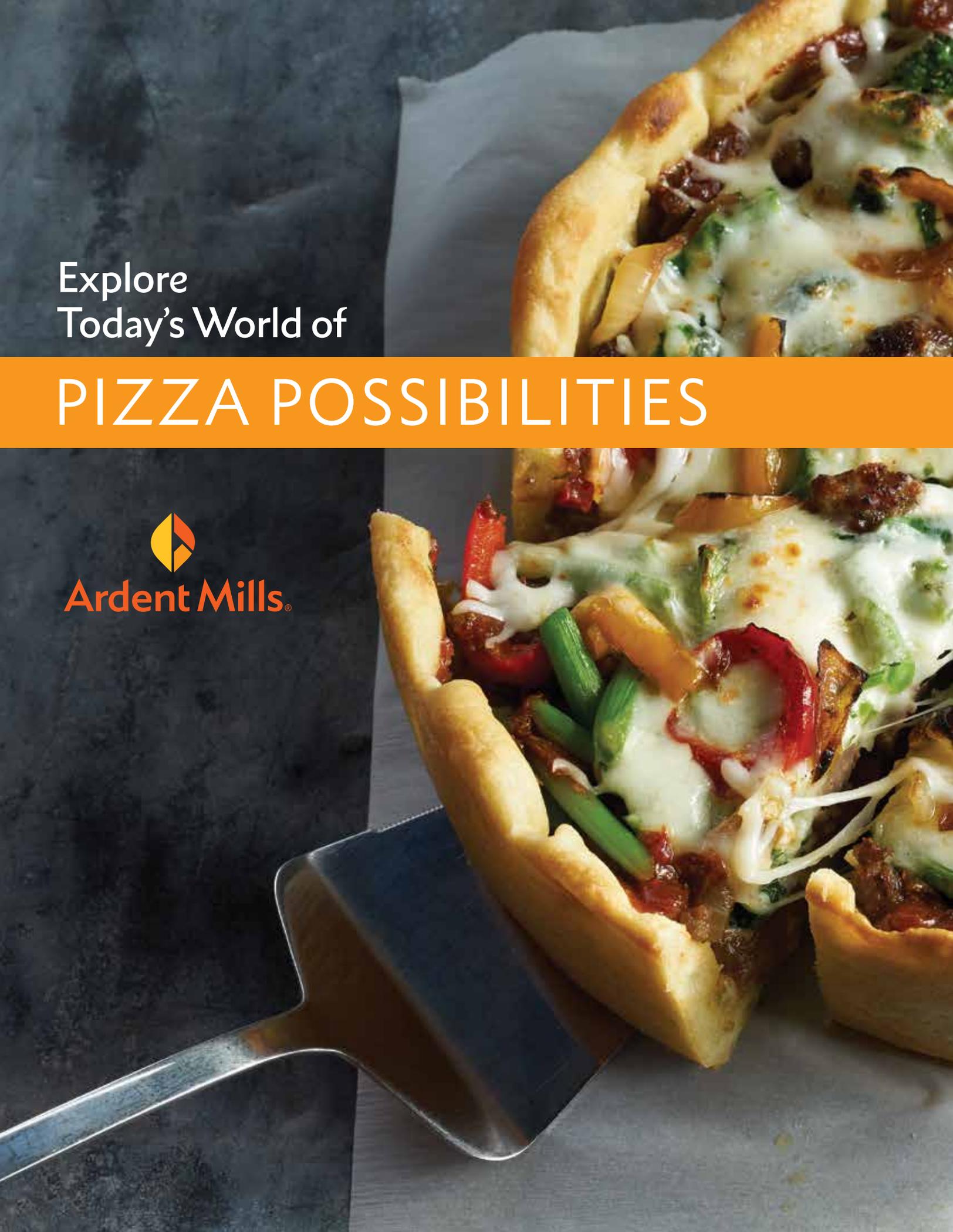


Explore
Today's World of

PIZZA POSSIBILITIES



Ardent Mills®



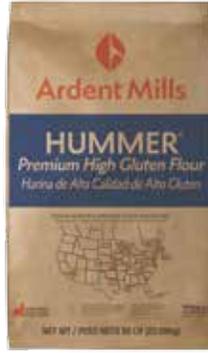
A Complete Portfolio of Traditional Flours, Grain Innovations, and Pizza Mixes

Whether you're looking to ensure consistent quality and performance, give your crusts that classic Italian style, add whole grain nutrition or take advantage of the ever-growing interest in ancient grains, Ardent Mills has the ingredients to help you rise above the competition. With national specifications for our flour brands that must be met at each of our mills, you can rest assured, Ardent Mills' flour performs the same, every time, everywhere.

