

BAKING PROSPHORA



Prayers at the Preparation of Prosphora

Glory to You, Christ our God and our hope, Glory to You.

Heavenly King, Comforter, the Spirit of truth, everywhere present and filling all things, Treasury of blessings and Giver of Life, come and dwell in us; cleanse us of every stain and save our souls, o gracious One. Amen.

Holy God, Holy Mighty, Holy Immortal, have mercy on us. (3)

Glory to the Father, and the Son, and the Holy Spirit, now and always, and forever and ever. Amen.

All Holy Trinity have mercy on us. Lord be gracious to us in our sins. Master, forgive our transgressions. Holy One, consider our weaknesses and heal them, for Your Name's sake.

Lord have mercy. Lord have mercy. Lord have mercy.

Glory to the Father, and the Son, and the Holy Spirit, now and always, and forever and ever. Amen.

Our Father Who art in heaven, Hallowed be Thy Name, Thy Kingdom come, Thy will be done, on earth as it is in Heaven. Give us this day our daily bread. And forgive us our trespasses as we forgive those who trespass against us. And lead us not into temptation, but deliver us from the evil one.

Lord, I thank You for this holy hour, that You have made me worthy to prepare the most pure gifts of Your love with my sinful hands.

Please send down Your All Holy Spirit Who blesses all the mysteria of the Church, to also bless these gifts so that they may become good and worthy for Your Holy Sacrifice.

And please accept them as You accepted the sacrifice of Abel, the glorification of the shepherds, the gifts of the Wisemen, the tears of Peter, and the repentance of the thief.

And may You make me worthy to offer to You always these gifts.

Amen.

“As any frequent prosphora baker has discovered, batches almost never turn out the same. That inconsistency alone should serve to keep the prosphora baker in constant prayer during the baking!”

- Divine Ascent Magazine, August 2000 - as quoted in “Prosphora Baking” at www.Illumination-Learning.com

RECIPE – for one 10” (25 cm) prosphoro:

5 c (640 g) flour
1 tsp (3.6 g) active dry yeast OR $\frac{3}{4}$ tsp (2.7 g) instant yeast
1-5/8 c (385 ml) water
1 tsp (6 g) salt

This is a 60% hydration recipe (see “Resources” – “Baker’s Percentages” for more information on hydration levels) and is for hand kneading.

Measure a square of parchment paper to cover both bottom and sides of your pan and press it into place. You can trim off any excess later, once your dough is in the pan.

Weigh or measure your flour into a large bowl (use the same method each time you bake).

Heat your water to the correct temperature for whichever type of yeast you are using. Use a thermometer for accuracy.

If you are using active dry yeast, put it to “proof” at this time, using a teaspoon of your measured flour, and about $\frac{1}{4}$ c of the measured warm water. Stir to mix it well, and set it aside for 10 minutes.

Add the salt to the flour and mix well. If you are using instant yeast, add it and mix well.

Add the (remaining) water to the flour mixture along with the “proofed” active dry yeast, if that is what you are using. Stir well until it comes together into a rough dough. Push down with your fists and hands to get the final amount of flour incorporated into the mass. You must get **all** the flour mixed in at this point. If your mix is too dry, add a bit of water; if it is too wet, add a small amount of flour. You should end up with a firm dough that is neither sticky nor too dry feeling. Cover it with plastic wrap and let it rest for 20 – 30 minutes. Do not use your original mixing bowl, or you will get dried bits of flour in your dough.

Knead the dough for about 5 minutes then cover it and let it rest for about 7 minutes.

Knead the dough again for about 5 minutes, and let it rest, covered, for about 7 minutes.

To shape the dough, knead, flatten, fold and roll it around to get a smooth finish on one side and to remove as many air bubbles as possible. Pull the edges of the dough into the centre to make a ball with a smooth, taut surface. With the dough top side down on your work surface, flatten it out to about 9 $\frac{1}{2}$ ” in diameter. As you do this, prick out any bubbles you see on both sides of the dough. Be sure it is of even thickness. *Note: to use a rolling pin for this process see https://youtu.be/v5YDC3V_zLU?t=404 (“rolling and folding” and “shaping and smoothing” - from www.prosphoro.com - the “yeast-risen” video).*

Turn your dough over and smooth the top. Place the dough in your pan and check to see that there is about $\frac{1}{4}$ ” (0.6 cm) space between the dough and the pan all around. Carefully prick out any air bubbles. Cover the dough and let it rest for 4 - 7 minutes, depending on how active your yeast is (less time for active yeast) and how warm your room is (less time for a warm room).

