LAB low food

Low Food Lab:

chicken

Chicken delved into the often-overlooked parts of the short-chain Oranjehoen chicken. These parts possess substantial untapped potential. The objective of this research was to shine a light on every facet of the chicken, unveiling novel culinary possibilities and innovative recipes.

About Low Food

Low Food aims to change Dutch gastronomy. Low Food was founded in 2018 by a group of chefs, political scientists and producers. Since then, the movement has grown and so have its ambitions of changing Dutch gastronomy, putting Dutch food culture firmly in first place in the fields of sustainability, inclusion, et cetera. In a world where food security, food sustainability and sustainable agricultural practices are three of the biggest issues, we believe that our food movement can have a major impact on food patterns. Accordingly, Low Food's purpose is to serve as a networking agent and platform where new ideas are created and implemented.

The Low Food Lab brings culinary knowledge, agricultural knowledge and product development together. The Labs are the places where chefs develop new products, preparation methods and techniques that contribute to a fairer, more diverse, healthier and/or more sustainable eating habits. In the Labs, we thus work on food issues for which a culinary solution must be found. Such as smarter ways to valorize residual streams or the development of applications that make certain ingredients accessible to a wider audience.

See www.lowfood.nl for more information.

About Flevo Campus

Flevo Campus Knowledge Institute is a joint initiative between the town of Almere, the Province of Flevoland, Wageningen University & Research and Aeres University of Applied Sciences. Guus Nelissen, project manager at Flevo Campus:
'At Flevo Campus, we address a variety of food chain issues through research, innovation and experimentation. We take an interdisciplinary approach, which means that we link up with various parties to come up with new, creative solutions. We don't just leave the research to the scientist; we also bring in food entrepreneurs or professional chefs. Flevo Campus sees a lot of potential in Low Food Lab's experimental research, which investigates food issues from a gastronomic perspective. So, what tastes good, and what works and what doesn't? Historically, these questions have been the source of most of today's culinary knowledge and food innovations – all driven by the ambition and willingness of chefs and small food entrepreneurs to look at food in a different way.
The alliance with the province of Flevoland is also key; Flevoland is one of the main food-producing provinces in the Netherlands. Food security and improving the sustainability of the food and agricultural system are hot topics at the moment. This region in particular is facing a number of challenges in these areas, for which Low Food Labs could provide a solution.'

See www.flevocampus.nl for more information.

