

Recipes for the food that was served during the first research experiment

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Description of the three dishes

Dish 1:

Parsnip purée with kapucijner (Dutch gray pea) miso, served on a piece of spelt and barley porridge sourdough bread and garnished with toasted linseeds.

Dish 2:

Kapucijner and wild garlic hummus, served on a piece of Danish-style sourdough bread with spelt, toasted barley berries, and linseeds, and garnished with a parsnip chip.

Dish 3:

Parsnip spelt cake with kapucijner miso and linseeds.

Recipe for Dish 1

• Parsnip purée with kapucijner miso

Ingredients

Parsnips- 2 small, peeled and cut into 2 cm cubes

Kapucijner miso*- 1 tsp, or more to taste

Rapeseed oil- 1-2 tsp

Apple cider vinegar- 1-2 tsp

Salt and freshly ground black pepper to taste

Method

Steam the parsnips for 8-10 minutes. Let cool for a minute before tipping them into a food processor together with a teaspoon of rapeseed oil and apple cider vinegar each, the kapucijner miso, and a little salt and pepper. Process for a couple of minutes. Taste and adjust the seasonings. It might need a touch more oil and vinegar. Pass through a mouli and add more salt and pepper to taste.

*Kapucijner miso¹

Ingredients

Dried kapucijners- 150g

Barley koji**- 150g

Fine sea salt- 20g

Method

¹ A note on fermentation: before you ferment anything, make sure that you are familiar with the dangers it may entail, so that you take all the necessary steps to ensure a safe end product. Basic knowledge on dangerous types of bacteria, such as strains of *Salmonellae*, or *C. botulinum*, and what types of environment they thrive in is indispensable (good basic sources on this are Redzepi & Zilber, 2018; Shih et al., 2020; Shockey & Shockey, 2019).

Soak the kapucijners overnight in plenty of cold water. The next morning, strain and rinse them, put them in a pot, cover with three times their volume of water, and bring to the boil, then reduce the heat to a simmer. Skim any scum off the surface and leave to simmer. Begin checking for doneness around 30 minutes later, though they might take as long as 1 hour. The kapucijners should still be firm, but you should be able to crush them easily between your index and thumb. Once they are done, strain them through a colander, taking care that they are as dry as possible, and reserve 100g of the cooking liquid. Dissolve 5g of salt into this cooking liquid.

Leave to cool and dry by spreading them on a lined baking sheet. Once they are fully dried, put them in a sanitised food processor, together with the koji and the remaining 15g of salt. Process into a paste and check the consistency. If you take a fistful of the paste (with very clean hands, or nitrile gloves) and press it, it should be possible to form a firm, but not crumbly, ball with it. If it is too dry, add some of the reserved cooking liquid, a little bit at a time.

When the miso has the right consistency, transfer it into a wide-mouth jar, taking care to avoid forming any air gaps by adding just a teaspoon at a time and pressing it down firmly. Once you are finished, smooth the top with the back of a sanitised spoon, and sprinkle generously with fine sea salt. Cut a circle of parchment paper the size of the top of the jar and lay it on top of the salt, then add something to weigh it down (like a sanitised ramekin) and cover the jar with a lid, leaving it slightly ajar.

Ferment for one and a half months at room temperature. When harvesting, remove the lid, ramekin and parchment paper, pour off and reserve any liquid that the miso might have produced (tamari), and scrape off the upper layer, which will be very salty. You can process it again if you want a very smoother paste or leave it as it is.

****Barley koji**

Ingredients

Pearled barley- 500g

Aspergillus oryzae (koji) spores, preferably from some kind of barley-loving strain, dispersed in toasted flour or some kind of starch

Method

Preheat your oven to 180°C. Put the barley in a cast iron Dutch oven and cover with cold water until, when laying your hand flat on the barley, the water is just above your knuckles. Bring to a boil over high heat, and immediately as it boils, cover the casserole with a tight-fitting lid and put it into the oven. Cook for 90 minutes, then remove from the oven and leave it to rest, covered, for at least an hour².