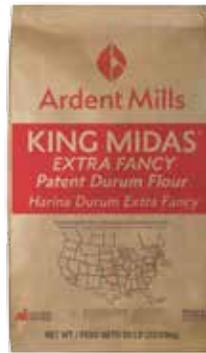
TRADITIONAL FLOURS



Kyrol: Our go-to premier high-gluten flour sets the standard for a great crust, ideal for thin-crust pizzas.



Hummer: Premium high-gluten flour that delivers time after time, perfect for thin-crust pizzas.



King Midas Extra Fancy: With strong protein and extensibility, our durum flour imparts a slight chew and golden color in crusts.



King Midas Special: The trusted standard-patent flour for both thin- and thick-crust pizzas.



Primo Mulino: Milled from the same Canadian wheats used in 00 flour, it's the perfect match for Neapolitan-style crusts.

GRAIN INNOVATIONS



Simply Milled Bread Flour: Simply organic wheat flour with no enrichments, bleach or bromate. Works well in thick- and thin-crust pizza.



Ultragrain T-2: A blend of 55% Ultragrain whole wheat flour and 45% premium enriched white flour, adds whole grain nutrition to any crust.



Sprouted White Spring Whole Wheat Flour: Sprouted whole grain flour with exceptional bake performance in a variety of pizza crusts.



- | | |
|----------|-----------|
| Amaranth | Buckwheat |
| Quinoa | Spelt |
| Sorghum | Rye |
| Millet | Triticale |
| Teff | Barley |

Ancient & Heirloom Grains: Add unique flavors and textures, culinary appeal, and adventure with our leading line of Ancient & Heirloom Grains.

PIZZA MIXES

Off-the-Shelf Mixes:

- Classic
- Primo Mulino Neapolitan Style
- Ancient Grain
- Whole Grain

Custom Mixes:

Put our R&D team to work on a custom-mix formulation to safeguard your scratch recipe and ensure crust consistency and quality across your chain.





Trends We're Watching

From insights to innovation, we're watching what's happening in pizza so that you're ready to deliver what's next. Here are a few bites from our most recent pizza crust trends research*:

*ARDENT MILLS PIZZA CRUST STUDY, JAN. 2017

Pizza is a big slice of the menu



Pizza appears on nearly 30% of restaurant menus.

Crusts just beginning to rise ...



Pretzel



Coal-fired

Ancient Grains



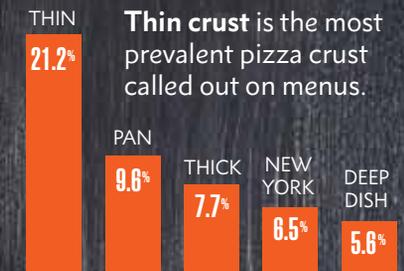
Brick Oven



Infused Crusts (olive oil, beer)



Top pizza crusts



Thin crust is the most prevalent pizza crust called out on menus.

Fastest-growing crusts over the last 4 years:

Wood-fired 25%
Wheat 18%
Stuffed 16%
Chicago 8%
Square 7%
New York 6%

3 of the top 6 unique pizza concepts ...



... featured **beer or ale** in the dough or as a flavor.

QUINOA

is not only one of the most popular but also one of the fastest-growing grains featured on menus today. Over the last year, it grew

21%



Classic Pizza Dough Formulas for your Menu

Bring the unique styles of crusts from all over the world to your pizzas and restaurants with the help of our chef-inspired recipes.

New York-Style Pizza Dough

INGREDIENTS	Bakers (%)	Weight (g)	Formula (%)
Kyrol® Premium High Gluten Flour	100.0%	1204	60.3%
Water	59.0%	710	35.6%
Oil	1.8%	22	1.1%
Sugar	3.0%	36	1.8%
Salt	1.8%	22	1.1%
Yeast	0.2%	2.4	0.1%
	166%	1996.4g	100%

1. Mix dry and wet ingredients until flour hydrates. Then mix on medium 4-6 minutes or until dough just comes together.
2. Divide dough and round into balls (436g for 14-inch pizzas).
3. Refrigerate for 12-72 hours before forming, topping and baking.

NEW YORK STYLE is the 4th most popular crust in the U.S.

DEEP-DISH PIZZA DOUGH

INGREDIENTS	Bakers (%)	Weight (g)	Formula (%)
King Midas Special® Premium Baker's Flour	95.0%	670	55.8%
Cornmeal	5.0%	35	2.9%
Water	59.0%	416	34.7%
Butter, Melted	4.0%	28	2.3%
Yeast	0.7%	5	0.4%
Salt	1.5%	11	0.9%
Sugar	5.0%	35	2.9%
	170%	1200g	100%

ADDITIONAL INGREDIENTS

Butter, tempered for laminating	10.0%	71	6%
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1. Combine dry ingredients, melted butter and yeast dissolved in water, on low mix speed until all ingredients incorporated. Then mix 4-6 minutes until dough is soft and pulls away from bowl.
2. Allow dough to rest 10-15 minutes.
3. Roll dough into a large 15x12-inch rectangle. Laminate by spreading butter (71g) onto dough and roll it up lengthwise into a log.
4. Cut log in half and form two dough balls, and refrigerate 1-2 days.
5. Roll one dough ball into 12-inch circle and place over 9x2-inch cake pan. Press the dough into the pan. Fill and bake.

