

**2012 Iowa FFA Food Science Product Development  
Career Development Event  
Developing a Healthy Gluten-Free Frozen Pizza**

**BACKGROUND**

The number of Americans who are gluten intolerant is increasing and the market for gluten-free products is also increasing to meet the needs for these Americans. In addition, providing healthy gluten-free foods is also important. Frozen pizzas are recognized for their convenience, although may not be healthy because of high fat, saturated fat, and cholesterol contents, high salt/sodium contents and low fiber contents. The primary objective for your team is to develop a 'gluten-free' frozen pizza with good nutritional value that will appeal to teen-agers and young adults.

**OBJECTIVE**

Your task is to develop a 'healthy gluten-free' frozen pizza with good nutritional value. Your product should be nutritious and have satisfactory sensory characteristics. In addition, you will attempt to commercialize the product for grocery store use.

Your target nutrient guidelines (for each serving) are:

Serving size: 1/4 12-inch pizza (approximately 150 g serving)

Total Fat: Less than 15 g

Saturated Fat: Less than 6 g

Cholesterol: Less than 30 mg

Trans Fat: 0 g

Protein: At least 15 g

Sodium: Less than 600 mg

Dietary Fiber: At least 2 g

Calories: Less than 350 calories

**METHOD**

With your team, create a food product from the ingredients included in the following table. You may also choose to include additional ingredients. Your team should develop a product name, determine the nutritional value, and prepare a package for your product. The package should include all the required elements of a package (product name, standard of identity, net weight, name and address of processor or distributor, nutrition information, and ingredient list) in their correct position on the package. In the oral presentation, the team will need to be able to explain why they selected each ingredient and the impact of the ingredients on the nutritional value, quality, shelf-life and safety.

Your team will present an oral report (15 minutes – 10 min. to present and 5 min. for questions) to a group of trained judges. The evaluation form attached is how your group presentation will be evaluated. It is important that you have graphics to clearly show your product.



**RULES**

**Your team will need to develop but not prepare your product.** The following table includes suggestions for ingredients you may use. You may also use related ingredients (not listed) as alternates. A maximum of 10 ingredients can be used in your product. Select items from the following categories:

<b>Meat and Substitutes</b>	<b>Cheese and Substitutes</b>	<b>Pizza Crust</b>	<b>Vegetables</b>	<b>Pizza Sauce</b>
chicken	Mozzarella	Soy flour	onion	regular
pepperoni	soy-based cheeses	Corn meal	bell pepper	light
pork sausage	tofu	other gluten-free grains	mushrooms	
Canadian bacon			green olives	
soy-based meat substitutes			black olives	
			pineapple	

**EVALUATION**

Product name \_\_\_\_\_

Ingredients \_\_\_\_\_

Preparation time \_\_\_\_\_

**MARKETING PRESENTATION**

Each team member should present at least one of the following aspects of food product development: selection of ingredients, nutritional value, ease of preparation, sensory characteristics.

**COMMERCIALIZATION**

The product that you develop will need to meet all aspects of labeling requirements including principal display panel, nutritional label, and ingredient listing. Your team will be evaluated on this being done correctly.

## RESOURCES FOR DETERMINING NUTRIENT INFORMATION

1. Nutrition Facts:  
<http://www.fda.gov/Food/ResourcesForYou/Consumers/NFLPM/ucm274593.htm>
2. Food Labeling Guide:  
<http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/FoodLabelingNutrition/FoodLabelingGuide/default.htm>
3. Nutrient Data Laboratory – Downloadable data sets prepared by USDA Nutrient Data laboratory with nutrient values of foods.  
[http://www.ars.usda.gov/main/site\\_main.htm?modecode=12-35-45-00](http://www.ars.usda.gov/main/site_main.htm?modecode=12-35-45-00)
4. Nutritive Value of Foods (pdf file format). Published on the **USDA** Nutrient Data Laboratory. (NDL) web site.  
[www.nal.usda.gov/fnic/foodcomp/Data/HG72/hg72\\_2002.pdf](http://www.nal.usda.gov/fnic/foodcomp/Data/HG72/hg72_2002.pdf)
5. USDA Handbook 8  
[www.hoptechno.com/nightcrew/sante4me/usda19datashape.cfm](http://www.hoptechno.com/nightcrew/sante4me/usda19datashape.cfm)

Also look at Part III: Resource Information in the CDE Rules.

## SPECIFIC REQUIREMENTS

- Suitability of product as a healthy gluten-free frozen pizza
- Ingredients should be listed in order of amounts used in product.
- All required parts of the principle display panel should be present.
- All required elements on the Information Panel
- Correct relative placement of PDP and Information Panel
- Appealing PDP and Creative Character
- Reasonably close nutritional panel
- Ability to answer questions about the product, including reasons for selection of each ingredient.
- All members participate in presentation.

CHAPTER NAME \_\_\_\_\_

<b>CRITERION</b>	<b>POSSIBLE POINTS</b>	<b>POINTS EARNED</b>
Objective met – to develop a healthy gluten-free frozen pizza	50	
All required parts of the principal display panel (PDP).	50	
All required elements on the Information Panel	50	
Correct relative placement of PDP and Information Panel	50	
Reasonably close nutritional panel	50	
Communication skills/oral presentation (clear, logical, easy to understand, confidence in presentation and the information presented.	50	
Ability to answer questions about the product.	50	
Did all team members contribute?	50	
<b>OVERALL</b>	400	