

[ Milk Street **COOKING SCHOOL** ]

# Finally! A Pizza Dough That Is Chewy, Crisp and Easy to Work With

**The secret isn't in the ingredients. It's the temperature of the dough**

Story by CHRISTOPHER KIMBALL

**T**HIS IS A STORY ABOUT HEAT, and it begins on a muggy August day at my hunting cabin in Vermont. It sits atop a small mountain surrounded by 2,500 acres of forest, streams and abandoned

pastures gone wild with milkweed, goldenrod and timothy grass. That day, I threw together a quick batch of pizza dough—nothing fancy—to grill later to feed an influx of in-laws.

As I shaped the dough, I noticed it was particularly elastic and easy to work with. And when the dough hit the hot grill, it bubbled like a champ. The finished pizza was chewy at the crust, crisp on the bottom and had remarkable flavor. It was the best pizza I had ever made.

Something was different. I have been making pizza for over 40 years with random, mostly unsatisfying results. A chewy crust with good flavor and a crisp bottom is hit or miss. The crust is tough. The dough is hard to handle. There is little soft chew.

And when I speak with professional bakers, I endure long speeches about fermentation and hard-to-find flours. All the while, I know that a professional bakery offers plenty of oven heat and a rich cloud of yeast spores, all of which combine to turbo-charge the dough, rendering the pros' advice suspect, at least as it applies to the home cook.

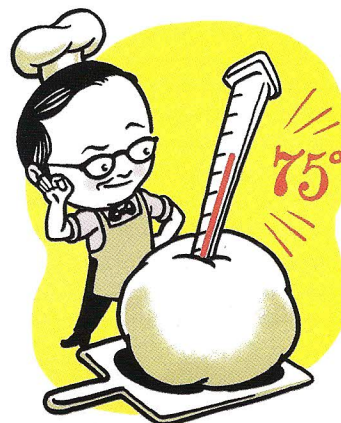
Better bakers than I have turned their attention and experience to pizza dough, providing a host of solutions, from Jim Lahey's no-knead dough—which takes 18 hours at room temperature—to Nancy Silverton's use of rye flour, barley malt and wheat germ in recipes that call for a long, slow fermentation in the refrigerator for up to three days.

As we tried to recreate my hunting-cabin success, we consulted with Ken Forkish, who has written an entire book on the art of pizza and, thankfully, has focused on how to make pizza in a typical home kitchen.

Other pizza experts have tried adding whole wheat, cornmeal, semolina, molasses, ascorbic acid (to strengthen the gluten), beer, baking powder and buttermilk. And, of course, there is much discussion of hydration level—the weight of water as a percentage of the weight of the flour.

But my experience on that hot muggy day got me thinking that perhaps the secret to great pizza is less about the recipe itself and more—if not entirely—about the temperature of the dough.

My home kitchen tends to run



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cool—under 70°F—and I always have trouble proofing dough. I've been known to move bowls of dough next to the fireplace to get the yeast moving. I have even tried turning my oven into a proofing box (heat it to 200°F, then turn it off), but this method is dicey at best. I have killed off the yeast more than once.

At Milk Street, after we tried a number of recipes with unsatisfactory results, we discovered that our kitchen temperature was just 63°F. The recipe itself was pretty

standard—bread flour, sugar, yeast, water, salt—and the hydration level was modest, just below 65 percent. Some experts, such as Forkish, prefer 70 percent hydration, but one needs a very hot oven and a lot of skill in stretching a dough with that much water. (When tested, higher hydration doughs do offer more bubbling and cracking, but we found that home bakers tend to reflexively add flour back to a sticky dough, which defeats the purpose.)

We did pick up a tip from both Forkish and Tony Gemignani, author of “The Pizza Bible,” which was to divide the dough into four individual balls before proofing (a method called divided proofing), instead of proofing the entire dough recipe in one large mass (bulk fermentation).

We also used a 24-hour cold fermentation to build flavor. As Forkish says, “Time is an ingredient.” (I find that 24-hour make-ahead dough is actually more convenient than last-minute recipes.)

The resulting pizza was fine but not remarkable. The big problem was the cool kitchen temperature. No matter how we adjusted the recipe, the dough never became sufficiently active. Diane Unger, one of our top recipe developers, proofed the dough in small plastic deli containers. After 24 hours, the containers were rested on the counter for two hours and then, if the dough was not up to 75°F, she immersed the dough in warm



[ COOKING SCHOOL Master Recipe ]

# Pizza Dough. Perfected.

(100°F) water for up to 30 minutes using two bowls. (We also used plastic bags, which worked well when coated with cooking spray.)

We tested two doughs side by side; one was at 65°F; the other 75°F. The cooler dough was almost impossible to stretch; we never made it to the full 12 inches. The warmer dough, by comparison, was easy to shape. Once baked, the cooler dough was noticeably flatter, less bubbly and slightly tougher.

