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Red Velvet Cake

BY: CHEF MOHIT SONDHI - BAKERY & PATISSERIE

Red velvet cake is traditionally a red, red-brown, mahogany, maroon, scarlet colored chocolate layer cake, layered with white cream cheese or ermine icing. Red Velvet experienced an explosion of popularity in the last few years.

Besides the namesake cake, Red Velvet is now available in cupcake form along with pancakes, cookies, ice cream, and even lattes! The cake has gained popularity in the 20th century, but its roots stretch further back. Like with many recipes, the Red Velvet Cake's true origins aren't completely known. However its history can be traced back over the years thanks to cookbooks, recipes, and advancements in food production.

The Early Years

Velvet cakes had been made since the 1800s.

Recipes called for the use of cocoa to soften flour and make finer texture cakes. This smoother texture gave these cakes the name Velvet cakes. A Mahogany cake also was popular which incorporate cocoa and coffee (its cousin being Devil's Food Cake). By the early 1900s recipes surfaced for cocoa velvet cakes, red cocoa cakes, and other variations. One of the most prominent mentions of Red Velvet cake came in 1943 in Irma S. Rombauer's "The Joy of Cooking" (yes – the book that inspired Julia Child's career). While Ms. Rombauer was not a fan and made note of this in her book, it was one of the first nationalized mentions of the Red Velvet cake.

Food Rations During World War II

When items ideal for baking (specifically sugar and butter) were rationed during World War II, some bakers began adding beets or beet juice to their cakes. This was done for a variety of reasons. The red from the beet juice made the cakes more appealing, and the beets also acted as a filler and kept the cakes moist. Some red velvet recipes do actually call for beets, but there is no clear correlation between beets and Red Velvet cake, but rather just one theory on the cake's origins.

Introduction to The American Diet

The Adams Extract company attributes itself to making the "original" Red Velvet cake in the 1920s. Currently you can buy the mix from the company in its vintage packaging. The Waldorf Astoria Hotel in New York City also claims it is the birthplace of the Red Velvet cake, with it being a popular menu item in the 1950s. Some argue that the Red Velvet cake started in the south. While there is no one clear answer, we do know that something between the 1920s and the 1950s, Red Velvet became popularized in the United States.

Present Day Red Velvet Cake

Present day Red Velvet Cake relies more on red food coloring than it does on beets. Another reason why food coloring is used to give the cake its signature color is because of the way cocoa is now processed in the United States. Most cocoa available in the groceries stores is known as Dutch process cocoa. The thing is natural coca is fairly acidic. When it is processed, the acid is reduced while creating a rich brown color. It is the acid in the natural cocoa that reacts to the buttermilk creating a reddish hue. Because natural cocoa isn't as widely available, bakers opt instead to use Dutch process cocoa and add food coloring to give the cakes their color.

Variations

In addition to the many variations of red velvet cake, there are endless red velvet-flavored products, including protein powder, tea, lattes, Pop-Tarts, waffles, and alcoholic beverages. The scent is used for candles and air fresheners as well. For dietary restrictions, such as those due to allergies and ingredient sensitivity, vegan, gluten free, and dairy free variations are available.

Here's the recipe :

RED VELVET CAKE

Ingredients

- 360 gms all-purpose flour
- 600 gms castor sugar
- 63 gms cornstarch
- 50 gms unsweetened cocoa powder
- 4 gms baking soda
- 6 gms baking powder
- 6 gms salt
- 4 large eggs
- 120 gms buttermilk
- 310 ml warm water
- 112 ml vegetable oil
- 1 teaspoon vanilla extract
- 1 teaspoon distilled white vinegar
- 2 tablespoons red food coloring

Frosting:

- 455 gms cream cheese softened
- 227 gms butter softened
- 400 gms powdered sugar
- 1 teaspoon vanilla extract

Method :

- Preheat oven to 175 degrees celsius. Butter three 9-inch cake rounds. Dust with flour and tap out the excess.
    1. Mix together flour, sugar, cornstarch, cocoa, baking soda, baking powder, and salt in a

stand mixer using a low speed until combined.