Centre your seal in the middle of the pan and press firmly all around (if your dough seems a bit sticky, dust your seal with a bit of flour and shake off the excess). Keep turning your pan and pressing, using both hands and a “vibrating” motion to get the dough into the cuts in the seal. Press on the top and all around the sides of the seal to be sure to get an even impression. You should press enough that the top edge of the large round part of your seal is about even with the dough around it (about 3/8” or 1 cm deep). **Be careful not to press too much, or you could end up with a bubble under the seal.**

Carefully remove the seal – not all at once, but bit by bit as you turn your pan around. It should come off cleanly without sticking or lifting any of the dough. If your impression is too faint, or the dough stuck, re-knead the dough and try again. **You should never try to re-seal over an existing attempt – always re-knead if there is a problem!**

The impression must now be pierced to ensure no bubbles form under the seal. Take a round toothpick or a fine skewer and prick holes at the four corners of the centre of the seal, as shown below¹. Prick all the way through to the bottom. You can also prick holes around the outside edge of the loaf, between the seal and the edge of the pan, if you wish. You can make a complete circle of holes, or crosses, or any other pattern.

Cover your loaf with parchment paper and a towel and allow it to rise until *double* in volume. Check after 30 – 40 minutes to see where it’s at, so you can preheat your oven ahead of time.

Bake at 370° F (188°C) for 50 – 55 minutes (conventional oven – not fan). Your loaf should sound hollow when it’s done, and it should be evenly, lightly browned.

Immediately put the loaf on a rack, cover it with a towel and let it cool in a draft-free place. When the loaf is **completely cool**, put it in a plastic bag. This will soften the crust and make it easier to cut.

The above method should result in a dough that has adequate gluten development; however, it may not pass the “window pane” test – i.e. after letting the dough rest for a couple minutes, take a small amount and see if you can stretch it thin without ripping it. If it rips easily, it means you need to knead a few more minutes. It is difficult to get to the “window pane” stage when hand kneading. As long as your dough stretches quite well without immediately ripping and you can stretch it enough to get a smooth, taut surface, you will be able to make a decent loaf.

¹Piercing points on the seal (black/white dots on seal below. Additional, optional piercing points are indicated by solid black dots):



INGREDIENTS

Only four ingredients are allowed for prosphora – flour, yeast, water and salt – nothing else!

Flour – a high protein wheat flour is needed for breadmaking. The proteins gliadin and glutenin combine to form gluten when mixed with water and kneaded. Gluten is the substance which gives bread dough its elasticity and ability to hold the gases produced by the yeast in order to make the bread rise. The following flours are typically available (protein varies by company):

Bread flour (or “Strong” flour) – made from hard wheat and has the highest protein content (12 – 15%), so is ideal for making bread.

All-Purpose flour – made from hard wheat or a blend of hard and soft wheat and has slightly less protein than bread flour (10 – 12%), but still enough to make a good loaf of bread.

Cake/Pastry flour – made from soft wheat and has a much lower protein content than hard wheat flour (7 – 10%). It is used for making cakes and pastries and other delicate mixes and is *not* good for making bread.

Note: If the protein content is not indicated, you can calculate it using the nutrition information – e.g. for a serving size of 30g there is 4g of protein, so the protein percent is $4 \div 30 = 0.133 \times 100 = 13.3\%$. Nutrition labels are rounded, so your calculation will be a “ballpark figure”.

When looking for a bread flour, consider the ingredients – most regular all-purpose flours are bromated or chlorinated or treated with some other chemicals to make them white. Thus, an *unbleached* product is preferred.