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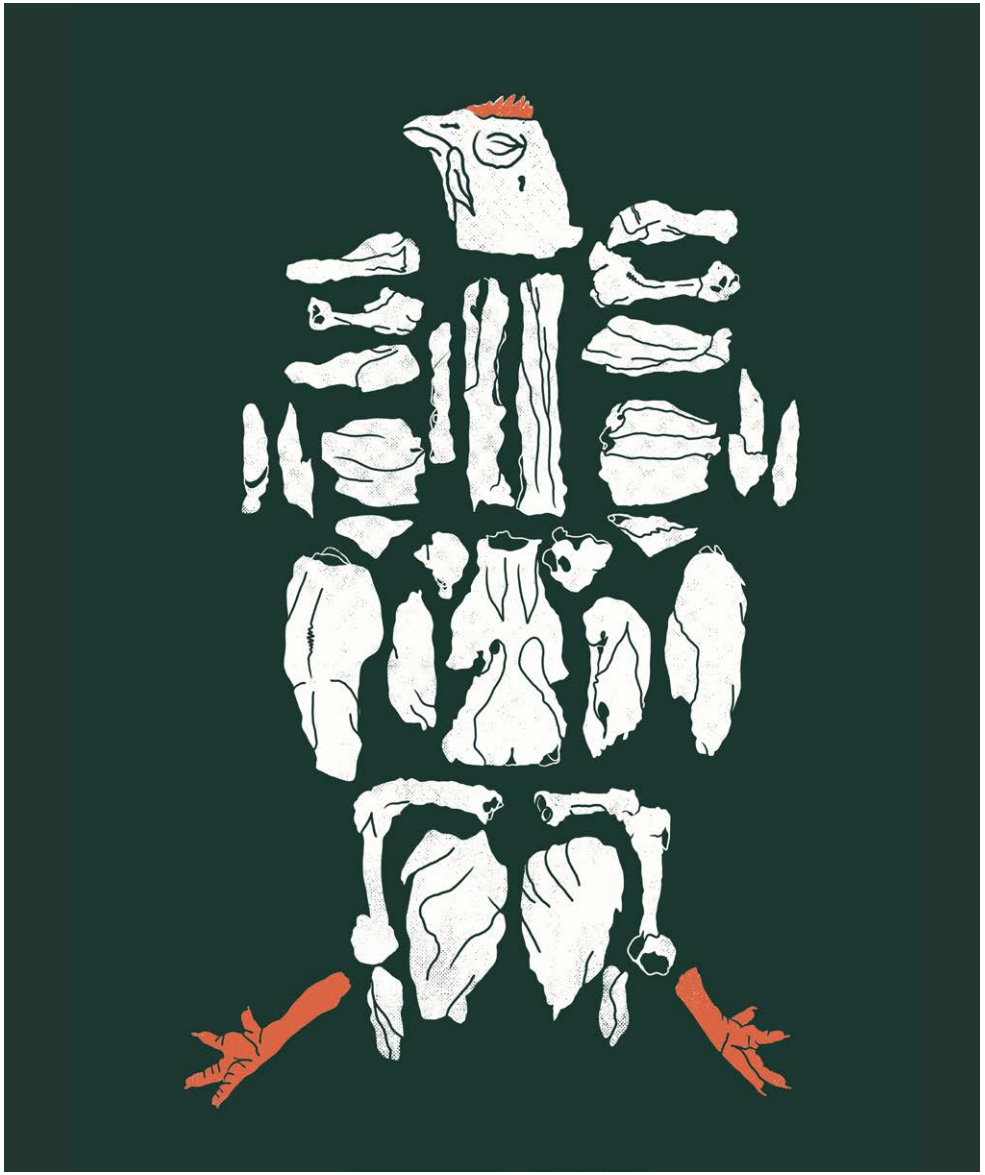
meet the team

From left to right: Akash Kumar, Billie van Katwijk, Annouka Böekling, Charlotte Eichelsheim, Johan Leenders, Isaac van Elden, Annelien Leenders, Guus Nelissen, Samuel Levie, Jerrey Gontscharoff, Sharon de Miranda, Ivana Mik, Sebastiaan Aalst, Anne Foekema.

About Chicken: The Research



A growing number of farmers are looking for alternatives to mass production. And they are driven by a desire to valorize their entire product and sell at a price that accurately reflects the quality and taste. Johan Leenders, chicken farmer from Swifterbant, feels the same way. Especially because at least 60% of his chicken is downgraded.

Leenders' 100% circular farm produces the Oranjehoen, a premium chicken breed that even outclasses the three-star "Beter Leven" (Higher Welfare) label. He feeds his chickens with leftover vegetable cuttings from his farmland mixed with herbs from a neighboring herb farm. That special feed, consisting of carrots and beets, gives his chickens their unique orange coloring and a delicate flavor.

He mainly sells his poultry to HelloFresh, which only uses the breast, thighs, and drumsticks – only amounting to 40% of the chicken. Since only 40% is actually used by consumers, the remaining amount must be earned back including that 40%, making the chicken relatively expensive compared to a chicken where, for example, 80% is used by consumers. Because

there is no demand from consumers, these parts of chicken are downgraded from high grade to low grade, and must be processed through other residual streams. This remaining 60% is currently considered low-grade chicken and is largely exported to Africa or winds up as animal feed.

The Lab's Objective

Since the demand for Oranjehoen is growing, this lab is collaborating with several partners and participants to explore how the remaining 60% of the chicken could be used. Because here's the rub...If Leenders were to produce far more chickens, he'd also be producing a far bigger waste stream. That would harm his farm and the entire chain. So, he posed the following research question to Low Food:

How can we valorize the whole Oranjehoen chicken throughout the chain with culinary applications for the less common parts of the chicken?

