The perfect product



Bakery

Richemont

THE PERFECT PRODUCT

Flour specifications

Effects of wet gluten content

The amount of wet gluten, i.e. the water-insoluble protein fractions glutenin and gliadin, plays a central role in dough development and in all further processing. It influences dough yield, dough structure, fermentation stability, gas retention capacity and fermentation tolerance. The effects of the wet gluten content are particularly evident in frozen dough pieces.

Ideal wet gluten content (above 30 %)



Pastry colour: golden brown
Shape / Stability: standard
Volume: standard
For the production of butter croissants, which are deep-frozen, the correct wet gluten content is very important. In the case of long leavening and refrigeration technologies, a higher wet gluten content up to approx. 34 % is necessary.



Crumb: standard

Wet gluten content too low



Pastry colour: lighter
Shape / Stability: flatter
Volume: smaller / compact
The gluten is weakened by the freezing and thawing process. Consequently, a low wet gluten content results in a reduced oven rise and a loss of volume. Flours with a low wet gluten content are suitable for direct short leavenings and flat baked goods.



Crumb: more compact porosity
Due to the smaller volume, the porosity becomes fuller. The pastries also become less flaky.

Amylogram

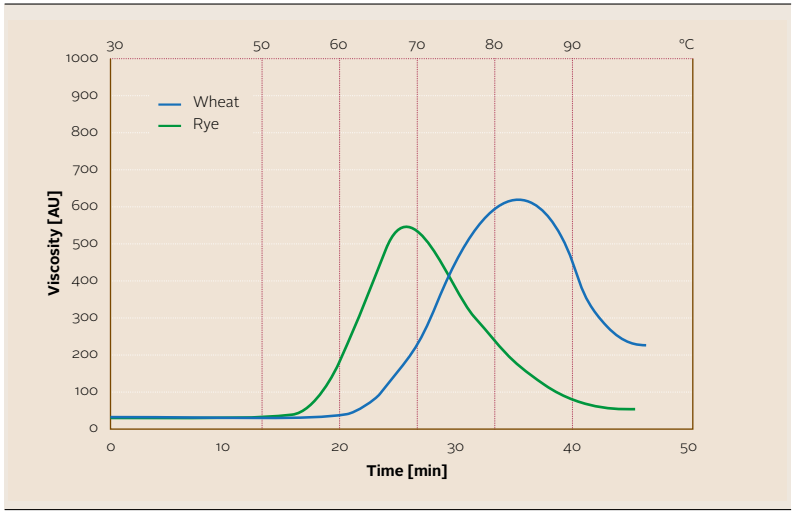
The Brabender® Amylograph® is used to simulate the gelatinization behaviour of the starch of a flour during the baking process. For the measurement, a flour-water suspension is steadily heated and stirred at a constant rotational speed. During heating, the viscosity of the gel that forms is continuously recorded. The force in BU (Brabender® units) or AU (amylo units) that the forming gel exerts against the stirring tool is measured. In addition, the temperature [°C] and the time [min] are recorded. This results in a so-called amylogram or gelatinization curve and from this the gelatinization onset, temperature and maximum can be read. These parameters allow conclusions to be drawn about the α-amylase activity, the proofing behaviour of the doughs and the texture of the crumb structure of the baked goods.

The starch composition and enzymatic activity have a decisive influence on the freshness of the baked goods. Flours with a high starch gelatinization capacity are low in enzymes (high curve pattern) and produce stale baked pastries more quickly. Flours with a low gelatinization capacity, on the other hand, are rich in enzymes (low curve pattern) and generally have an excessively moist crumb structure.

Compared to wheat flours, rye flours have significantly lower temperatures at the gelatinization maximum (see graph). The gelatinization temperature of rye flours is in a similar range to the temperature optimum of the starch-degrading α-amylases. Since starch is particularly vulnerable to enzymatic degradation during gelatinization, the α-amylase activity in rye breads is inhibited by the addition of sourdough (pH reduction).

For further information on amylogram and Amylograph®, please refer to The Apprentices Guide (see Index).