Baking Tip: Grease cake pan and coat with semolina.

Neapolitan-Style Pizza Dough

INGREDIENTS	Bakers (%)	Weight (g)	Formula (%)
Primo Mulino™ Italian Style Flour	100.0%	615	62.0%
Water, Warm 100°F	55.5%	341	34.0%
Yeast	0.2%	1.2	0.1%
Extra Virgin Olive Oil	4.1%	25	2.5%
Salt	2.0%	12	1.0%
	162%	994g	100%

1. Combine flour and salt with dissolved yeast, on low speed for 2 minutes. Increase speed and mix 8-10 minutes until dough is smooth and pulls away from sides of bowl.
2. Divide dough into preferred size and round into balls.
3. Cover and refrigerate for 2 days before forming, topping and baking.

SICILIAN PIZZA DOUGH

INGREDIENTS	Bakers (%)	Weight (g)	Formula (%)
Kyrol® Premium High Gluten Flour	95.0%	583	56.3%
King Midas® Extra Fancy Durum Flour	5.0%	31	3.0%
Water	59.0%	362	35.0%
Yeast	0.2%	1.2	0.1%
Salt	1.5%	9	0.9%
Sugar	5.0%	31	3.0%
Baking Powder	2.9%	18	1.7%
	169%	1035	100%

1. Combine flour, baking powder and salt with dissolved yeast, on low speed for 2 minutes. Increase speed and mix about 6 minutes until dough sticks to the bottom of the bowl but pulls away from sides.
2. Place dough into pizza bin or bowl, cover and refrigerate overnight.

For the complete formulas, contact your distributor or Ardent Mills account manager.

Perfect Pairings

Which pizza crust ingredients work best with unique toppings? Try these tasty combinations to give your pizzas the perfect flavor!

QUINOA



With roots in South America, quinoa has a slightly nutty and fruity flavor. Pair it with like toppings such as fire-roasted corn, poblano chili salsa, avocado, grilled beef or pork.

BUCKWHEAT



Enjoyed in Asian, Russian and European cuisines, buckwheat's nutty flavor and intriguing dark color combine well with kimchee, hoisin, scallions and blue cheese.

RYE



A close relative of wheat, this distinctive European grain is being rediscovered and matched with mustard, pastrami, fermented vegetables and smoke flavors.

BARLEY



The quintessential ingredient in beer, barley's unique flavor is well-suited for pizzas topped with sausages like bratwurst, onions and whole grain mustard.

QUICK TIP: Getting Started with Ancient Grains in Pizza Dough

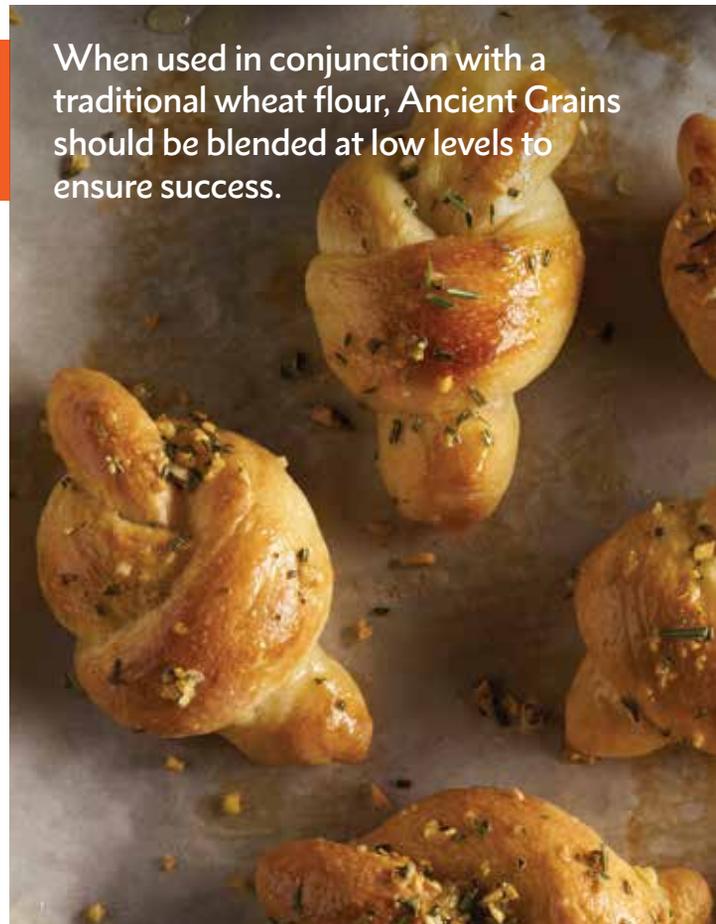
Many Ancient Grains like quinoa, amaranth, millet, teff, sorghum and buckwheat are gluten free, which means they'll have no functionality compared to traditional wheat flours. When used in conjunction with a traditional wheat flour, Ancient Grains should be blended at low levels to ensure success.

