




Proposal to Test Flour Types for Upcoming Fall Recipe

prepared for

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The time has come to create seasonal recipes for the fall edition of Bon Appétit Magazine. Understanding that readers might desire recipes which use healthier ingredients, our team proposes experimentation on different types of flour for one of our seasonal recipes. We will bake pumpkin spice chocolate chip muffins using four different types of flour: all-purpose, whole wheat, almond, and banana. These muffins will be tested for density, taste, moisture, and texture to determine the best flour option for the recipe to be released in the October publication.

Introduction

As the days are beginning to cool down, people are anticipating the transition into the fall season. Due to this occurrence, retail stores and coffee shops have been well-known for selling the familiar scent and flavor of pumpkin spice since early August, as the spice itself is a symbol that represents the season. In preparation for fall, we would like to follow this trend. Our plan is to create a tasty pastry which includes pumpkin and various autumnal spices for the mischievous holiday season, Halloween.

We will release a seasonal muffin recipe in the October publication of Bon Appétit Magazine. Before we submit an official recipe to you, the Chief Editor, we want to get your approval to experiment on flour types for the recipe. We will use all-purpose, whole wheat, almond, and banana flour to determine which flour type would keep the muffins fluffy and taste best. Experimentation will require permission to access the company kitchen tools and appliances, and an allowance to purchase the ingredients.

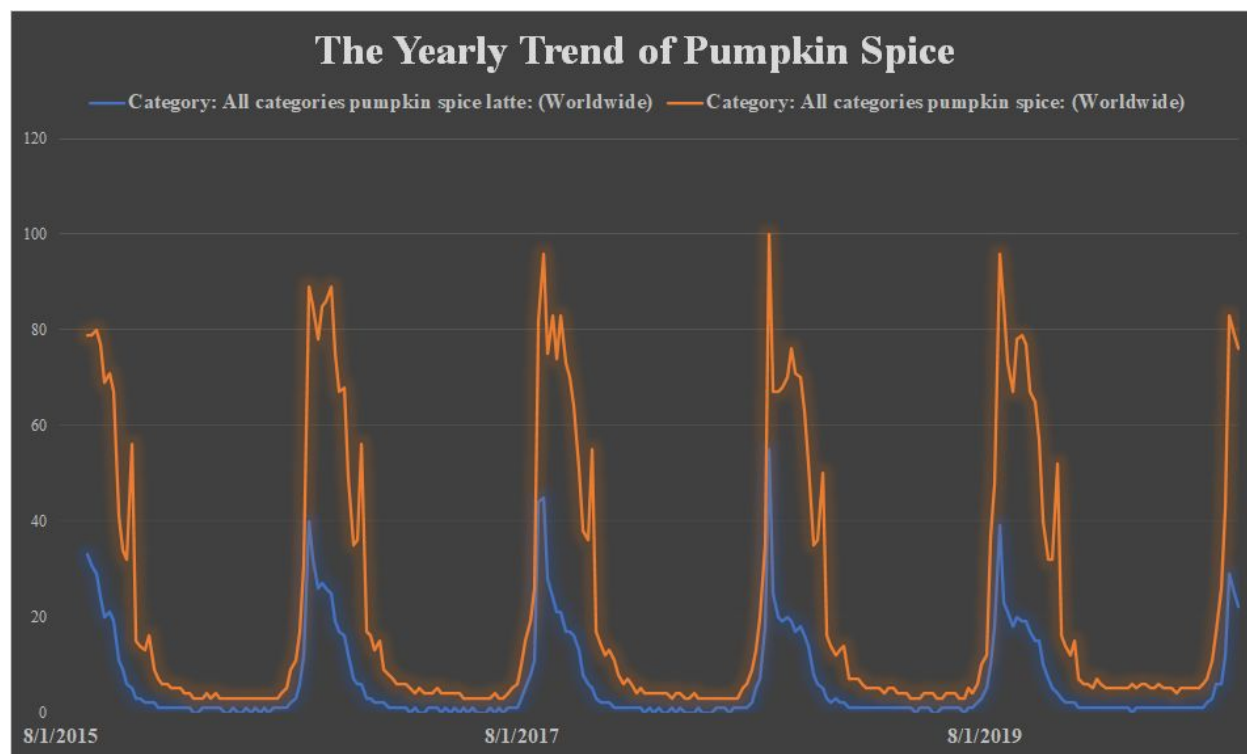
In our proposal, we have devised a plan on how to conduct the experiment. Additionally, we include the overall expenses of the experiment and an organized timeline of its progress. With our thorough plan, we believe that we will create an exemplary seasonal muffin recipe in time for our meeting regarding the October publication.

Background

In recent years, there has been a noticeable increase in the pumpkin craze the Fall season brings, partly due to Starbucks' first releasing their Pumpkin Spice Latte back in 2003 (see *Graph 1: The Yearly Trend of Pumpkin Spice* on the next page).