Methodology

Chef and Head of Lab Jerrey Gontscharoff collaborated with a diverse group of experts:

- ***Sharon de Miranda (chef at Food Forum)***
- ***Ivana Mik (fermentation specialist)***
- ***Billie van Katwijk (designer)***
- ***Isaac van Elden (broth specialist)***

This Lab was to be the first to feature a collaboration with experts from outside the food chain. Working with various disciplines, the team concentrated on the less conventional parts of the Oranjehoen. In fact, the team of specialists spent two months experimenting with the neck, feet, skin, and other chicken parts that are rarely or never eaten in the Netherlands.

The chicken's journey

The Chicken Lab monitored the Oranjehoen's farm production and traced its journey throughout the entire short chain from the slaughterhouse and poultry processor to the consumer market.

The team visited Johan Leenders' farm to learn about the first beginnings of the Oranjehoen's process, and followed it with a trip to the slaughterhouse, Storteboom, where the Oranjehoens are processed. During the visit, it became clear to the team which parts of the chicken were available for the experiments, and which could not be used. Head of Lab Jerrey Gontscharoff recalled:

'What really struck me was the efficiency of the operations at Storteboom. Everything is very streamlined and fast; all the processes have been carefully thought out. The operations are geared to the major markets: the supermarkets and the industry. However, that same efficiency means it is difficult to make changes to the process: you can't easily remove a certain part of the chicken without disrupting the hygiene system, for example. Some of the team wanted to use the feet, but unfortunately we couldn't get them. The process determines which parts are worthwhile, and which aren't, depending on the demand.'

Review session at Food Forum, Almere

Jerrey Gontscharoff

Jerrey Gontscharoff, a chef at Amsterdam's Pension Homeland, has a very keen professional interest in deli meats and in using the entire animal, from head to tail. He was, therefore, the obvious choice for this Low Food Lab's Head of Lab and for leading the research.

Jerrey: 'For me, as a chef, sustainability in the kitchen above all means that you know where your products are sourced and that you use as much of the product as you can. In other words, we use the whole animal. I've worked in kitchens since '97 and down the years, I've found myself focusing more and more on deli meats. As a chef, you always want to work with good products and the Oranjehoen is a prime example: it comes from a producer who is really passionate about the environment and who has lots of ideas about it too. I started trying out various different ways of using the chicken. I was immediately struck by the flavor of the Oranjehoen, it's very good and quite pronounced. There is almost no end of ways to use this chicken, it has so much potential. It truly is the most versatile piece of meat there is!'

The study

Jerrey got to work trying all sorts of dishes using parts from the Oranjehoen.

Pâté en croûte

RECIPE BY JERREY

To start with, Jerrey made a pâté en croûte from Oranjehoen skin, drumsticks, breast, heart and liver. The result was a mouthwatering, rich Oranjehoen pâté. To make the crust, he used fat from the chicken instead of butter and replaced the water with chicken stock. To raise the fat content, Jerrey also used the skin of the chicken. The resulting pâté goes very well with a confit of chicken gizzards.

INGREDIENTS

Filling:

- 600 gr chicken liver
- 1000 gr chicken skin
- 1000 gr drumstick meat
- 400 gr chicken heart and/or stomach
- 160 ml broth
- 54 gr coloring salt
- 9 gr black pepper
- 3 gr mace
- 15 gr onion
- 120 gr rice flour
- 6 gr dextrose

Dough:

- 300 gr chicken fat
- 360 gr stock
- 20 gr salt
- 750 gr flour

METHOD

Mix the ground chicken meat with the rest of the ingredients as cold as possible. Bring the chicken fat, broth and salt to a boil. Sift the flour into a bowl, make a well and pour in the liquid and form a dough ball. Let this cool before rolling it out to line a mold. Fill it with the pate filling and bake at 150°C to a core temperature of 72°C.

Crispy chili oil

RECIPE BY JERREY

Jerrey crisped the chicken skin by heating it in its own fat at a temperature of 140°C. He tried to incorporate the fat into the chili oil, but unfortunately, the chilies he used were too hot and overpowered the flavor of the skin. However, the recipe has a lot of potential for further development.

