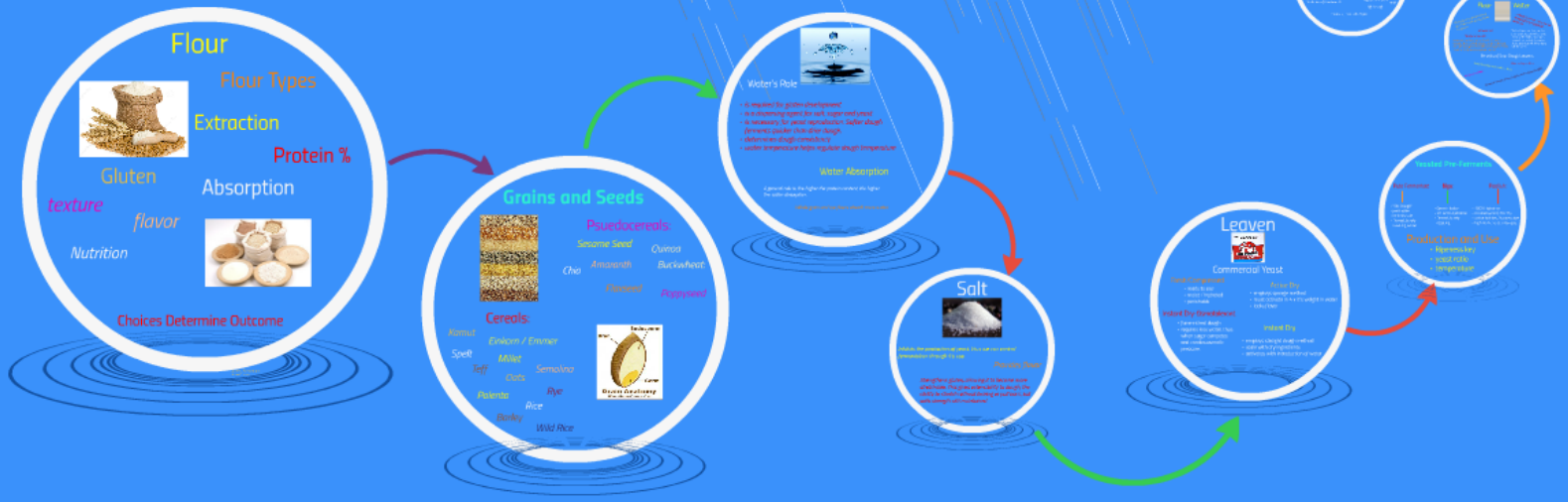
Building a Better Loaf

Understanding the basic elements of bread



Building a Better Loaf

Understanding the basic elements of bread

Flour

Flour Types

Extraction

Protein %

Gluten

Absorption

texture

flavor

Nutrition

Choices Determine Outcome

Grains and Seeds

Psuedocereals:

Sesame Seed

Quinoa

Chia

Amaranth

Buckwheat

Flaxseed

Poppyseed

Cereals:

Kamut

Einkorn / Emmer

Spelt

Millet

Teff

Semolina

Oats

Rye

Polenta

Rice

Barley

Wild Rice

Water's Role

- is required for gluten development
- is a dispersing agent for salt, sugar and yeast
- is necessary for yeast reproduction. Softer dough ferments quicker than drier dough.
- determines dough consistency
- water temperature helps regulate dough temperature

Water Absorption

Salt

Leaven

Commercial Yeast

Active Dry

Instant Dry-Osmotolerant

Instant Dry

Yeasted Pre-Ferments

Production and Use

- Ripeness Key
- yeast rates
- temperature

Natural Leaven

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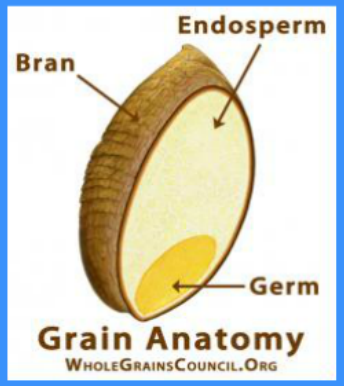

Water's Role

- *is required for gluten development*
- *is a dispersing agent for salt, sugar and yeast*
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- *determines dough consistency*
- *water temperature helps regulate dough temperature*

Water Absorption

A general rule is, the higher the protein content, the higher the water absorption.

Whole grain and rye flours absorb more water.

Salt

Inhibits the production of yeast, thus we can control fermentation through it's use.

Provides flavor

Strengthens gluten, allowing it to become more stretchable. This gives extensibility to dough, the ability to stretch without tearing or pull back, but with strength still maintained.

Leaven

Commercial Yeast

Fresh/Compressed

- ready to use
- moist / hydrated
- perishable

Active Dry

- employs sponge method
- must activate in 4 x it's weight in water
- lacks flavor

Instant Dry-Osmotolerant

- for enriched dough
- requires less water, thus when sugar competes and creates osmotic pressure.

Instant Dry

- employs straight dough method
- scale with dry ingredients
- activates with introduction of water

Yeasted Pre-Ferments

Pate Fermentee:

- "Old Dough"
- perishable
- includes salt
- Domed, barely receding center

Biga:

- Generic Italian
- 50-60% Hyrdration
- Domed, barely receding

Poolish:

- 100% Hydration
- minimal yeast (.1to 1%)
- active bubbles, fissures=ripe
- high mark, no activity=past

Production and Use

- Ripeness key
- yeast ratio
- temperature

Natural Leaven

Flour

Water

Many species and strains of yeast and lactic acid bacteria in starters.

Contrary to beliefs, they are not restricted to geographical locations.

Lactobacillus

Sanfranciscensis

- consumes maltose, a disaccharide of glucose
- excretes the other half, glucose, preferred by yeast
- thus converting half the maltose into glucose for the yeast, actually maintains plenty for itself.

The traditions, practices and the cultures of a region, maintenance routine of the baker, flour types, temperature, is what determines the bacteria that will thrive, along with the yeast.

Benefits of Sour Dough Leavens

Leavening power of a healthy culture

Great eating qualities

increased nutrition

increased storage, decreasing pH=acidity=longer shelf life

Autolyse

''Self-smoothing rest'' period

Hydration?

Beneficial to Lean dough, naturally leavened bread Why?

Bonding of?

w/o mechanical mixing

What is held back?

Y: Would start fermenting, thus acid development, also tightening dough.

S: tightening of the gluten network acts against bonding

Pre-Ferments, Poolish, Liquid Levain?

Mixing Time

Volume?

Oxidation of Carotenoids

High protein flour

acid

tight dough

Creamier, Aromatic, Open