Initiatives by Starbucks to push the pumpkin spice trend have created dynamics in the food and beverage industry that have a clear cyclical pattern: there is a distinct spike in the fall season of searches for both pumpkin spice and pumpkin spice latte, happening at the

same time, which then become less relevant as the season unfolds into the winter holidays. It is also clear that the popularity has risen considerably over the years.




Graph 1: The Yearly Trend of Pumpkin Spice.

The above graph (created in Google Trends) illustrates the correlation between the two Google search results of “pumpkin spice latte” and “pumpkin spice” between the years of 2015 and 2020. Both grow in popularity in relation to one another during the same time period every year. There are also recognizable peaks in the searches for “pumpkin spice” which correspond to Thanksgiving, meaning that there is a long relevancy period of pumpkin spice recipes during the most popular holiday season. In light of this movement, it is crucial that Bon Appétit gains advantage by including a flawless pumpkin spice recipe in the next publication.

Benefits of Testing Types of Flour

There are numerous flour options available for baking. In this study we will compare all-purpose flour, whole wheat flour, almond flour, and banana flour. Different types of flour have different levels of protein which affects how much gluten is generated; “gluten determines the structure and texture of a baked good” (Bolluyt, 2018). We want to compare these four flour types to determine the healthiest and most delicious muffin recipe for readers of Bon Appétit Magazine.



All-purpose flour is a combination of hard and soft wheat, landing in the middle of the protein scale at 10 to 12 percent (Everything You Need to Know About Flour, 2017). This protein density is more than cake flours and less than bread flours, which should make it perfect for our pumpkin puree muffin (Bolluyt, 2018).

Whole wheat flour is made with the germ, bran, and endosperm portions of the wheat seed head. Because it is absorbent, it requires more liquids (Bilow, 2015). It “produces heavier and denser baked goods” and is usually combined with white flour in muffin recipes (Everything You Need to Know About Flour, 2017).

Almond flour is better for cholesterol, blood sugar, and blood pressure as it is nutritious and gluten-free. It is often used to replace wheat flour in baking recipes at a one to one ratio. It produces flatter and denser products because of its lack of protein and gluten. (Why Almond Flour Is Better).

Banana flour is made from unripened green bananas, is gluten free and paleo, and is a resistant starch (Tillman, 2020). It is usually recommended for use in no-bake recipes to avoid losing the benefits of the resistant starches in the flour. It would also produce similar results as almond flour due to its low gluten content. Food Network advises using “¾ cup banana flour for every cup of wheat flour in a recipe” (White, 2015). We are uncertain whether the banana flavor in the flour would overpower the taste of the pumpkin puree in the muffin recipe.

Project Plan: Finding the Best Pumpkin Spice Muffin Recipe

In order to determine the best flour type for the muffin recipe, we are proposing to research the situation by baking a small batch of muffins using four separate flour types, measuring density, and conducting a taste test. This includes weighing the muffins using a kitchen scale and performing a simple test to measure volume. We have prepared a rubric for our taste test to analyze which flour type compliments the muffin recipe the best for the fall season. Our team will prepare and conduct the proposed experiment as follows:

I. Costs

Listed below are costs associated with buying the full ingredient list for the Chocolate Chip Pumpkin Spice Muffins recipe. We request the total cost of \$55.20 as an allowance for conducting our research into the recipe.

Ingredient	Cost
15 oz pumpkin puree	\$1.88
1 dozen eggs	\$2.67
2 lb sugar	\$1.32
24 fl oz vegetable oil	\$1.32
12 oz baking soda	\$1.29
26 oz salt	\$.40
1.25 oz ground cinnamon	\$3.78
1.25 oz ground ginger	\$4.48
1.25 oz ground cloves	\$7.24
1.25 oz ground nutmeg	\$5.38
10 oz bag semi sweet mini chocolate chips	\$2.48
5 lb all-purpose flour	\$2.89
5 lb organic whole wheat flour	\$4.16
1 lb gluten free almond flour	\$6.99
1 lb banana flour	\$7.99

1 package muffin baking liners	\$.93
Total cost	\$55.20

II. Methods

Recipe

Below is the recipe and baking instructions that we will follow to conduct our experiment, with the measurements having been adjusted for us to bake smaller batches of muffins (Chrissie, 2020).

