

Sourdough Bread – High Protein

Function – build structure, emulsification, water-binding

Protein can play a number of roles in bakery such as foaming, emulsifying, viscosity building, gelling and structure, water-binding, flavour and colour development through Maillard reaction and much more.

The neutral flavour and high functionality of the lupin protein allows for easy incorporation into better-for-your bakery products, such as breads, cookies, muffins, pancakes and tortilla wraps, without negatively affecting texture.

Below is a prototype of a sourdough bread which replaces 10% of the wheat flour with BP80F. The resulting bread has great structure, is soft and chewy with a golden crust and typical bready flavour, and enough protein per serve to enable a high protein claim.

Ingredient	Quantity [g]
Bread making flour (12.5% protein)	405
BP80F	45
Salt	10
Sourdough starter (activated as below)*	120
Water	300

*Sourdough starter: Activate by mixing 25g of the sourdough starter with an additional 50g of water and 50g of wheat flour. Stand at room temperature for ~20 hours to allow it to develop.

Method

Bread making:

- Combine the flour, BP80F and salt, mixing well or using a sieve to ensure they are evenly distributed. Set aside.
- In a large bowl add the starter to the water and mix well.
- Add the flour/protein mix and stir until well combined.
- Rest for 30 minutes @ room temperature
- Hand knead the dough using the pulling and folding technique. Pull the dough from the edge of the dough mixture then fold it toward the centre.
- Rest for 30 minutes and repeat the process two times again.
- After the third hand kneading step, let it rest for 3.5 hours (5 hours total kneading and resting time – rest in warm place, ie bread proofer @ 27°C).



Bread shaping:

- Shape the dough by starting to pull and fold the dough from the edge to the centre (to release it from the mixing bowl).
- Transfer dough ball to bench lightly dusted with flour.
- Shape the dough into a ball by using the pulling and folding to the centre technique, then flip the ball upside down, with the seamless side facing the top. (Figure 1 A)
- Cover the dough with a towel and let it rest for 30 minutes.
- Flip the dough ball upside down and gently pull into a square shape (Figure 1 B).
- Fold the left and right sides to the middle of the square to make a roll shape (Figure 1 C&D).
- Then start to fold the roll from one side to the other (Figure 1 E). Put the roll seam side down, then stretch the roll flap from both sides to cover the bread roll dough layers from both sides.
- Transfer the dough roll to a plastic container lined with baking paper (seam side down) and let it rest overnight in the fridge (Figure 1 E&F).

Bread Baking:

- Pre-heat a heavy cast iron pot (Dutch oven) in the oven at 250°C for 30 minutes.
- Score the bread with a sharp kitchen knife or bread lame to make nice bread ear.
- Place the bread inside the hot Dutch oven, using the baking paper as a carrier to support the bread.
- Put the pot back into the oven and bake for 20 minutes with the lid on and another 20 minutes lid off (40 minutes total baking time).

Figure 1 bread kneading folding illustration



With BP80F

NUTRITION INFORMATION		
Servings per package: 20		
Serving size: 40 g		
	Average Quantity per Serving	Average Quantity per 100 g
Energy	421 kJ	1050 kJ
Protein	4.5 g	11.2 g
Fat, total	0.7 g	1.7 g
- saturated	0 g	0.1 g
Carbohydrate	20 g	49.9 g
- sugars	0.7 g	1.7 g
Sodium	213 mg	532 mg

Control (No BP80F)

NUTRITION INFORMATION		
Servings per package: 20		
Serving size: 40 g		
	Average Quantity per Serving	Average Quantity per 100 g
Energy	117 kJ	291 kJ
Protein	0.7 g	1.8 g
Fat, total	0.1 g	0.2 g
- saturated	0 g	0 g
Carbohydrate	6.6 g	16.4 g
- sugars	0.7 g	1.6 g
Sodium	190 mg	475 mg