We recommend starting at low percentages such as 5% to 10% of total flour weight. At these levels, you can expect to see little impact to dough performance, while still being able to use the grains' flavors, colors and textures. As the inclusion percentage increases, flavor and textural characteristics will become more noticeable, however, gluten functionality will be further reduced.

Other ancient grains that are wheat varieties, like spelt, do have gluten functionality, though not as much as a high-gluten flour. They can be used alone or blended with other wheat flours to achieve the desired outcome in texture and performance.

Ardent Mills offers a variety of Ancient and Heirloom Grains for your next culinary adventure.

When used in conjunction with a traditional wheat flour, Ancient Grains should be blended at low levels to ensure success.





Dough Problem Solvers

Below is a list of some of the most common pizza crust baking problems and their possible solutions. If you need more support, contact our pizza experts. Together, our team has the culinary resources and expertise to troubleshoot your dough challenges and turn your ideas into finished products, helping inspire and grow your business.

	PROBLEM	POSSIBLE REASON	SOLUTIONS TO CONSIDER
Inconsistent Dough Inconsistent dough is often the result of varying temperature, whether from ingredients, bakery equipment or the ambient temperature of the bakery or pizzeria. Calculating your desired dough temperature (DDT) is integral to efficiency.	Dough rises too fast	<ul style="list-style-type: none"> • High yeast activity 	<ul style="list-style-type: none"> • Decrease dough temperature • Retard the dough by refrigeration • Decrease sugar • Increase salt
	Dough is not rising fast enough	<ul style="list-style-type: none"> • Slow yeast activity 	<ul style="list-style-type: none"> • Check yeast quality/handling • Allow for a bench rest before a retarded fermentation • Increase dough temperature • Increase sugar • Increase yeast • Decrease salt
	Dough elasticity is lacking	<ul style="list-style-type: none"> • Gluten development 	<ul style="list-style-type: none"> • Does the type of flour fit the desired outcome? • Adjust mix time for desired gluten development • Retard dough for a longer fermentation period • Increase bench rest time prior to baking
Crust Characteristics Crust characteristics are largely determined by the dough formulation, cooking environment and the steps taken prior to baking.	Crust is too dark	<ul style="list-style-type: none"> • Pizza is overbaked • Oven temperature too low • Ingredient balance 	<ul style="list-style-type: none"> • Increase oven temperature and reduce bake time • Consider toppings that will cook quicker • Decrease sugar or other browning ingredients
	Crust has inadequate flavor	<ul style="list-style-type: none"> • Formula not balanced • Inadequate fermentation 	<ul style="list-style-type: none"> • Use of a preferment • Incorporate a longer, lower temperature fermentation period • Add honey or sugar
	Texture is soft or doughy Soggy crust	<ul style="list-style-type: none"> • Oven is too cool • Wrong type of flour • Toppings are too wet • Dough is underbaked 	<ul style="list-style-type: none"> • Increase oven temperature • Use a type of flour that is higher in protein • Reduce amount of sauce or moisture of toppings
	Texture is hard Crust is too thick	<ul style="list-style-type: none"> • Pizza is overbaked 	<ul style="list-style-type: none"> • Increase temperature of cooking environment • Shorten the bake time • Use toppings that cook quicker
	Large bubbles	<ul style="list-style-type: none"> • Pizza is underproofed • Dough is too wet • Yeast is too active • Dough is too cold 	<ul style="list-style-type: none"> • Increase proof time • Decrease hydration • Decrease yeast • Dock the dough • Allow dough to warm up before baking

Speak the Language of the Experts A glossary of flour terms

Moisture

The amount of water present in the flour after milling, typically 14%.

Ash

The mineral content left after “burning” the flour sample. The highest concentration of ash is in the bran. Ash is used as a general indicator of bran content.

Absorption

The amount of water that will be taken up by flour to produce the desired dough consistency and performance.

Protein

Protein is the most common measure of the gluten content of various wheat types and the resulting flour, and is the most accepted standard for flour prices and grades.

Gluten

Gluten is functionally important in baked goods because it forms an elastic web when mixed with water that traps gases produced during the leavening process, allowing dough to “rise.”