Ingredients

- 7.5 oz pumpkin puree
- 2 eggs
- 1 cup white sugar
- ½ cup vegetable oil
- 1.5 cups all purpose flour
- 1 teaspoon baking soda
- ½ teaspoon salt
- ¾ teaspoons ground cinnamon
- ¼ teaspoon ground ginger
- ⅛ teaspoon ground cloves
- ¼ teaspoon ground nutmeg
- ⅔ cups mini chocolate chips reserve ⅓ cup for topping

Baking Instructions

1. Preheat your oven to 350 degrees Fahrenheit and prepare muffin tins by lining them with paper liners (24 muffins).
2. In a large bowl, whisk together the pumpkin puree, eggs, sugar, and vegetable oil until smooth.
3. Add the flour, baking soda, salt and spices and combine with a rubber spatula until no streaks of flour remain.
4. Stir in 2/3 cup of the mini chocolate chips gently.
5. Portion the batter into each of the 24 prepared muffin cups, distributing the batter evenly.
6. Top the muffins with the remaining mini chocolate chips.
7. Bake at 350 degrees Fahrenheit for about 25 minutes, or until a toothpick inserted into one of the muffins comes out clean.
8. Cool on a wire rack in their tins for about 10 minutes before removing them from their tins to cool completely.

Measuring Density

One muffin from each batch of flour will be weighed on a kitchen scale. Each of those muffins will be placed in an airtight ziploc bag which will be dunked in a clear measuring cup with water. The water displacement will be measured to determine the volume of each muffin. Dividing weight by volume provides the density of each muffin. Our goal is to produce a fluffy muffin so lower densities are desired from this test.

Taste Test

Each team member will bake muffins for three to four participants. The participants will taste a muffin for each flour type and rank them based on taste, moisture, and texture. The highest rank will be 1 and the lowest rank will be 4. First place will receive 4 points, second will receive 3, third will receive 2, and fourth will receive 1 point. The sum of the scores for each muffin, from each participant, will be combined in order to identify the best muffin.

III. Timeline

Tasks

1. Purchase ingredients: a list of ingredients and its total cost are mentioned above in the Methods section.
2. Conduct the experiment: follow the baking instructions that are mentioned above in the Methods section.
3. Write the Analysis/Progress report.
4. Edit and revise the Analysis/Progress report.
5. Submit the Analysis/Progress report.

Schedule

	M 9/21	T 9/22	W 9/23	TH 9/24	F 9/25
T1: Purchase ingredients					
T2: Conduct experiment					
T3: Write report					
T4: Edit and revise report					
T5: Submit report					

**Key: T = Tasks (i.e. T1 = Task 1)



Qualifications

This team displays diverse experience and expertise in baking that is reinforced by perspectives from distinct backgrounds. Miguel Martinez is the head chef of Bon Appétit magazine, and My Bui, Erin McIntyre, and Kimberly Voltaire are his assistant bakers.

Miguel Martinez - Head Pastry Chef

Miguel Martinez has worked in the field of culinary arts for 39 years, honing his skills at many fine baking establishments throughout the east coast. He has been the Head Chef for Bon Appétit for the past 15 years and owns his own bakery *Absolutely Muffins* in New York City, where he also serves as a culinary arts instructor to teens who aspire to become bakers themselves. His experience and mastery of culinary arts in baking brings techniques, knowledge, and insights to the team.

Erin McIntyre - Assistant Pastry Chef

Erin McIntyre is a pastry chef who graduated from the Culinary Institute of America Baking and Pastry Arts degree program and has worked for Bon Appétit for 7 years. She has experience baking numerous pastries and working with finicky baking ingredients. Erin is passionate about using alternative ingredients to create delicious, healthy recipes.

Kimberly Voltaire - Head Baker

Kimberly Voltaire has over 20 years of experience in baking. Her interest in baking began when she started helping her dad in the kitchen making baked goods for the neighborhood during the holidays, so she has extensive expertise in baking holiday desserts. She has enthusiasm for creating and preparing themed holiday sweets, and has appeared on local news programs demonstrating everything from Halloween ghost cupcakes to sweet potato pie for Thanksgiving.

My Bui - Assistant Baker

My Bui is a student at Hattori Nutrition College, and is working as an intern under Miguel Martinez in his bakery, *Absolutely Muffins*. She is the winner of the 2018 New York Baking and Pastry Competition, where Martinez was one of the judges. After her win, she got an offer from Martinez to work at his bakery. She is passionate about pastries and exploring new methods of baking.



Conclusion

Fall is the season known for various baked goodies. We want to do the season justice in our autumnal muffin recipe. We believe the experimental trial is necessary to identify the best flour to use in our recipe. Flour is one of the main foundations in any pastry. It could, quite literally, make or break the end result of a baked good. We want to compare four types of flour, which we deem are either commonly used or are healthy alternatives used in baking. These flour types are all-purpose flour, whole wheat flour, almond flour, and banana flour. We are determined and ambitious to give our all into this project. Our strategic plan will determine which flour will be used in our October publication. We only ask that you take our research and planning into consideration in the process of forming your decision. I assure you that my proposal places the best interest of the magazine in mind.

Miguel Martinez

Erin McIntyre

Kimberly Voltaire

My Bui

Bon Appétit Test Kitchen Team

September 14, 2020



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