INGREDIENTS

Filling:

- 240 gr of red chili flakes
- 1 tsp ground sichuan peppercorns
- 2 tsp gochugaru (Korean red pepper flakes)
- 1 tsp salt
- 1 tsp sugar
- 3 garlic cloves
- 1 shallot
- 1 tbsp soy sauce
- 1 tbsp sesame seeds
- 480 ml orange grouse fat

METHOD

Heat the chicken fat to 140°C, pour over the remaining ingredients and allow to cool.

Mortadella

RECIPE BY JERREY

Jerrey used the skins, the drumsticks, the breast and the hearts to make a mortadella sausage. This deli meat is usually made from pork but Jerrey wanted to try a version made from Oranjehoen parts. The process began in the same way as the pâté, but Jerrey allowed it to cool and then smoked it, creating a lovely, firm sausage. He kept the hearts whole to produce a good contrast in texture.

INGREDIENTS

- 4 kg chicken skin
- 2.8 kg drumstick meat and breast
- 600 gr chicken stomach
- 100 gr chicken hearts
- 80 gr coloring salt
- 17 gr pepper
- 7 gr ginger
- 4 gr garlic
- 21 gr onion
- 14 gr dextrose
- 80 gr rice flour
- 1 l broth

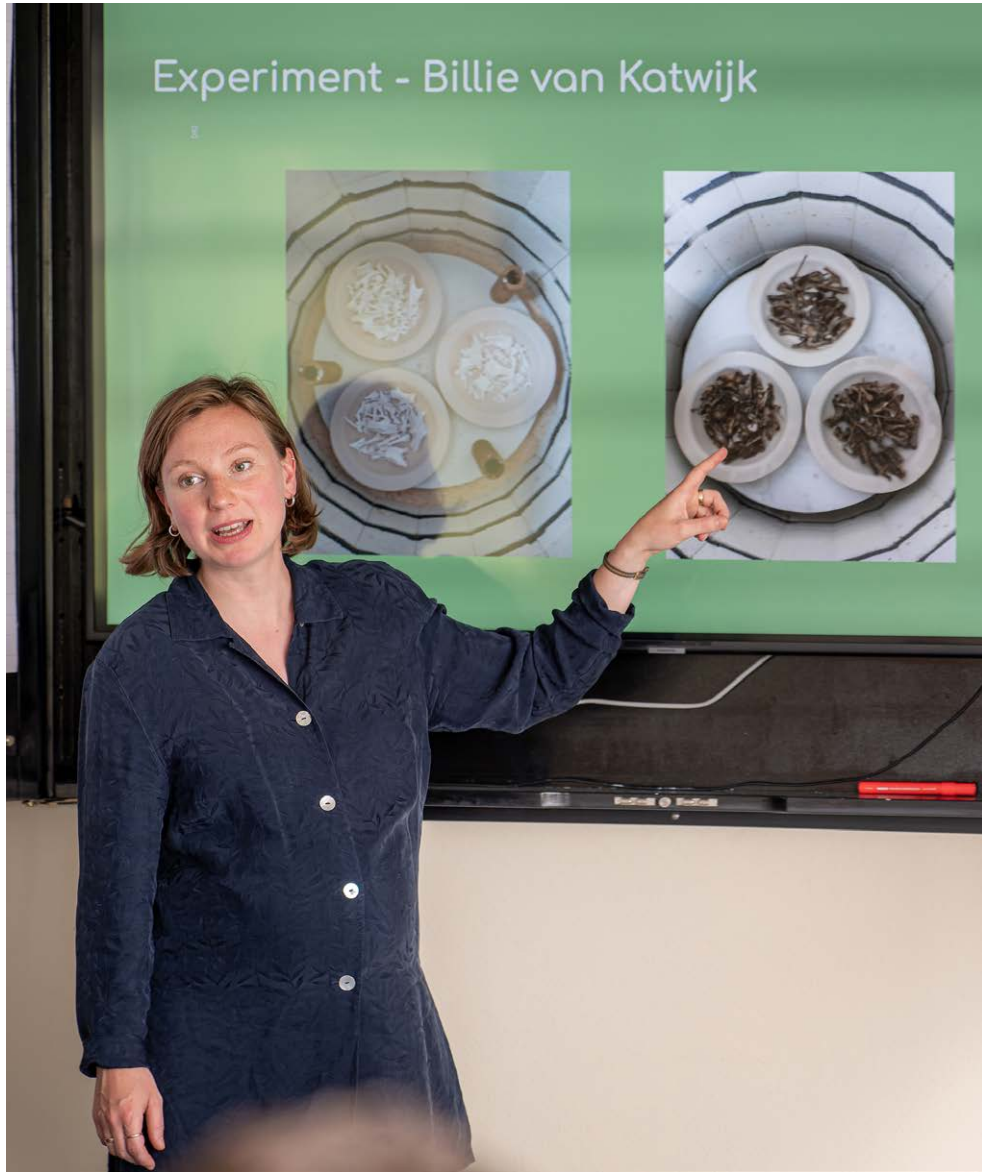
METHOD

Grind the chicken fat, stomach and meat as finely as possible and mix it cold with the rest of the ingredients. Stuff the stuffing into an artificial casing and then cook it at 75°C with a core temperature of 72°C.

For a version of the mortadella with seaweed, add:

- 50 gr soaked wakame
- 50 gr dashi no-moto
- Instead of broth, use 900 gr water and 100 gr sake

Billie van Katwijk



Billie van Katwijk is a designer who often works with undervalued materials, imbuing them with new value and form.

Billie: “I enjoy working with low-value ‘icky’ or ‘invisible’ materials to see what can be done with them. Seeing how that kind of chain operates really intrigues me. What’s remarkable about this lab is how the Oranjehoen chain already substantially incorporates residual streams, which the chickens are given as feed. Glimpsing the hidden world behind a product like this one is fascinating. It makes me wonder what I, as a designer, could do to give those trappings of a hidden world – their existence all but forgotten by consumers – a purpose and beauty, to make them visible. At the slaughterhouse, I was struck by how the system is maintained and how that’s what determines which products are valuable and which are worthless.”

THE STUDY

Chicken bone porcelain

Billie already had plenty of experience making porcelain from bone ash and got down to work with the chicken bones. She continually had to make adjustments to optimize the process. There is no catch-all trick or recipe to endlessly