Conventionally farmed wheat is treated with multiple chemicals throughout the growing season, thus, for purity, an organic flour is preferred. If you go this route, try to find a larger, well-known company, as some of the products from smaller companies can be quite variable in protein content, depending on the variety of wheat their suppliers grow, the conditions in the year, and so on. Larger milling companies generally test their products to ensure consistency.

Measuring flour – to ensure consistency in your baking endeavours, it is best to *weigh* your flour. If you do not have a kitchen scale, then you can sift the flour or alternatively stir it, spoon it into a dry measuring cup and level with a straight edge. Just scooping your flour out of the bag can give you quite variable results, as the amount you get depends on how you scoop, how packed the flour is, how it was stored, and so on.

Yeast – the following are generally available:

Active Dry Yeast – this is a granular yeast that you need to “proof” prior to using by activating it with warm water (100-110° F or 38-43° C) and a bit of flour. It is added along with the water to your flour and salt mixture.

Instant Yeast – this is also a granular yeast but with much smaller granules than active dry yeast. It can be added directly to your flour and salt mixture. You should use fairly warm water for mixing (120-130° F or 49-54° C). If using this kind of yeast, you only need to use 75% of the amount indicated for active dry yeast.

Compressed or Fresh Yeast – this is a pasty-type of yeast that is available in blocks. It needs to be dissolved in twice its weight of warm water at 70-90° F (21-32° C). It is added along with the water to your flour and salt mixture. You need to use twice the amount of

fresh yeast as active dry yeast. This type of yeast does not keep for very long, so unless you do a LOT of bread baking, it's best left for the professional bakers!

Sourdough starter – this is a yeast mixture made up of a number of wild strains of yeast, along with some bacteria (mostly lactobacillus). Sourdough starter requires special handling, and takes a lot longer to rise than commercial yeasts. It makes a great bread, but you need to have some experience to use it well.

There is no “best” kind of yeast for making prosphora – it depends on your personal preference and what works best for you.

Water – binds all the other ingredients together and helps the gluten form. Filtered, bottled or tap water will work; however, if your tap water has a strong chlorine smell, it would be best to use filtered or bottled water.

Salt – helps regulate the yeast action, conditions the gluten, and adds flavour. Any regular fine (not coarse) table/cooking salt will work, but sea salt or Himalayan salt tend to be more pure than salt that has been artificially iodized and had anti-caking agents added.

Baking prosphora is a special endeavour that calls for the best, most pure ingredients that we can obtain.

TOOLS AND EQUIPMENT:

Prosphora seal – a deeply cut wooden seal is best. A 6.5” - 7.5” (17 – 19 cm) seal is the best size for a 10” pan.

10” aluminum pan – heavier weight pan is best, as the heat is distributed more evenly. As well, it should be light-coloured, not a dark anodized one, as the crust will brown too much in a dark pan.

Parchment paper – pans should never be oiled, sprayed with non-stick sprays or coated with beeswax to prevent sticking. This causes problems in the chalice. A light coating of flour does not help, as it becomes “glue” when the moisture from the dough mixes with it, and the loaf will stick badly. The best option is to line the pan with parchment paper.

Oven – check the temperature of your oven with an oven thermometer! If your oven gets hotter than what the display indicates, you run the risk of having too much “oven spring” and having a large bubble form under the seal. You may also over-bake your prosphoro if you are not watching carefully. If your oven is cooler than the display indicates, you may end up with an under-baked prosphoro that collapses when you take it out.

Other general baking supplies – large bowl, mixing spoons, measuring cups and spoons, sifter (if not weighing your flour), skewer or round toothpicks, cooling rack, towel, plastic wrap, food thermometer, food scale, scraper, pastry brush, wooden cutting board, rolling pin, heavy-duty mixer and dough hook if you want to knead by machine.

You do not need *all* the above supplies – it depends on your preferred method of working.

Icon(s), candle, incense – these are a reminder of the holy work you are doing, and help you to keep a prayerful attitude.