2. Add eggs, buttermilk, warm water, oil, vanilla, vinegar, and food coloring. Beat on a medium speed until smooth. This should take just a couple of minutes.
3. Divide batter among the three prepared pans.
4. Bake for 30-35 minutes until the cake meets the toothpick test (stick a toothpick in and it comes out clean).
5. Cool on wire racks for 15 minutes and then turn out the cakes onto the racks and allow to cool completely before frosting.
6. Make the frosting. In a large bowl, beat together butter and cream cheese until fluffy. Use a hand mixer or stand mixer for best results. Add in vanilla extract. Beat until combined. Beat in powdered sugar, 1 cup at a time until frosting is smooth.
7. Assemble and frost the completely cooled cake.

Multigrain Baking

Consumption of multigrain breads and other baked goods has increased steadily as consumers become better educated and more aware of the relationship between nutrition and health. The increasing popularity of ethnic and artisan foods also drives consumers' demand for a wider variety of baked products. As multigrain products rise in popularity with consumers, the baking industry is meeting the demand by supplying a variety of multigrain breads and other products.

Studies have shown that a diet high in fiber can help protect against heart disease and certain types of cancer. In addition to being rich in fiber, multigrain products often incorporate whole grains which contain the vitamins and minerals found in the outer layer (bran) of the grains. The US Department of Agriculture recommends that at least 50% of daily consumption of grain products be whole grains.

Ingredient mixes available for purchase by bakeries and home bakers can include ancient grains, whole grains, seeds, and flavorings. The mixes can be incorporated into a variety of baked products including breads, pizza crusts, muffins, bagels, and tortillas.

Grains incorporated in multigrain breads often include wheat, flax, rye, oats, barley, corn, sorghum, amaranth, soy, rice, and sunflower seeds. "Ancient grains," so called because their genetics remain relatively unchanged since ancient times, are also popular in multigrain goods. Ancient grains include amaranth, millet, teff, sorghum, quinoa, chia, buckwheat, spelt, and farro. In addition to multigrain breads, these grains are used in a variety of other popular baked products including pasta, tortillas, snack chips, and crackers.

Multigrain breads are very popular with consumers who follow a gluten-free diet. Breads and other baked goods can be made with rice, teff, amaranth, sorghum, and other whole grain flours instead of wheat flours. Additions of seeds (flax, sesame, chia, sunflower, and pumpkin, to name a few) add depth and layers of flavor to gluten-free multigrain products. Once found only in specialty shops and health food stores, multigrain flours, baked goods, snacks, and cereals can now be found on grocery store shelves alongside products made with refined, white flours.

Whole grains are a significant contributor of nutrients in whole grain and multigrain breads and other products. Because whole grain flours contain the entire grain in a cracked or flaked form, the nutrients contained in the whole grains are not lost or eroded by processing and removal of portions of the kernel. Because whole grain flours are higher in fiber than refined flours, they are often lower in calories as well as higher in nutritional content.

While conventional equipment is often adaptable for the production of multigrain breads and other products, the formulation and processing of the doughs varies from those employed in the production of white pan breads. Because multigrain flours are coarser than refined flours, they require additional time for the grains to fully absorb moisture and soften. Multigrain bread doughs also need additional mixing time, however, they are also highly sensitive to overmixing. Multigrain breads can depend upon added gluten, sometimes in fairly substantial amounts, and often require more sweeteners than white bread. Additionally, multigrain breads may require up to 1-2% additional yeast. Additional oxidation is typically necessary, particularly when multigrain breads are produced with the same density structure as pan breads.

Multigrain breads require carefully monitored baking. Under-baked multigrain breads have a gummy texture and sometimes exhibit collapsed sidewalls when cooled. Conversely, over baking multigrain breads can result in excess browning.

Slicing multigrain breads also demands special care. Because multigrain breads can retain additional water and may also contain whole grains or pieces of grains, the slicers must be carefully maintained to ensure that slicing blades are sharp and oilers are functioning properly. A poorly maintained slicer may result in torn or uneven slices.

