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RULES & TOOLS | TRANSCRIPT | LESSON 2

Flour Power



GLUTEN-FREE
BAKING
ACADEMY

Welcome back to one of the most important modules in this course, where we build an informed foundation that'll help us confidently get our hands dirty next week with the first recipes. This lesson is all about understanding what ingredients we aren't using and why. A lot of baking power comes from the flour. In conventional baking, this has held strong with the use of one main flour—modern wheat—for generations. The new rules for GF baking provide us with a variety of possibilities. But to better appreciate this new horizon and to keep it from overwhelming us, we need to clear the lens we're used to looking through.

Now that we have Six Basic Rules to keep in mind as we learn to bake gluten-free goods, let's gather a better understanding of common, everyday baking ingredients we won't be using and why. And let's also learn what gluten is, really...

Flour Power

One of the big differences between conventional baking and GF baking is that there isn't really one GF flour that can do the heavy lifting in a recipe like wheat flour can. This is one reason why wheat is ubiquitous in conventional baked goods—it's easy and reliable outcome wise. GF flours can build structure in bread, but GF flours lack one protein in particular that gives wheat so much power to dominate the baking world. That protein is gluten, and it behaves a lot like “glue” to hold ingredients together and trap gases that help bread lift.

With GF baking, we use a variety of gluten-free grains, seeds, and nuts to build structure. We also have to add a glue-like ingredient, or combine GF ingredients to create a glue-like effect to hold the walls of the bread crumb together. Every flour acts a unique way when mixed with other flours, sweeteners, and liquids. In a lot of gluten-free baking, you'll find that eggs are used since they can replicate gluten-y properties, trapping CO₂ and making those coveted bubbles found in each slice. But with gluten-free, egg-free baking like we do in this course, combining particular flours and whole food egg replacers are what make the perfect flour mix.



Most store-bought, gluten-free baked goods and recipes consist of highly processed white rice flour, tapioca starch, potato starch, potato flour, xanthan gum, guar gum, pectin, cornstarch, and many call for eggs. A few of these mixes yield white breads that are tasty enough—but most of them don't, which is possibly the reason why you're taking this course. Let's just say that there's no reason why you can't have delicious GF bread and get your nutrients, too. The recipes in this course provide you with many options you can enjoy regularly without compromising health, and you'll be happy to know that many slices of bread prepared in this course contains anywhere from 2–5 grams of protein and 2–5 grams of beneficial fiber per slice!

What is Gluten?

If someone asked you (before you started this course, of course) “do you actually know what gluten is?” Would you know how to answer? If not, that's ok, you're going to learn all about it. We discuss what gluten is and why it's such a controversial topic thoroughly in a Knead to Know Sheet for this Module, so be sure to read up for a deep dive. In short, gluten—appropriately from the Latin word for “glue”—is a protein found in wheat and some non-wheat ingredients that makes pasta chewy and holds bread together. Without it, baked goods can fall apart or yield dry, crumbly textures. For many, especially with modern wheat, the gluten in it can cause serious gut inflammation, which over time, can result in myriad health issues with symptoms ranging from migraines to mood and behavior disorders.

Know the Ingredients—All of Them

Even if we aren't baking with wheat and gluten-containing ingredients, it's important to have a general understanding of what we aren't using—it's part of making informed choices. So, let's go over some of the more traditional ingredients used in baking.



Now, all varieties of wheat (like common wheat or durum, spelt, Kamut®/khorasan, einkorn, farro/emmer) and triticale (which is a rye/wheat hybrid) contain the protein gluten, but not all gluten-containing ingredients contain wheat. For instance, barley and rye aren't wheat or wheat hybrids but they do contain the gluten protein.

So what baking ingredients contain gluten and which ones don't? Here's a list of the baking grains, ingredients, and flours that *do* contain gluten:

Wheat or Related to Wheat

Whole Wheat

Comprised of the fibrous outer bran layer, the nutrient-rich wheat germ, and the inner core of starch and protein, called the endosperm—all three of these layers must be present in the product for an item to be called “whole wheat.”

Durum Wheat

Also known as “macaroni wheat,” durum is milled to remove the bran and germ. It's the wheat of choice for pasta making.

Semolina

The coarse, purified wheat middlings of durum wheat used in making pasta, breakfast cereals, puddings, and couscous. “Middlings” is a manufacturing/processing term used to define medium-grade bulk goods like flour of medium fineness. The term “semolina” can also be used to designate coarse middlings from other varieties of wheat, and from other grains, like rice and maize.

Farina

A cereal food which is usually made from cereal grains and semolina.

Wheat Bran

The hard outer layers of wheat grain that have been removed during processing—used for adding texture and fiber back into processed cereals and baked goods.

Bulgur

Another cereal food made from the groats of a variety of wheat species, mainly modern durum wheat. “Groats” are hulled kernels of cereal grains.



Farro/Emmer

Farro is the Italian name for the ancient strain of hard wheat called “emmer.”

Spelt

A cousin to modern wheat, the gluten in spelt behaves differently than the gluten in wheat when cooking and baking. It's said that the gluten in spelt is more soluble than it is in modern wheat and some folks claim that it's easier to digest.

Kamut®

A brand name for a recently revived strain of wheat aka Khorasan wheat, Prophet's wheat, King Tut's wheat or Pharaoh grain. It's almost always grown organically.

Triticale

Is a hybrid of wheat (*Triticum*) and rye (*Secale*) first bred in Scottish and Swedish labs during the late 19th century.

Couscous

Almost always granules of durum wheat semolina, and unless it's made traditionally with cracked millet, it does contain gluten. We will use millet, which is gluten-free, in this course and we wanted to mention couscous to clear up any confusion.

Wheat-Free But NOT Gluten-Free

Rye

One of the flours used in black and brown breads like Pumpernickel and Finnish Rye Bread—it's lower in gluten than modern wheat but higher in gliadin, which is another controversial cereal-grain protein like gluten. Gliadin is found in some quantity in most wheat-containing or gluten-containing grains. We won't go into it in this course, but it's known to have powerful addictive qualities (maybe why we crave conventional baked goods so badly?) and some folks are allergic to it as well.



Barley

A wheat-free cereal grain that's low in gluten, with a chewy texture and nutty flavor.

Products Packaged in Facilities That Also Process Wheat

It's important to make sure that any gluten-free ingredients that you buy are certified if you have Celiac or serious gluten sensitivity since cross contamination during processing is possible.

Oats *(it depends)*

See, they shouldn't contain gluten but unfortunately are highly susceptible to crop and manufacturing facility contamination. Make sure to buy from trusted sources that provide certified "gluten-free" oats and flours because it's used in many of the recipes in this course. We provide links to find certified "gluten-free" in your QuickLinks. And don't fret, if you absolutely cannot use oat flour, we provide you with suitable alternatives so you can prepare most recipes in this course.

Corn

Shouldn't contain gluten but it's highly susceptible to manufacturing facility contamination—make sure to buy from trusted sources and that it states "certified gluten-free" on the label.

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Well, bravo baker, you've just finished this lesson. To help the info stick like sesame seeds to a fresh baked roll, go take the lesson recap!