TROUBLESHOOTING

Problem	Reason Why	What to Do
Bread is too small.	-Oven was too hot or dough was too cold.	-Check your oven temperature. Dough needs to rise at "room temperature" (75-85° F or 24-29° C).
Bread has a coarse texture and is crumbly.	-Bread was allowed to rise too long. -Too much kneading (by machine).	-Let dough rise only until double in volume. -Knead until dough is smooth and elastic only.
Bread does not rise in the oven.	-The rising period was too long. -The oven was too hot and a crust formed on the bread before it could rise.	-Dough should rise only until double in volume. -Check your oven temperature to be sure it is correct.
Dough does not rise or rises too slowly.	-The yeast is not active. -The dough is cold and/or the ingredients used were too cold.	-Yeast is past expiry date or active dry yeast was killed by too hot water when "proofing" or is slowed down by too cold water when "proofing". -Dough needs to rise in a warm place (75-85° F or 24-29° C) away from drafts but not overheated. All ingredients need to be at room temperature.
Folds and creases on top/sides of unbaked loaf.	-Dough was not rested after kneading and before shaping. -Surface was not smooth and taut when shaped.	-A 5-7 minute rest will make dough easier to handle and shape. -Bring in the edges to the middle to get a smooth, even round shape or try a rolling pin.
Loaf is too big or poorly shaped.	-Bread was allowed to rise too long in the pan, or the pan was too small for the amount of dough. -Oven temperature too low or oven heats unevenly. -Dough was not rested after kneading and before shaping. -Shaping technique not adequate. -Too much yeast was used.	-The dough should only rise until double in volume. -Check your oven temperature. -A 5-7 minute rest will make dough easier to handle and shape. -Bring the edges in to the centre to make a round, smooth ball, then press it out to size, or try using a rolling pin. -Try using a smaller amount of yeast.
Texture of the bread is close and the bread is heavy.	-The bread did not rise enough prior to baking or it rose too much and collapsed.	-The dough should rise until double in volume.
Top of the baked bread wrinkles and cracks.	-The bread was cooled in a draft.	-When the bread has baked, turn out onto a wire rack. Put a towel on top and cool away from drafts.
Bread loses its shape while cooling.	-Not baked long enough and/or oven temperature too low.	-The bread should sound hollow when tapped on the bottom. Bread should be nicely browned.
Bread is cracked on the side or top after baking (some cracking will always occur on the side, but this refers to excessive cracking).	-Too much flour was used. -Oven temperature too hot. -Bread was not covered while rising.	-Dough should feel smooth and springy but not crumbly after kneading. Increase the amount of water or use less flour. -Check oven temperature. -Dough will form a hard crust if not covered when rising. When yeast gets active in the oven, the dough will crack. Place parchment paper and a towel over the bread, or use a shower cap that does not touch the loaf.

Problem	Reason Why	What to Do
Seal has large air bubble underneath.	-Seal was pressed too hard on the dough. -Seal was not pierced. -Oven was too hot.	-Seal should be pressed down only about 3/8" (1 cm), or until the top of the large bottom part of the seal is even with the dough. -Piercing the seal at the four corners of the "Lamb" (centre part) will help let out gases that could cause a bubble. -Hot oven causes too much "oven spring". Check oven temperature.
Bread has a hard crust.	-Loaf was not put in a plastic bag after cooling.	-Once bread has <u>completely cooled</u> , put it in a plastic bag and seal it shut. If you put the bread in a bag when it is still slightly warm, it can turn mushy and mold easily.
My kneaded dough does not pass the "window pane" test that indicates it has been kneaded enough.*	-You did not let the dough rest prior to testing. -Dough has not been kneaded enough. -Flour was added during the kneading process. -Dough is too cold. -Dough is too dry or too wet. -There is not enough gluten in your flour. -Your flour is of low quality and has many damaged protein strands.	-Wait a minute or two after kneading to do the test. -Continue kneading and check in a couple minutes. You may need to change your kneading technique to make it more vigorous. It is difficult to get to the windowpane stage with hand kneading. It can be done, but you may need to try a different kneading technique. -The gluten in the newly added flour will not be as developed as the rest of the dough. Check your hydration level <i>before</i> you start kneading. -Cold temperature inhibits gluten formation – begin with ingredients at room temperature and turn the heat up if it's cold in the room! -Check hydration level <i>before</i> beginning kneading. ALL the flour must be moistened, but it shouldn't be sticky. -A flour with a low protein percentage will never reach the "windowpane" stage. Look for a higher protein flour. -Try different flours to find one that works.