As multigrain products increase in popularity among consumers, bakers are finding new ways to incorporate whole grains, ancient grains, and seeds into popular bakery products, especially breads. While standard bakery equipment can be used to produce multigrain breads and other products, formula and preparation methods must be changed to accommodate physical differences in the types of flours. Consumers are increasingly interested in all types of multigrain products, from breads to snack chips.

Dough Systems

Shorya Kapoor,
AIB Certified Bakery Technologist

Dough systems are defined as the mixing methods used to prepare doughs breads, which affects the final product characteristics like flavor, color, shelf life. Etc., there are several dough systems which are used in the industries for production of variety pan breads and hearth breads, like, Sponge and Dough method, Straight Dough method, No-time dough method, Liquid ferment & Delayed-Salt method.

a. Sponge and dough method

Sponge and dough method is 2-stage mixing and fermentation process.

Sponge is the first stage of mixing and fermentation. In this different type of pre-ferments can be used, sponge is a pre-ferment which comprises of 60-100% flour, most amount of yeast, mineral yeast food, and adequate amount of water to prepare a stiff and homogenous mass of dough, which is fermented for 3-5hours. Usually, the mixing time for the sponge is low in comparison to dough mixing as we aim to get a homogenous and stiff dough without developing gluten matrix.

b. Straight dough method

Straight dough method is a single stage mixing and fermentation process. In this all the ingredients are incorporated at once in a mixer to produce a dough. In this method, mixing time is usually longer than Sponge and Dough, as there is no biochemical development of dough. Gluten can be developed by two ways: Mechanical and Biochemical, in straight dough method, development of gluten is totally dependent on mechanical mixing of the dough. In this method, after mixing of the dough, dough is fermented for 1-3hrs before dividing or further processing.

c. No Time dough method

No Time dough method is also a single stage mixing and fermentation process.

In this dough is made just like Straight dough method, but there is no fermentation after mixing of the dough. This method is mainly used when there is shortage of time and production demand is high. Using this method, bread or any other yeast raised product can be made in less than 4hours.

These are the basic dough systems which are used in production units of breads, buns, rusk, and many more yeast raised products. Quality of the product is highly dependent on the mixing method used, as the flavor development, production speed, temperature of the dough, and time of fermentation, are dependent on the type of dough system used.

Sponge and dough, will give the most flavor, but is the most time consuming, whereas Straight Dough Method, will take less time, but will not give similar flavor like Sponge and Dough. No time dough method, will take the least time, but the flavor will be missing.

Choosing the type of Dough system depends on the type of product needed to develop and what flavor is required, to attain the production speed.

Filled Baked Goods

by AIBTM

Fillings are used in a variety of baked goods including pies, cakes, doughnuts, tarts, cobblers, and cheesecakes. The most commonly used fillings are fruit or cream-based.

Fruit fillings may contain fresh, canned, or frozen fruits. Frozen fruits are commonly used in fillings because of their uniformity, lack of waste, and keeping quality. Frozen fruits must be thawed and brought to the appropriate temperature before they are used.

Apples, strawberries, cherries, blueberries, and raisins are among the most commonly used fruits for fillings. Other fruit fillings include those containing caneberries (red raspberries, black raspberries, boysenberries), apricots, cranberries, dates, figs, prunes, and currants.

Apples

Apples are one of the most widely grown fruit trees. Apples used in baking are kept at controlled temperatures until use to slow ripening. Granny Smith, Fuji, and Jonathan apples are popular for a variety of baking applications.

Strawberries

Strawberries are used in baked goods whole, sliced, dried, concentrated, dried, and pureed. They can be used as toppings as well as fillings. Strawberries are commonly used in pies, cakes, Danish, and breakfast foods.

Cherries

Tart cherries or pie cherries are typically used in bakery products. Tart cherries are usually canned or frozen after processing to prevent spoilage. Cherries are available in many different forms including fresh, frozen, canned, dried, diced, concentrated, and granulated.