repeat, no one solution for every kind of bone. She first tried to make a casting slip, but that was a bust. So, she adapted by using clay with more body – modelling clay. Isaac and Jerrey provided her with the bones, which they drew a broth from first (see page 19).

The very first step was to clean the bones, which turned out to be an achingly labor-intensive process. Billie then fired the bones to incinerate the organic material, a process not unlike cremation. Afterward, she ground the bones into a fine powder. Despite the big bag of bones at the start, not much workable material remained. Because the bone cleaning process was so grueling, Billie was also constantly faced with having to optimize the clay she had instead of making a new portion. She shaped an egg out of clay because it was a clever way to, for example, tell a story about using the whole animal in a restaurant.

Billie also tried making orange-collared clay. To do that, she ran several tests with body stain, pigment, ochre iron oxide, and red iron oxide to mix with the clay. However, the orange didn't come through very vibrantly.

Chicken skin leather

Aside from porcelain, Billie also worked on crafting leather from the chicken skins. She started with a large bag of skins clumped together. These had to be cleaned first and the fat removed. Billie tested six different recipes with tea, salt, alum, and baking soda to optimize the tanning process. She left the chicken skins to soak in the baths for ten days to two weeks, stirring them every day. Next, she dried the skins.

This process could be refined further. The Oranjehoen chicken's skin contains much more fat than other skin types. Some skins shrank significantly, while others remained large, and still others became slightly more fragile. What's remarkable is the visible patterns in the skin: on the back of the chicken skin, you can clearly see where the wings were, along with where large quills once sat embedded in the skin.

This creates a symmetrical pattern across the skin, like reptilian leather. Billie stained the skins with rooibos tea for the finishing touch, emphasizing the Oranjehoen's characteristic color.

Chicken bone porcelain

RECIPE BY BILLIE

INGREDIENTS

- Chicken bones
- Grolleg (or a different type of kaolin)
- Cornwall stone
- Quartz
- Water
- Sodium metasilicate
- Dolapix

METHOD

Clean the chicken bones (e.g., any broth residue) with dish soap and warm water, removing as much meat as possible. Wash the bones with dish soap and warm water. Fire the clean bones at 950°C to incinerate all organic material, and grind into a fine powder with a mortar and pestle. Sift the bone powder through a fine, no larger than 100-mesh sieve.