The above are compiled from the Robin Hood cookbook, the www.prosphora.org site and the www.busbybakery.com site.

*If your dough never makes it to the "windowpane" stage (i.e. 100% gluten development), you can still have a good loaf, as long as the gluten has developed enough to give a stretchy dough, and you can obtain a smooth, taut top on your dough.

RESOURCES

General baking information –

Metric conversion: these are *liquid* measurements, and the closest approximations, as it is not practical to try to get an exact amount. Yeast and salt, although dry ingredients, can be measured by teaspoon, as the quantities required are so small that most home scales are not accurate enough to weigh them.

1 tsp = 5 ml
1 tbsp = 15 ml
1 c = 237 ml

Water – liquid measure – 1 ml = 1g
1 c = 237 ml or 237 g

Flour – dry measure – 1 c = 128 g (from *The Bread Baker's Apprentice* by Peter Reinhart)

Yeast – 1 tsp = 3.6 g (per Fleischmann's)
- use 25% *more* active dry yeast than instant yeast (i.e. multiply the instant yeast amount by 1.25 to get the active dry amount)
- use 25% *less* instant yeast than active dry yeast (i.e. multiply the active dry yeast measurement by .75 to get the instant yeast amount)
- optimal temperature for “proofing” active dry yeast is 100-110° F (38-43° C).
- optimal water temperature when using instant yeast is 120-130° F (49-54° C).
- it's best to use a thermometer when measuring water temperature – you could kill your yeast if the water is too hot, or slow it's action if it's too cold.

Salt – 1 tsp = 6 g
as a general rule, use 1 g of salt for every 100 g of flour (1/5 tsp per 1 c of flour)

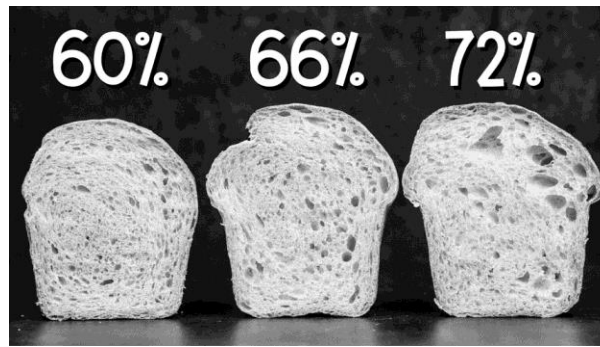
Oven temperature:

275 – 325° F (135 – 163° C) – low oven
325 – 375° F (163 – 190° C) – moderate oven
375 – 400° F (190 – 204° C) – moderately hot oven
400 – 450° F (204 – 232° C) – hot oven
450 – 500° F (232 – 260° C) – very hot oven

Baker's Percentages:

- **Flour is always 100%** - all other ingredients are expressed as a percentage of the *weight of the flour* – therefore, the whole recipe adds up to more than 100%. It is easiest to weigh your flour in grams on a food scale for this method.
- Water is stated as a percentage of the flour amount, and gives you the “hydration” level. You can either measure the water in ml, or weigh it, as 1 ml = 1 g. For example 385 ml (g) of water divided by 640 g of flour x 100 = 60% hydration level.

Below are examples of different hydration levels:



note the larger holes with a “wetter” dough

- Salt is generally 1% of the flour weight – e.g. if using 640 g of flour, you need to use $640 \times .01 = 6.4$ g of salt (slightly over 1 tsp). For fractional grams of salt, round down to the full gram figure – in this case – 6 g of salt (1 tsp) for 640 g of flour. It’s better to have a bit less than too much salt.
- Yeast – in our recipe, the active dry yeast is 0.6% of the weight of the flour (1 tsp yeast is 3.6 g divided by 640 g = $.0056 \times 100 = 0.56\%$ - rounded to 0.6%). The instant yeast amount is 0.4% of the weight of the flour (2.7 g divided by 640 g = $.0042 \times 100 = 0.4\%$).

