

# BAKING UPDATE

## Pizza Crusts

Practical technology from Lallemand Inc., parent of American Yeast Sales, producers and distributors of Eagle® yeast, fresh and instant.



### Pizza Crust Production

**T**O DISCUSS pizza crust production, we have to approach the subject from two aspects. First, we can divide the pizza industry by the type of pizza desired, whether it be a thin crust pizza or a thick crust, “deep dish,” pizza. Second, we can segregate the industry based on the production process used to make the pizza.

#### PRODUCTION PROCESS

Pizza production on the large scale generally produces frozen pizza dough, frozen parbaked pizza shells, and frozen fully topped

parbaked pizza shells. In the production of shells and topped pizza shells, automated lines are the trend.

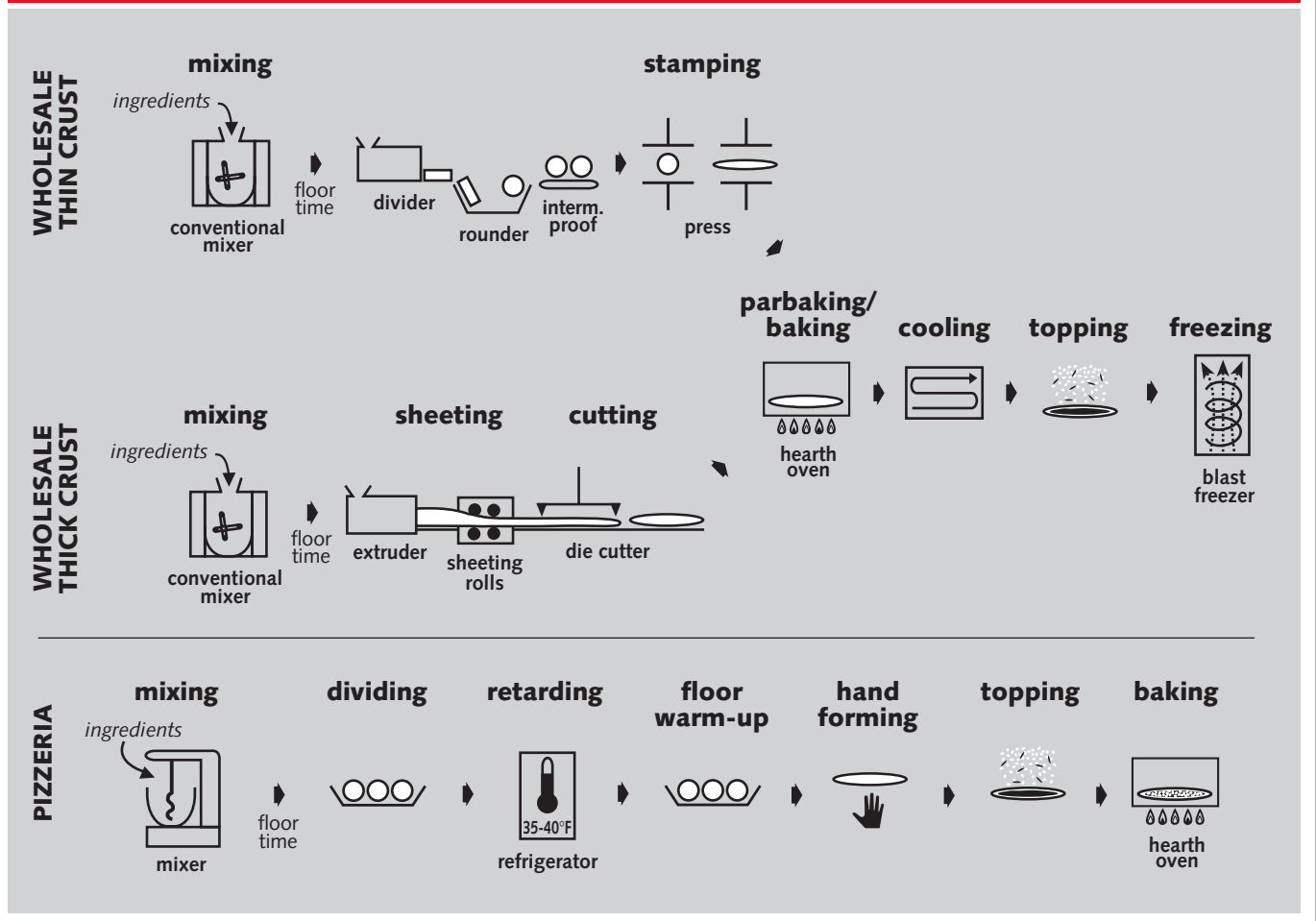
Sheeting is the process normally used by wholesale bakeries to produce thick pizza crust. Mixed dough is sheeted through a series of progressive rollers, and the pizza shells are die-cut to the appropriate shape. Proper handling characteristics are important to the dough to maintain a consistent thickness and texture without tearing. Equally important is the absence of any shrinkage of the pizza dough directly after

cutting or during the baking cycle. Shrinkage results in poor quality due to lack of correct diameter, which in the case of topped and boxed pizza shells promotes the misconception by the consumer that they are being shortchanged by the producer.

