs.
- Instead of deep frying the eggplant I choose to pan fry. This change may be more time consuming when preparing a larger quantity however, the tilting skillet could be used when preparing larger quantities. Deep frying the eggplant is also possible.
- Making the bread crumbs from scratch is time consuming verse using premade breadcrumbs.
- All cooks have the culinary skills to make this recipe.
- As a whole the participants that tasted the modified recipe liked the dish and would eat it again.
- Improving appearance of the dish would improve overall score.

Conclusion:

This dish can be easily prepared by any of the cooks and includes ingredients that are commonly found in Olin’s kitchen. Results of the taste panel found that students and staff liked the dish and would eat it again. The cost of the dish is high and does require more labor hours but is manageable with the amount of staff and Olin’s budget. Gluten free products are at a high demand because more people are unable to eat gluten. Offering classic dishes, like eggplant parmesan, in ways that these customers can eat it will increase customer satisfaction. I conclude that the possibility of putting this dish on the menu is high.