But the warm dough looked like it came from an artisanal pizzeria—a big, bubbly crust and great chew. We did find that a baking steel was preferable to a baking stone. It reached 550°F (the stone only hit 525°F) and provided better oven spring. You can use a pizza stone, but baking time will have to be increased two to three minutes.

Why does this work? As the yeast cells in the dough die, they release something called glutathione. This tripeptide weakens gluten, relaxing the dough and allowing it to be stretched more easily. The added resting time and warmer temperatures in our recipe provide plenty of time for this reaction to take place, producing a more relaxed, easier-to-work dough.

And therein lies the simple secret of great pizza dough. If the dough reaches 75°F, it has less gluten formation, it is easy to shape, the yeast is sufficiently active, and you get a nice bubbly crust with good chew and excellent oven spring. A cooler dough just never makes the grade.

We tried many toppings for this dough, but our favorite by far used a white sauce of fontina, Parmesan and heavy cream. The sauce, which has whipped cream-like consistency, was inspired by the panna (cream) pizza at Nancy Silverton's Pizzeria Mozza in Los Angeles. While she tops her white sauce with sausage, we found it also pairs well with roasted portobello mushrooms. ♦

## Pizza Dough

*Start to finish: 1½ days (20 minutes active) | Makes four 8-ounce portions of dough*

**T**HOUGH ANY VARIETY of bread flour will work, we liked King Arthur Flour best. It has a higher protein content, producing crusts with good flavor, nicely crisped surfaces and a satisfying chew. Making the dough with cool or cold water helps prolong the fermentation process, which provides better flavor. When dividing and fermenting the dough, quart-size plastic bags (coated with cooking spray) are easiest, but well-oiled

bowls or plastic containers with lids work well, too. Following the overnight fermentation, the dough can be frozen for longer storage; to use, allow to thaw overnight in the refrigerator, then proceed with the recipe.

**Don't shorten the fermentation** and room-temperature warming times. The dough requires at least 24 hours in the refrigerator to ferment, then needs to come up to 75°F before shaping. —DIANE UNGER

- 548 grams (4 cups) bread flour, plus more for dusting
- 1 tablespoon white sugar
- ¾ teaspoon instant yeast
- 1½ cups cool (65°F) water
- 2 teaspoons kosher salt

■ **In a stand mixer** fitted with the dough hook, combine the flour, sugar and yeast. Mix on low to combine, about 15 seconds. With the mixer running, slowly add the water, then mix on low until a slightly bumpy dough forms and clears the sides of the bowl, about 5 minutes. Cover the bowl with plastic wrap and let rest for 20 minutes.

■ **Uncover the bowl**, sprinkle the salt over the dough and mix on low until smooth and elastic, 5 to 7 minutes. If the dough climbs up the hook, stop the mixer, push it down and continue kneading.

■ **Scrape the dough** onto a well-floured counter and divide it into 4 pieces. With floured hands, form



The temperature of the dough to the right is 75°F. It's more supple than the dough to the left, which is 10°F cooler.



Professionals begin shaping dough with the backs of their hands. They rest the dough on their knuckles.



They begin to shape the dough by moving their hands apart, gently stretching and rotating the dough.



Gravity also does some work. As they rotate the dough, it hangs down and stretches on its own, as well.



For beginners, it is easier to simply place the dough on a counter and stretch it from the center (see our pizza recipe).



The edges of the dough can be picked up or loosened with a bench scraper if the dough begins to stick.



Form the edge of the pizza crust by pressing the dough against the palm of one hand with the side of your fingers.



Move or slide the shaped dough onto a metal or wooden baking peel that is lightly dusted with semolina.



Once the dough is on the peel, use a measuring cup to ladle sauce onto the dough. For red pizza, use ½ cup tomato sauce.



Use the back of a spoon to spread the sauce, leaving ½-inch border around the edge of the dough for the crust.



Bake 5 minutes on a baking steel or 7 minutes on a stone, then add sliced fresh mozzarella that's been patted dry.



Once the pizza is fully baked, cool on a wire rack for a minute or two, then sprinkle with basil and red pepper flakes.



each into a taut ball and dust with flour. Mist the insides of 4 quart-size plastic bags with cooking spray, then add 1 ball to each. Seal and refrigerate for 24 to 72 hours.

▪ **About 1 hour before** making pizza, mist 4 small bowls with cooking spray. Transfer the dough balls to the bowls. Cover with plastic wrap, then set each bowl into a larger bowl of 100°F water for 30 minutes, or until the dough reaches 75°F, changing the water as needed. Shape according to directions.



### Tomato Sauce for Pizza

*Start to finish: 30 minutes, plus cooling  
Makes 2 cups (enough for 4 pizzas)*

**T**HIS SAUCE RECIPE is easily doubled, and any unused sauce can be frozen. We like to freeze it in 1-cup portions, enough for two pizzas.