After the resting period, break apart any clumps of barley that may have formed. Once it has reached a temperature under 37°C, inoculate the barley with the dispersed koji spores by passing a

² This method of cooking grain for koji, as well as most other koji-related recipes in this text are inspired by the following book: Shih, R., Umansky, J., & Katz, S. E. (2020). *Koji alchemy: rediscovering the magic of mold-based fermentation*. Chelsea Green Publishing, as well as Shockey, K., & Shockey, C. (2019). *Miso, tempeh, natto, & other tasty ferments: a step-by-step guide to fermenting grains and beans*. Storey Publishing.

fine mesh sugar shaker filled with them over the barley. Mix everything with a sanitised spoon and give it another pass with the spores. Mix again³.

Fill several (or one large) flat perforated food grade plastic containers with the inoculated barley, cover with their (perforated) lids, and put in a fermentation station at 30°C. After 24h, begin monitoring the temperature of the koji, because it will start producing its own heat. Lower the temperature of your fermentation station as needed so that the koji stays between 28-35°C.

Between hours 44 and 48 of inoculation, the koji should be ready. It should be covered in white mould (if you have an albino strain), with perhaps the odd bit of yellow spores here and there (but not too many). It should smell intensely fruity and delicious.

Put in the fridge to cool down and use within the next 48h, or freeze for up to one month.

• **Spelt and barley sourdough bread with spelt porridge⁴**

Ingredients

Whole-grain spelt flour- 200g

White spelt flour- 200g, plus a bit more to sprinkle on the dough before shaping

Whole-grain barley flour- 100g

Sea salt- 12g

Water at 29°C- 325g

Cold water- 25g

Spelt porridge- 200g

Levain- 76g

Rice or semolina flour to sprinkle on the banneton- a generous handful

For the porridge:

Spelt flakes- 100g

Water- 200g

For the levain:

Mature sourdough starter- 12g

Water at 29°C- 32g

Whole-grain spelt flour- 16g

³ The idea of using a fine mesh sugar shaker to disperse koji spores is taken from the following book: Redzepi, R., & Zilber, D. (2018). *The Noma guide to fermentation*. Artisan.

⁴ An in-depth description of how to bake sourdough bread would exceed the scope of this research. The reader interested in acquiring a more thorough understanding of the basics of baking naturally leavened breads (including instructions on what is and how to make a sourdough starter, and some techniques for mixing and shaping the dough) is recommended to consult the following books: Robertson, C. (2013a). *Tartine book no. 3: modern, ancient, classic, whole*. Chronicle Books, and Robertson, C. (2013b). *Tartine Bread*. Chronicle Books LLC.

White spelt flour- 16g

Method

First make the levain: mix the water and sourdough starter with a rubber spatula in a wide-mouth jar. Once dissolved, add the flours and stir until there are no clumps. Cover with a slightly ajar lid and leave to ferment in a warm environment for around 6 hours or until very bubbly and risen to about double its size, or perhaps a little less. Do this around 1 or 2 pm so you can start mixing the dough at around 8 pm.

Make the porridge: put the spelt flakes and water in a nonstick pan and bring to the boil over high heat. Turn down to a simmer and leave to cook, stirring regularly, for around 10 minutes, or until thick and homogenous. Turn off the heat and leave to cool down to room temperature.

Mix the flours in a large bowl. Mix the levain and the water at 29°C in a different container and mix until dissolved. Add the levain and water to the flour mixture and mix with a fork until too dense to continue. Proceed by using your hands, mixing until everything is combined to a homogeneous dough. Cover with a plate, plastic foil, or a damp towel and leave to autolyse for 30-60 min.

Sprinkle the salt on top of the dough and add the cold water. Mix by getting your fingers under the dough (in the bowl) and pulling a portion of the dough upwards and then folding it on top of the remaining dough in the bowl. Turn the bowl and repeat until all the water and salt are thoroughly mixed. Knead the dough for a further 5 minutes, wetting your hands in water if it sticks to your fingers too much.

Leave the dough to rest for 20 minutes (covered), then wet your hand with water and do a set of stretches and folds as you did to mix in the salt before, but just folding each side of the dough once. Cover the dough.

Leave to rest for another 20 minutes and repeat the previous operation. Add the cooled porridge, breaking it up with your hands as you do so, and mix until thoroughly combined. Cover and leave to ferment overnight (8-9 hours) at around 18°C.