Wheat / Rye







THE PERFECT PRODUCT

Direct short leavening

Half-white bread, direct short	48
Bernese bread	53
St. Gallen bread	54

Bürli bread

FERMENTED DOUGH (5'800 G)	
3'370 g	wheat flour type 720
2'330 g	water
34 g	baker's yeast
66 g	table salt → *mix together*

Kneading: spiral kneader
Mixing time: 3–5 minutes
Kneading time: mixing only
Dough temperature: 23–25°C
Proofing: 60–120 minutes at room temperature, then up to 48 hours in the refrigerator at 5°C

BREAD DOUGH (25'580 G)	
4'650 g	light spelt flour
3'500 g	wheat flour type 720
1'850 g	rye flour type 1100
9'300 g	water/ice
280 g	baker's yeast
5'800 g	fermented dough → *mix together*
200 g	table salt → *add towards the end of the mixing time and knead the dough until malleable*

Kneading: spiral kneader
Mixing time: 10–12 minutes
Kneading time: 8–10 minutes
Dough temperature: 23–25°C
Proofing: 160–180 minutes, after approx. 90 minutes stretching/folding

BAKING PREPARATION (700 G)	
700 g	wheat flour type 720 → *for dusting the boards*

PRODUCTION

1. After proofing at room temperature, weigh out 600 g pieces of dough and place them on dusted boards.
2. Loosely fold the portioned dough after the piece proofing of about 75 minutes at room temperature.
3. Carefully place the dough pieces with the seam side down on the loading device.

BAKING

Deck oven
Baking temperature: approx. 245°C, dropping
Baking time: approx. 50 minutes

Immediately after depositing, steam the dough pieces with the vent closed. After approx. 20 minutes, pull the vent and bake the loaves until crispy.

THE PERFECT BÜRLI BREAD

Pastry colour
dark brown with a lively play of colours

Shape / Stability
oblong-oval, slightly raised

Surface
rustic flour structure

Crust
crispy, light fenestration

Crumb
Porosity: irregular, large
Structure: elastic, moist, shiny



Taste profile
Distinct roasted flavour, nutty, caramel, slight fermentation note

Labeling
For nutritional values, list of ingredients and allergen labeling, see "Labeling Bürli bread" on page 101.

Additional information
General and detailed information on stretching/folding and dough yield can be found in The Apprentices Guide (see Index).




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Influences due to the recipe

WITHOUT PRE-DOUGH



Shape / Stability: slightly flat
Volume: standard
Without pre-dough, the dough contains less acid, which stimulates the gluten and makes it more elastic. The dough therefore has less stability, which makes the breads flatter.

DOUGH TOO FIRM



Shape / Stability: raised
Volume: small, compact
The gluten structure is less extensible due to the slightly firmer dough consistency and intensively stimulated by the additional stretching / folding. As a result, the oven rise is reduced.



Crumb: slightly compact, firm
Taste: not very pronounced
The lack of pre-dough addition causes a weaker flavour formation.



Crumb: rich, compact
Taste: bland
The optimal expansion of carbon dioxide is negatively affected by the tough gluten structure.

Influences due to proofing

WITH STRETCHING / FOLDING



Dough structure: stable, malleable
The gluten structure is stimulated with stretching / folding, which has a positive effect on fermentation and baking stability.



Shape / Stability: standard



Crumb: standard
The porosity is defined by the dough yield, the stretching / folding as well as the processing technique.

WITHOUT STRETCHING / FOLDING



Dough structure: unstable, too stretchy, little elastic
Due to the lack of dough stability, the dough spreads and is rather sticky. This makes further processing, fermentation and baking stability more difficult.



Shape / Stability: flat
Without stretching / folding, the gluten is very malleable due to the high dough yield. The pastry lacks oven rise and stability.



Crumb: coarse, irregular pore structure
Due to the strong extensibility of the gluten structure at the beginning of the baking process, there is no counterpressure. This results in a coarse pore structure.

Fermentation interruption

Fermentation interruption is understood to mean the freezing of doughs or dough pieces. Due to the low temperature, enzymatic processes take place only to a limited extent or not at all. The fermentation of the microorganisms in the dough is interrupted.

DOUGH PIECES FERMENTED

After approx. 80 % of the fermentation phase, the dough pieces are acclimatized in the cold room until they have a core temperature (CT) of approx. 13 °C. They are then deep-frozen.

After the thawing phase, the dough pieces are baked directly.