—DIANE UNGER

28-ounce can whole peeled tomatoes, with juice  
2 tablespoons extra-virgin olive oil  
2 garlic cloves, minced  
1 teaspoon dried oregano  
½ teaspoon red pepper flakes  
Kosher salt and ground black pepper

▪ **In a blender**, process half of the tomatoes until smooth, about

20 seconds. Transfer to a large bowl. Process the remaining tomatoes until mostly smooth but with some chunks, 4 or 5 pulses. Add to the bowl.

▪ **In a medium saucepan** over medium, heat the oil, garlic, oregano and pepper flakes, stirring occasionally, until sizzling. Slowly pour in the tomatoes and stir. Bring to a simmer over medium-high, then reduce to low and cook, stirring occasionally and adjusting the heat as needed to maintain a simmer, until a wooden spoon leaves a trail when drawn through the sauce, 20 to 25 minutes.

▪ **Remove from the heat** and let cool to room temperature. Taste and season with salt and pepper. Refrigerate in an airtight container for up to 3 days, or freeze for up to 1 month (thaw and stir to recombine before using).

### Roasted Mushroom Pizza with Fontina and Scallions

*Start to finish: 35 minutes,  
plus heating the oven  
Makes one 12-inch pizza*

**H**EATING THE OVEN and pizza steel or stone to 550°F takes about an hour. We use this time to roast portobello mushrooms, which we combine with our fontina-Parmesan cream white sauce. The mushrooms can also be prepared and refrigerated up to 24 hours beforehand. When shaping the pizza dough, make sure that the edges are thicker than the center so they will contain the cream sauce, which becomes runny during baking. If your oven only goes to 500°F, the pizza will need to bake for an extra two minutes. If you don't have a pizza steel or stone, use an overturned rimmed baking sheet.

**Don't undercook the mushrooms.** Roasting them until they are well browned removes moisture that would otherwise make the pizza crust soggy.

—DIANE UNGER

1 pound portobello mushroom caps  
½ cup extra-virgin olive oil  
Kosher salt and ground black pepper  
1 tablespoon finely chopped fresh thyme

3 garlic cloves, minced  
1 portion pizza dough, warmed to 75°F

Bread flour, for dusting  
1 tablespoon semolina flour, for dusting  
1 cup fontina-Parmesan cream  
2 scallions, thinly sliced on bias  
¼ teaspoon red pepper flakes

▪ **At least 1 hour** before baking, heat the oven to 550°F with a baking steel or stone on the upper-middle rack and a second rack in the lower-middle.

▪ **Using a spoon**, scrape off and discard the gills on the undersides of the mushroom caps. Halve any caps that are 5 inches or larger in diameter, then cut the caps into ¼-inch slices. In a large bowl, toss the mushrooms, olive oil and ½ teaspoon salt.

▪ **Spread the mushrooms** in an even layer on a rimmed baking sheet. Roast on the lower oven rack, stirring once, until they have released their moisture, the moisture evaporates and the mushrooms begin to brown, about 15 minutes. Stir in the thyme and garlic, then roast until the mushrooms have browned and the garlic is no longer raw, another 3 to 4 minutes. Let cool completely on a wire rack. Leave the oven on.

▪ **Turn the dough out** onto a counter dusted with bread flour. Flour your hands and, using your fingers, press the dough, starting at the center and working out to the edges, into a 12-inch round, turning the dough over once. The round should be thin at the center, with slightly thicker edges. Lightly dust a baking peel, inverted baking sheet or rimless cookie sheet with the semolina. Transfer the dough to the peel and, if needed, reshape into a round.

▪ **Using the back of a spoon**, spread the fontina-Parmesan cream evenly



on the dough, leaving a ½-inch border at the edge. Scatter the mushrooms over it and season with pepper. Slide the pizza onto the baking steel or stone and bake until the crust is well browned, 7 to 9 minutes.

▪ **Using the peel**, transfer the pizza to a wire rack. Let cool for a couple of minutes, then sprinkle with scallions and red pepper flakes.

### Fontina-Parmesan Cream

*Start to finish: 10 minutes  
Makes 2 cups (enough for 2 pizzas)*

**T**HIS CREAM-BASED WHITE pizza sauce—inspired by Nancy Silverton—pairs well with roasted portobello mushrooms. We also liked it with sausage and hot peppers (but make sure the peppers are cooked first so they don't leak moisture into the sauce).

¾ cup heavy cream, cold  
1 cup shredded fontina cheese  
¼ cup grated Parmesan cheese  
1 tablespoon minced fresh rosemary  
½ teaspoon ground black pepper

▪ **In a stand mixer** fitted with the whisk attachment, whip the cream on medium until stiff peaks form, about 2½ minutes. Using a rubber spatula, fold in the fontina, Parmesan, rosemary and pepper. Refrigerate for up to 3 days.