The next morning your dough should have risen significantly (it should be about 2/3 larger than its original size). Wet your kitchen surface lightly with water and, using a dough scraper, gently get the dough out of the bowl and onto the work surface. Shape into a ball with the help of the bench scraper and leave to rest for around 20 min.

Sprinkle a banneton or a bowl lined with a kitchen towel generously with semolina or rice flour. Sprinkle some white spelt flour over the dough and shape into a boule. Put into the banneton, cover with a plate and leave to ferment at 28°C for about an hour, or until the dough does not spring back very vigorously when pressed with a finger (it should still spring back though, otherwise it is over-proofed).

Preheat your oven at 230°C with a cast iron Dutch oven inside it for half an hour. Put a large piece of parchment baking paper on a wooden board, and turn your dough onto it. Score with a very sharp knife or a lame. Take the piece of parchment paper with the dough and lower it into the hot

Dutch oven carefully. Cover with the lid and put in the oven for 30 minutes, then remove the lid and continue baking for around 30 minutes more or until the crust is dark brown. Remove from the oven, put the dough onto a cooling rack and leave to cool completely before slicing.

• **Toasted linseeds**

Put a couple of handfuls of linseeds into a dry skillet, and toast over medium heat until some of them start to pop. Leave to cool on a baking sheet.

To assemble Dish 1

Using a bread knife, cut a 1cm thick slice of the loaf of bread (discard the ends of the loaf, as you want to have a more or less consistent amount of crust for all your servings). Then divide your slice of bread into more or less square pieces of around 5x5cm, all containing a piece of crust. Spread a heaped teaspoons of the parsnip purée on top, and sprinkle with a pinch of toasted linseeds. Serve immediately, lest the linseeds start becoming slimy in contact with the purée.

Recipe for Dish 2

• **Kapucijner and wild garlic hummus**

Ingredients

Dried kapucijners- 275g

Wild garlic leaves⁵- 85g

Fine sea salt

Apple cider vinegar

Rapeseed oil

Method

Soak the kapucijners overnight. The next morning, strain them through a colander, give them a rinse and put them in a pressure cooker. Add enough water to cover them by a few centimetres and cook at 15 PSI for 25 minutes. Leave to release the steam naturally.

Rinse the wild garlic leaves, pour a bit of rapeseed oil into a pan, and wilt the wet leaves for a few of minutes. Put in a blender together with a couple of tablespoons of the kapucijner cooking liquid and blitz to a purée.

⁵ A note on foraging wild edibles: foraging wild food can be dangerous, as edible plants and mushrooms may have poisonous lookalikes. It is also important to respect the natural environment in which you decide to forage. You might find the rules described here helpful: Foraging Code. (2022). *Wild Food UK*. <https://www.wildfooduk.com/foraging-code/> The website also contains an extensive mushroom and hedgerow guide with detailed information about many edible plants and mushrooms.

Add a tablespoon of apple cider vinegar, a tablespoon of rapeseed oil, and half a teaspoon of salt to the wild garlic purée, then add the cooked kapucijners and blitz until very smooth, adding more of the cooking liquid if needed.

Pass through a mouli and adjust the seasoning with salt and vinegar.

• **Danish-style spelt sourdough bread with toasted barley berries and linseeds**

Ingredients

White spelt flour- 125g

Wholegrain spelt flour- 125g

Water- 310g

Levain- 155g

Linseeds- 105g

Cooked toasted barley berries- 328g

Light beer- 70g

Malt syrup- 10g

Fine sea salt- 8g

Vegetable oil- enough to coat the loaf pan

For the levain:

Mature sourdough starter- 24g

Water at 29°C- 64g

Whole-grain spelt flour- 32g

White spelt flour- 32g

For the cooked barley:

Whole barley berries- 250g

Water- 500g

Method

Start by making the levain as indicated on page 5, in the recipe for the spelt and barley sourdough with porridge.

