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MODULE 1 | TRANSCRIPT | LESSON 2

Biological Leavening

When baking breads, to achieve airy lift in the final product, we need to use ingredients that leaven, which simply means to raise and puff up. There are two main ways you can do this, with chemical leavening agents (baking soda and baking powder) or biological leavening agents (friendly microbes like yeast and lactobacilli). Biological leavening agents are what we focus on in this course, specifically active-dry yeast.

Here's the gist of how biological leavening works. See, yeast is a living organism in the same family as mushrooms. That's right, it's a hungry little fungus that's pretty much essential for making risen breads and crusty sandwich loaves. Yeast feeds on the flour and as it eats, it creates the carbon dioxide gas that makes the bread lift—yielding that coveted, soft fluffiness we want when we bite into a sandwich. Yeast also adds a complex flavor to baked goods. You can use active-dry yeast to leaven bread in a few minutes to hours, or you can borrow from ancient traditions and make a sourdough starter culture that you feed over time. But that's another course—we're starting with the easiest method in this one: active-dry yeast.

Also known as “instant yeast” store-bought commercial yeast (which is usually a culture of *Saccharomyces cerevisiae*) gets to work on dough quickly—making bread rise and ready to bake in a matter of minutes to hours. It's the yeast of choice for many home bakers, professional bakers, and food companies because its results are more consistent, and it works quickly compared to sourdough-started breads.

Active-dry yeasted breads are delicious, but because they don't take as long to rise, they usually won't develop the nuance and depth of flavor that comes with starter-leavened breads. But as you may have guessed, we have some tricks and techniques you can use to build big flavor in your active-dry yeasted breads.

As you get your bearings with bread baking, when using a commercial yeast, labels like “granulated,” “active dry,” “instant,” “quick-rise,” or “bread-machine” yeast all work with the recipes in this course.

Biologically leavened breads were likely discovered by accident—as many great things are—when someone mixed together grains and water and left the mixture out in warm air long enough that wild yeasties and bacteria floating on a breeze, and/or already on the grains, nestled in and started to munch on the mix. The by-product of this microscopic feast was carbon dioxide, which made dough rise up and smell delicious. In the fire or oven it went, and from then on, folks were capturing yeasts and bacteria in starters that they could maintain for years and generations even.

With the invention of the microscope, and then the work of microbiologist and chemist Louis Pasteur, came the discovery that yeast was a *living* organism, responsible for alcoholic fermentation and dough leavening. You may be familiar with Pasteur, he patented the process of “pasteurization.” After his work, it became possible to isolate yeast strains, coating more predictable species like *Saccharomyces cerevisiae*, in a water-soluble waxy powder. And so commercial production of baker’s yeast was born. This meant consistency for the bread industry, and a change in the way bread would taste, be produced, and evolve for years to come.

Active-dry yeasted bread making is a great way to get bread on the table fast. It’s also a great way to familiarize yourself with the process of baking bread, especially when new gluten-free ingredients and techniques are also at play. After you build some confidence with this course, you can move on to more involved techniques like sourdough.

A few tips for working with biological leavening:

1. Never add boiling, scalding or hot water to a recipe or starter containing yeast—you’ll kill it. Warm water is best, as cold will actually slow the fermentation process.

Like you, yeast is alive, so to remember what it likes, think about yourself. Would you prefer boiling water, cold water or warm water poured over the inside of your wrist? Thought so: warm. We have resources to help you use ideal temperatures in the course.

2. Store yeast in the fridge for longer shelf life. Freezing, and freezing then thawing then freezing again, can compromise yeast cells and it won't be as powerful, especially with organic yeast.

3. If using an organic store-bought yeast, rising times may have to be doubled, even quadrupled in some cases, which is really just a sign that you're getting a little closer to how nature intended things to be.