Mix the dry ingredients: 40% bone ash, 30% grolleg (or other kaolin), 20% Cornwall stone (sifted), and 10% quartz. Prepare the wet mixture separately. The amounts are expressed as a percentage of the dry mixture amount, i.e., baker's percentages: 42% water, 0.03% sodium metasilicate, 0.03% dolapix.

Mix the wet ingredients and add the dry ones. Don't stir. Instead, leave overnight to soak. Mix the next day. If the clay isn't fluid enough, you can add a max of 2% water or another 0.03% sodium metasilicate and dolapix.

Chicken skin leather

RECIPE BY BILLIE

INGREDIENTS

- Chicken skins
- Dish soap (to degrease)
- Tea
- 2 tsp salt
- 2 tsp alum
- 2 tsp baking soda

METHOD

Fully submerge two skins in a 750 ml tub of water. Dissolve 2 tablespoons of salt, 2 tablespoons of alum, and 2 tablespoons of baking soda in the water. Soak the chicken skins in the bath for ten days to two weeks, stirring them every day. Then remove the skins and allow to dry.


Canapé

Ivana Mik

Ivana Mik is a fermentation expert and food creative. She combines a background in food technology and culinary experience from her Fou Food Lab company restaurant kitchens, where she develops products for start-ups, SMEs, and multinationals.

Ivana: “Working with the least valuable pieces of chicken was the idea that inspired my research. I wound up just using what was available since the slaughterhouse couldn’t separate everything for human consumption. I thought it would be nifty to develop a product that required relatively little animal but still packed great flavor. What I had in mind was to turn the skin and bones into an umami explosion chicken elixir. Just a tiny dash could be used to infuse products and dishes with rich flavor. To do that, I used enzymes (proteases) to break down the chicken proteins into amino acids. Amino acids contain sweet/umami flavors. I also came up with scale-up options to effectively market the idea: the application I created is fast, efficient, and affordable.”

THE STUDY

STEP 1: Various combinations

Ivana started grilling the chicken to get a more delicious flavor. She then made a number of different combinations of the grilled skin and/or bones, an enzyme source (pineapple, chicken stomachs, koji and a mix of the commercially available enzymes alkalase, protana uboost and flavourzyme) and 10% salt (based on what you also find in fish sauce). She put this mixture in a vacuum bag and stored it for a few weeks at a temperature of 28°C or 60°C. It quickly turned out that the variants broke down much more rapidly at 60°C, whereby after two days there was not much solid material left. This took longer at room temperature.

STEP 2: Tests

The tests revealed that the commercial enzymes in combination with the chicken skin were the most effective, and within three days would already produce a tasty sauce at both temperatures. The skin dissolved well, and apart from a little bit of fat there was no residual product. For this reason she carried on with the skin. Incidentally, the bones also produced a tasty sauce and could therefore also be used. The bones that remained when making the elixir can be used again to make porcelain (see page 17). The bones are then completely clean, as any soft material would have fermented off. She also carried out a test with the stomachs. After three days at 60°C these produce a strong-tasting sauce with an organ aftertaste.

At 60°C the entire mixture had a stronger and more savory taste, as at this temperature the so-called Maillard reaction can occur.
This browning reaction ensures for greater penetration. Fermentation can actually take place at 28°C. This results in some acidity.
A striking result involved the koji: many restaurants use this as a source of enzymes, but Ivana found the inefficient breakdown somewhat disappointing. However, this did reveal that if fermentation is desired some sugars (for example koji) would have to be added to the mixture. The skin on its own does not contain enough sugars for a good acidification.

TEMPERATURE	1.5 HOURS	3 DAYS	7 DAYS	14 DAYS
60 degrees.	Cloudy; fat not separated: full flavor and texture. Little maillard, but already a lot of umami. Tasty as sauce.	Everything has dissolved, still some separate proteins – not a clear sauce. Mild maillard Tastes like gravy.	Almost completely clear. Medium maillard.	Clear sauce. A lot of maillard, heavy flavors. Similar to garum from koji, but less of a koji taste.