Stamping is the process normally used by wholesale bakeries to produce thin pizza crust. In this process, the mixed dough is divided to the desired weight and then given an intermediate proof to relax the dough. The dough balls are transferred to a hot press that stamps the dough to the

*Continued*

### PIZZA CRUST PRODUCTION PROCESSES



## Pizza Crust Production (Continued)

desired thickness to achieve the correct diameter. Again, maximum extensibility without being sticky is critical to achieve the desired size and to prevent shrinkage. The negative side of this process is that it is considerably more labor-intensive than the previous process, and the pizza shells often lack the uniformity of cut shells.

Pizzerias typically use a traditional manual process to produce both thick and

thin crust. Mixed dough is divided to the desired weight, retarded until needed, then hand formed, topped, and baked. The production of integrated dry pizza mixes is a useful format for pizzerias, as the pizza dough quality and consistency is guaranteed by the mix supplier. The pizza mix can be supplied with or without the inclusion of dry yeast.

Variations are common in the wholesale production process. For the production

of topped pizza shells, the crusts are normally par-baked or fully baked then cooled before application of the topping and freezing. Frying is also used as an alternative to baking. When freezing topped pizza dough that hasn't been baked in any way, water migration into the dough can occur and can result in soggy crust. This can be a big problem in thin crust pizza where crispness is desired.

### PIZZA CRUST PRODUCTION CONDITIONS


	YEAST-LEAVENED THIN CRUST PIZZA	CHEMICALLY LEAVENED THIN CRUST PIZZA	YEAST-LEAVENED DEEP DISH PIZZA
<b>Ingredients:</b>			
Flour	100.0	100.0	100.0
Water	55 – 60	55 – 60	60 – 70
Sugar	1 – 2	0 – 2	1 – 5
Salt	1 – 2	1 – 2	1 – 2
Shortening or oil	3 – 14	3 – 14	2 – 5
Instant yeast*	0.5 – 1		0.5 – 1.5
Calcium propionate	0.2 – 0.3	0.2 – 0.3**	0.2 – 0.3
Gluten	1 – 2	1 – 2	
Baking powder		0.5 – 4	
Optimal dough temp. (°F)	90 – 95	75 – 80	80 – 90
Floor time (minutes)	10 – 15	0.0	10 – 20
Baking temperature (°F)	500 – 600	500 – 600	400 – 500

\* For frozen, unbaked pizza dough, fresh yeast at levels from 3 to 5% is preferred.

\*\* For dough with baking powder, sodium propionate is preferred.

### INGREDIENTS

Thin crust pizza recipes call for a strong flour (13 to 14 percent protein) that will give a strong dough after mixing and that can be baked into a pizza crust which will not absorb liquid from the topping and become soggy. Often, gluten is added to increase the protein level. Water absorption is kept low (55 to 60 percent) and shortening levels kept high to avoid sticking during stamping. Shortening levels are also important in this process to maintain finished crust texture. Thin crust pizza can also be made with chemical leavening rather than yeast.

Thick crust pizza recipes call for a lower protein flour (12 to 14 percent) to give a more bread-like texture. Absorption is higher, from 60 up to 70 percent, sweetener levels are higher to support more yeast fermentation, and shortening levels are lower. 

## Pizza Crust Problem Solvers

**A**MERICAN YEAST/LALLEMAND can help you produce quality pizza crusts by optimizing your formula ingredients to yield dough with superb handling and baking qualities.


Automated pizza production places tremendous pressure on the handling qualities of the dough as well as on shrinkage problems. Traditionally, chemical reduction either by cysteine or sodium meta-bisulfite was the answer. Recent trends are moving away from these products, especially sulfites, and have created the need for consumer-friendly ingredients. **Fermaid® P** and **Fermaid® Relax** are two solutions.

**Fermaid® P** is a blend of nonleavening bakers' yeast and enzymes that effectively replaces either cysteine or bisulfite, resulting in a pizza dough that is easy to handle and doesn't shrink. In addition, the crust rises slightly during baking to improve the texture. At 8 ounces per 100 pounds of flour, **Fermaid® P** effectively replaces 60 ppm of L-cysteine or 35 ppm of sodium bisulfite.

**Fermaid® Relax** is a nonleavening bakers' yeast that is a natural source of dough

reducing agents (glutathione). **Fermaid® Relax** is a gentler answer to mellowing the gluten to give the best results. Used at one percent, **Fermaid® Relax** can effectively replace 40 ppm of cysteine, and the label declaration reads simply, "yeast."

**Fermipan® Red Instant Dry Yeast** is the most convenient way to solve all your yeast problems and help give you the perfect pizza every time. **Fermipan®** is unsurpassed in fermentation activity and product consistency. For producers who prefer compressed yeast, **Eagle® Fresh Block Yeast** is available in a unique "cello" wrapper to preserve freshness. A commitment to quality and consistency assures you of a yeast that performs well with each delivery.

**American Yeast/Lallemand Fresh Crumbled Yeast** is available in 55-pound bags for the medium- to large-scale pizza operation. For the very large producer, a **Bulk Liquid Yeast** system can be the answer to both yeast handling and consistency problems. 

### LALLEMAND BAKING UPDATE

*Lallemand Baking Update* is produced by Lallemand Inc. to provide bakers with a source of practical technology for solving problems. If you would like to be on our mailing list to receive future copies, or if you have questions or comments, please contact us at:

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