DOUGH PIECES UNFERMENTED

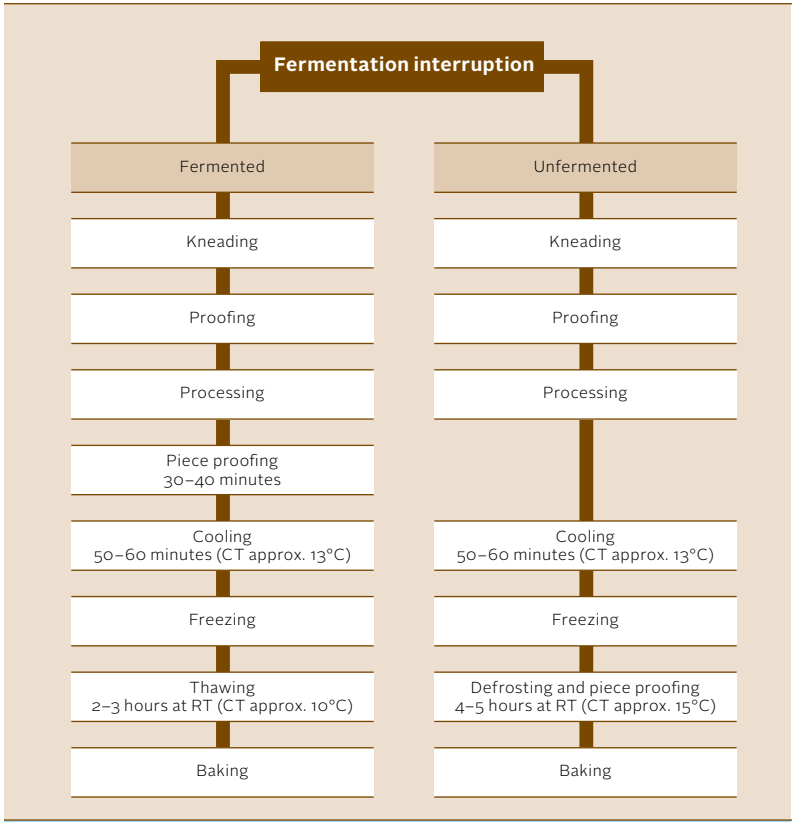
Immediately after processing, the dough pieces are acclimatized in the cold storage room at 5 °C until they have a core temperature (CT) of approx. 13 °C. The dough pieces are then frozen. This is followed by the freezing process.

The dough pieces are thawed and fermented at room temperature (RT) until they reach the optimal volume, and then baked directly.

IMPORTANT NOTE

The gradual cooling process ensures that the dough surface does not become shriveled during the freezing process.

During frozen storage at -18 °C, the dough pieces can dry out very quickly and skin formation can occur. To prevent this from happening, it is recommended to wrap the dough pieces.



Fermentation interruption process (fermented and unfermented) shown in a diagram

Working technique & labeling

ADVANTAGES & DISADVANTAGES OF FERMENTATION INTERRUPTION

Advantages:

- safe production possible for several days
- good fresh keeping
- uniform baking results

Disadvantages:

- high space requirement for storage
- higher energy costs due to low storage temperature
- less aroma and flavour than with fermentation delay

LABELING FARMER'S BREAD FERMENTED, FERMENTATION INTERRUPTION

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Nutritional values per 100 g
energy value 995 kJ/238 kcal; fat 1.8 g; saturated fatty acids 0.6 g; carbohydrates 45 g; sugar 2.5 g; protein 8.7 g; salt 1.3 g

List of ingredients
wheat flour (CH), water, **rye flour** (CH), **whole milk powder** (CH), baker's yeast, iodized table salt, baking agent (**pregelatinized wheat flour**, dried sourdough [**rye flour, wheat flour, malted wheat flour**], **wheat germ**, acerola powder [carrier: maltodextrin], enzymes)

Note
vegetarian



The perfect product

Bakery

Optimum product quality is the goal of every artisanal business. This is not so easy, because a perfect final product is subject to numerous, reciprocal influences.

Which factors determine the optimal product quality and how do I achieve it sustainably and cost-efficiently?

This unique, indispensable work shows you the way to the perfect product and helps to recognize and avoid typical mistakes.

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