Blueberries

Blueberries may be used whole, juiced, fresh, frozen, dehydrated, or canned. Because blueberries are so tender and thin-skinned, they are often added to batters in frozen form help prevent them from

bursting during mixing and discoloring the batter. Blueberries are popular in pies, muffins, and bagels.

Raisins

Raisins are one of the most popular and commonly used fruits in baked goods including breads, pastries, and sweet goods. Raisins—which are actually dried grapes —can be stored at room temperature. Prior to use in baked goods, raisins must be conditioned to raise their moisture level to prevent them from drawing moisture from the dough. Raisins should be soaked in water and thoroughly drained prior to use in baked goods.

Fruit fillings are typically cooked before they are added to pie crust. To maintain the color and flavor of the fruit filling, it should be cooled rapidly after cooking.

To maintain the tenderness and flakiness of the pie crust, fillings should be deposited when cooled to room temperature, not while hot.

Cream-based or soft fillings typically include puddings and custard creams. These fillings are typically stabilized with modified starches.

For a chiffon filling, beaten egg whites are added to a crème or fruit stabilized with gelatin. Bavarian creams are custard sauce or sweetened fruit puree with gelatin and whipped cream added in.

Most types of fillings use gelling or stabilizing agents for consistency and texture and to help reduce the rate of liquid soaking into the crust.

Certain starches are generally used for these purposes, including modified corn starches, waxy maize starches, and also tapioca, potato or rice starches.

While some bakers prefer to produce their own fruit or cream-style fillings, many take advantage of the numerous prepared fillings available on the market.

Shelf Life of Bread

by AIB

The concept of shelf life of bread (and other baked products) is based simply on how long a product will remain presentable, retain good eating qualities, and remain safe to eat after it leaves the bakery. Shelf life is the length of time during which the product remains acceptable to the consumer without a significant loss in quality, or how long the consumer perceives a product to be fresh.

Consumers expect bread to look appealing (free from mold) and to taste fresh. When bread begins to stale, the crust toughens and becomes rubbery. The crumb becomes harsh and dry, loses flavor, and loses moisture. Shelf life of bread is affected by several different properties, particularly preservatives used in the bread, moisture content, proneness to mold growth, contamination, and packaging.

One critical factor in maintaining shelf life is the control of mold contamination. To control mold contamination, the bread products' contact with mold spores, which are ubiquitous, should be minimized. Proper and thorough cleaning and sanitation of the plant is crucial to preventing mold contamination.

Food contact surfaces must be clean, sanitary, and free of organic debris. The air in the production plant must be filtered to prevent airborne mold spores from reaching contact surfaces and the bread itself. Most mold spores are killed during the baking process. The majority of mold growth in bread is created by post-bake contamination.

A number of factors encourage mold growth. The most important factor is water activity. It is important to understand that water content and water activity are not the same thing. Water activity is a measurement of the "free" water in a system, i.e. the amount of water available for microbial growth. Understanding water activity also helps bakers choose appropriate packaging for their products.

Preservatives (both natural and artificial) cannot take the place of good sanitation practices, but they can help inhibit mold growth in baked bread. Preservatives do not stop microorganism growth, but they can slow it down.

Chemical preservatives include propionates, benzoates, sorbates, acetates, and parabens. Natural preservatives include vinegar, certain spices, raisin juice concentrate, ethyl alcohol, and fermented flour or whey.

Shelf life can also be increased through changes in the bread dough formulation itself. Moisture-retaining (hygroscopic) ingredients such as sugars, gums, fats, emulsifiers, and fibers can help extend the shelf life of breads. After baking, breads should not be packaged before they are cooled to their proper packaging temperature.

Packaging is an important component in extending shelf life and reducing staling. Modified atmospheric packaging (MAP) is helpful in preventing mold spoilage in bread. In this type of packaging, mixtures of carbon dioxide or nitrogen replace most of the oxygen present inside the packaging, thus making it more difficult for molds to grow. The modified atmosphere inside the package slows respiration rates, reduces microbial growth, and slows enzymatic spoilage.