Preheat the oven to 180°C. Put the barley berries on a baking sheet and toast until aromatic and slightly browned, about 25 minutes, giving them a shake every 5-10 minutes. Pour them in a saucepan, and add 500g of water. Bring to a boil, then reduce the heat and simmer for 30-40 minutes, until all of the cooking liquid has been absorbed. Transfer the cooked grain to a baking sheet and let cool completely.

Mix the leaven, beer, malt syrup and water in a large bowl, then pour over the flours and mix thoroughly by hand. Cover and let rest for 30 minutes. Add the salt, cooked barley, and linseeds and mix by hand until incorporated. Cover and let rest for 45 minutes at room temperature, then give the dough a set of stretches and folds as described above in the recipe for the spelt and barley bread. Repeat again after 45 minutes, then dip your hands in water and transfer the dough to a standard-size steel pan, lined with parchment paper on all sides and coated in vegetable oil. Smooth the top of the loaf with wet hands, cover with a plate and let rise overnight (8-9 hours) at around 18°C. The next morning, the dough should have risen significantly (almost to the top of the loaf pan). Brush the surface of the dough with water and bake in a 230°C for 1 hour and 15-25 minutes, or until the internal temperature has reached 100°C. Remove the loaf from the oven and leave to cool for an hour before removing it from the loaf pan and putting it on a cooling rack to fully cool down. Ideally, wait until the next day to eat so the loaf can cure appropriately.⁶

• Parsnip chips

Ingredients

Parsnips, washed and scrubbed, but unpeeled- one small

Rapeseed oil- 1 tbsp

Fine sea salt

Method

Preheat the oven to 190°C. Very finely slice the parsnip in a food processor with a mandolin attachment. Put in a bowl with the rapeseed oil and salt to taste, mix everything together, and spread a single layer of parsnip slices on a baking sheet lined with a silicone mat. Bake for 15 minutes, then turn the slices and leave them in the oven for 10 more minutes (begin checking after 5 to make sure they don't burn). Turn the heat off and leave in the oven for 5 more minutes. Let cool completely before storing in an airtight container.

To assemble Dish 2

Using a sharp chef's knife, cut a slice of the bread, discarding the ends. Cut it in four rectangles. Spread a heaped teaspoon of the hummus on top, and place the parsnip chip on top.

⁶ This recipe was based on a toasted barley bread recipe found in the following book: Robertson, C. (2013). *Tartine book no. 3: modern, ancient, classic, whole*. Chronicle Books.

Recipe for Dish 3

• Parsnip, spelt, and barley cake with kapucijner miso and linseeds

Ingredients

Parsnips- 200g, washed but not peeled, and processed until resembling fine couscous

Levain- 120g

White spelt flour- 70g

Wholegrain spelt flour- 40g

Wholegrain barley flour- 40g

Lupin flour- 30g

Kapucijner miso- 1 heaped tsp

Linseeds- 60g, soaked in 60g hot water for 1 hour

Rapeseed oil- 120g, plus a little bit more for lining the cake tin

Dark brown sugar- 120g

Water- 125g

Baking soda- 1/2 tsp

Baking powder- 1 tsp

For the levain:

Mature sourdough starter- 20g

Water at 29°C- 50g

Whole-grain spelt flour- 25g

White spelt flour- 25g

Method

Start by making the levain with the method indicated in the recipe for the spelt and barley sourdough with porridge on this document.

When the levain is ready, preheat the oven to 185°C and line a loaf tin with parchment paper and rapeseed oil.

Mix the oil, parsnips, levain, linseeds, water, and sugar in a large bowl. In a smaller bowl, whisk together the rest of ingredients. Add the dry ingredients to the wet mixture little by little while mixing, taking care not to overwork the dough. Once everything is incorporated, tip into the prepared loaf pan.

Bake for 50-55 minutes, or until a toothpick inserted in the cake comes out cleanly. Leave to cool down completely in the tin.

To serve, cut into 1cm thick slices, then divide each slice into four.

Reference list

- Foraging Code. (2022). *Wild Food UK*. <https://www.wildfooduk.com/foraging-code/>
- Redzepi, R., & Zilber, D. (2018). *The Noma guide to fermentation*. Artisan.
- Robertson, C. (2013a). *Tartine book no. 3: modern, ancient, classic, whole*. Chronicle Books.
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