Here’s an example of using baker’s percentages:

You want to use 6 c of flour, and you want a 60% hydration recipe. What amount of each ingredient is used (yeast is considered to be active dry yeast)?

Item	Percent	Amount to use
Flour	100%	6 c x 128 g = 768 g
Water	60%	$768 \text{ g} \times .6 = 461 \text{ g (ml)}$ or $461 \text{ g} \div 237 \text{ g} = 1.9 \text{ c}$
Salt	1%	$768 \text{ g} \times .01 = 7.68 \text{ g}$ or $7.68 \text{ g} \div 6 \text{ g} = 1 \frac{1}{4} \text{ tsp}$
Yeast	0.6%	$768 \text{ g} \times .006 = 4.6 \text{ g}$ or $4.6 \text{ g} \div 3.6 \text{ g} = 1 \frac{1}{4} \text{ tsp}^*$

*Note: since the yeast amount above is for active dry yeast, a conversion for instant yeast is required. It would be $1 \frac{1}{4} \text{ tsp} \times .75 = .9 \text{ tsp}$ – or use the percentage calculation – $768 \text{ g} \times .004 = 3.07 \text{ g}$, or approximately .9 tsp (3.07 g divided by 3.6 g per teaspoon = 0.85 tsp, rounded to .9).

If you prefer working in cups and teaspoons, use the conversion values given at the beginning of this section to convert the amounts.

How does this method help you? It takes the guess work out of making small or large changes to a favourite recipe, as the percentages always remain the same for a particular recipe. You can also easily revise a recipe (e.g. a lower or higher hydration level) and calculate what the new ingredient amounts should be, without a lot of experimentation.

Internet resources –

Prosphora-related sites:

<https://www.goarch.org/> (search for “Office of Oblation”) – contains an explanation of the Office of Oblation (Proskomide), what each part of the bread seal means, how the prosphora are used in the service, and a recipe (the basis of the *recipe* presented here). This recipe suggests leaving the seal on the bread while it rises before baking. This can make a very good impression, but it is not assured. You have to be *very careful* removing the seal and doing the piercing. If you decide to try this, dust your seal with rice flour, as it does not stick. You can use a pastry brush after the loaf is baked to dust off any excess rice flour.

<https://illumination-learning.com/main/>
<https://illumination-learning.com/main/wp-content/uploads/2018/01/Prosphoro-Baking-Class.pdf>
– this site has a workbook for prosphora baking, as well as instructions for artos and various other traditional church items. The method used for the dough in this recipe uses “bulk fermentation” – which means you have two rising periods. This is a common method, but I find it difficult to get all the air bubbles out adequately after the bulk fermentation period – use a rolling pin to help in this, if you decide to try this method.

www.prosphoro.com
<https://www.prosphoro.com/post/make-easy-yeast-risen-prosphora> – Manuel Petavakis, a Greek gentleman from Australia, explains the work of Konstantinos Tsaparas and Mrs. Eugenia Psarou from Greece, for English speakers. Please note the recipe used here is *very low* hydration (a very dry dough) – drier than what we use; however, the method is interesting and is the basis of the *method* used in the recipe presented here. Note the use of the rolling pin and how it helps to knead the dough as well as remove air bubbles!

www.prosphora.org – this site has a number of prosphora recipes from different Orthodox traditions. The recipes generally use “bulk fermentation”.

General baking sites:

<https://www.kingarthurbaking.com/learn/bread>

<https://www.busbysbakery.com/>
<https://www.busbysbakery.com/hand-knead-dough-techniques/>

<https://www.fleischmannsyeast.com/>

<https://www.bakingkneads.com/deciphering-the-science-of-flour-types/>

Prosphora seal sites (for your information only – I have not dealt with these organizations – do your own research if deciding to buy from them):

<https://www.monastiriaka.gr/en/holy-bread-prosphora-seals>

<https://mountathoslegacy.com/en/product-category/ecclesiastical-items/tender-seals/>

https://nioras.com/prosphora-seals-c-7000_7650.html

NOTES