Oxygen absorbents play a significant role in packaging and extending shelf life. Extracting all of the oxygen from packing is difficult, and even when MAP packaging is employed, the residual oxygen remaining may be sufficient to promote mold growth and staling. Oxygen absorbents are introduced into MAP packaging where they act as scavengers, absorbing the residual oxygen from the packaging atmosphere.

Oxygen absorbents are made from ascorbic acid or iron power, and are contained in a sachet, like a desicant, and help protect the baked products from mold, chemical spoilage, and insects. While typically used in conjunction with MAP packaging, oxygen absorbents can also be used alone.

When establishing shelf life for a product, the schedule for consumption should be kept in mind. Products that will be eaten within 48 hours will not require mold inhibitors. Freezing and refrigeration will inhibit mold growth on products. Formulations designed for extensive shelf life may be detrimental to the taste and appeal of the bread.

Product Development

by AIBTM

Consumer demand drives the need for new product development. Product development can include the introduction of an entirely new product, or the expansion of an existing product or line of products.

One of the major considerations in product development is in the scale-up of the original formulation. Taking a successful small batch of a new product and converting the formula to large-scale production includes converting a recipe to a formula, as well as considering raw material and equipment needs.

Developing new products or expanding existing product lines frequently involves converting a recipe (small volume measurements) to a formula (weights and percents). This conversion is known as scale-up. Scale-up uses baker's math to appropriately convert the recipe to a large-scale formula. The converted formula serves as a starting point and requires repeated testing and adjustments to create the desired characteristics in the finished product.

New formulas should start with small batches and be tested multiple times as batch size increases. Mix times and absorptions change during scale-up. Equipment should also be tested multiple times during new product development. Mixing changes, heat transfer, hydration rate, and processing times all change in new and scaled-up formulations. Careful monitoring and testing is essential in guaranteeing a consistent, quality finished product.

Product scale-up also requires an assessment of equipment needs. The baker needs to consider the amount of product they intend to make in a day, week, or month, and determine if new equipment will be needed to meet the increased production demand. Existing equipment can sometimes be modified to handle a new formula or increased output, but typically additional equipment will be necessary when new products are developed or lines are expanded. Equipment needs can include mixers, ovens, dividers, sheeters, proof boxes, fryers, conveyors, freezers, coolers, and packaging equipment.

When developing new products, shelf-life is always a consideration. Bakers need to determine the length of shelf-life needed in the new product, as well as methods by which the products will be distributed, and if they will be sold fresh, refrigerated, or frozen.

Product development also requires assessing the needs for ingredients and packaging. The baker must first determine what ingredients are needed, if the ingredients are available, and the cost, quantity, and form of necessary ingredients. For example, new products may require a specific type of flour that is either unavailable, difficult to find in the necessary quantities, or too expensive for the product to be profitable. The same can be true of other ingredients, such as eggs, yeast, and water.

Packaging presents another challenge in product development, especially as packaging can be expensive. Proper packaging protects the product and product quality, adds visual appeal to the product, and communicates with consumers. There are many varieties of packaging that can be used (bags, carton, films, plastic clam shells, etc.) depending on the type of product being developed. The cost of each type of packaging should be factored into the overall production costs.

Once the formula has been tested and confirmed, the proper ingredients and equipment obtained, and packaging methods and materials in place, the new or expanded product lines can be created and marketed for sale.

It is a good practice to conduct a market survey prior to product development to make certain that there is consumer demand for the product to be developed and produced. Once this initial market survey has been completed, it may be necessary to change the original concept to one that has a stronger demand. A formal marketing campaign may be initiated prior to the production and sale of the new product in order to create market interest. For retail bakeries, this campaign may consist of announcements in social media and local publications, table-toppers, and other inexpensive marketing methods. For commercial bakeries, the marketing information is typically introduced as part of an existing larger, overall marketing strategy.

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Mr. Rajat Jain, General Manager, Assocom India Pvt. Ltd.
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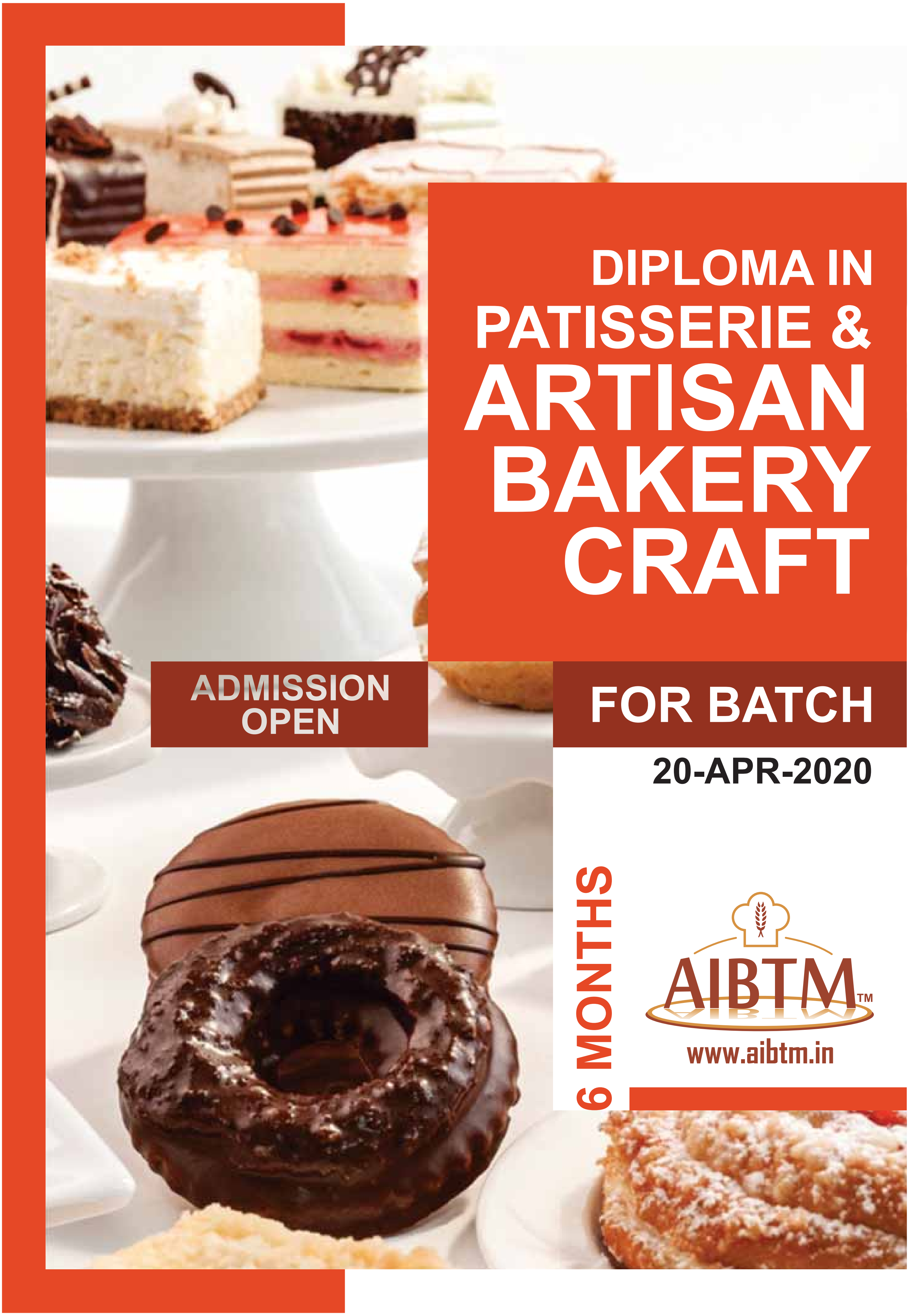
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