STEP 3: Balancing the amount of salt, skin and enzyme

In order to continue finishing off the elixir, in the next phase Ivana used less salt and increased the amount of chicken skin. After this the combination of 4% salt (less than 2% is unsafe if fermentation occurs, in connection with the risk of Clostridium botulinum. In order to make the experiments comparable, 4% salt was also used at 60°C), 45% skin and 1.4% commercial enzymes – 3 days at 60°C – turned out to be the best mix. During the tasting, Ivana found out that some people preferred the first version that was left for two weeks at 60°C. This had a stronger and fuller flavor. This version was more like a delicious light gravy.

Extra experiment: a super quick version

Ivana has also tried to increase the speed of the enzymatic breakdown by keeping the mixture of enzymes and skin to 60°C for 90 minutes and adding the enzymes one by one. In this way, the enzymes do not break one another down. This produced a completely different result: a sort of thick, cloudy umami salad dressing.

The result is a chicken elixir with a very concentrated savory chicken flavor; a flavoring for gravies, sauces and the like. For people who don't want to eat a lot of chicken but do like the chicken taste, simply add a drop to a meal. And if you dry it you can make a powder for crisps, etc, a sort of natural ve tsjin. Or, for example, a funky cocktail! You can use this for anything where you would otherwise use fish sauce or soy sauce.

Chicken elixir

RECIPE BY IVANA

INGREDIENTS

- 400 g chicken skin
- 12 gr salt
- 4 gr proteases (1:1:1 alkalase, flavourzyme and protana B - from Novozymes)
- 84 gr water

METHOD

Grill the chicken at 180°C until it is nice and brown. Use the fat for something else, to make soap for example. Dab the excess fat from the skin using kitchen paper. Weigh 200 g of chicken skin. If you have more, you can convert the recipe to a larger amount or make tasty croutons from the excess. Chop the skin into small pieces, and mix with the water, salt and proteases. Place in a vacuum bag and keep for a few days at 60°C until ready and delicious.

Chicken soap

RECIPE BY IVANA

Ivana had a lot of fat leftover from these experiments. She used this to make chicken soap by simply adding caustic soda. The result is a very orange soap that has a mild grilled chicken fragrance. This fat can also be used to make confit de poulet. Together with Jerrey, Ivana also made salami consisting of 50% chicken skin.

INGREDIENTS

- 300 gr chicken fat
- 113 gr demineralized water
- 42 gr caustic soda (powder)

METHOD

Be accurate when weighing your ingredients. Take 300 g melted chicken fat (at approx. 30°C). Pour it through a sieve, or filter if there are still pieces in it. Dissolve the caustic soda in the demineralized water. Wear protective clothing (gloves, goggles, lab coat) when doing so, as caustic soda can cause chemical burns. Leave the alkaline water to cool. Then pour the alkaline water onto the melted chicken fat and blend carefully with a hand mixer. Try to avoid any splattering. Once everything is mixed and has the consistency of full fat yoghurt, you can pour this into moulds. You can add fennel seeds or rosemary for that extra touch. Leave this for four weeks.

If you wish, you can add more fat to produce 'superfatting'. This extra fat does not react with the caustic soda and ensures that your hands do not dry out from the soap. Add 3-10 g extra fat to achieve this effect (when following this recipe).

Oranjehoen salami

RECIPE BY IVANA

INGREDIENTS

- 25 gr nitrite pickling salt
- 3 gr glucose/dextrose
- 0.25 gr starter culture (we used lactic acid bacteria of Christian Hansen)
- 2 gr white pepper
- 4 gr paprika powder
- 1 gr garlic powder
- 10 gr dry cider
- 500 gr chicken skin
- 200 gr chicken breast
- 150 gr chicken thigh
- 150 gr chicken hearts
- Mould starter P. nalgiovense

METHOD

First cool the meat well. Put the meat through the 5 mm plate of the meat grinder. Mix the remaining ingredients through it, apart from the mould starter.

Knead everything until it forms a good cohesive dough. Put into hog casings to form well-formed sausages of 150 g. Prepare a water bath with the mould starter. Dip the sausages into this. Hang the sausages for two days at a temperature of 18-22°C and an air humidity of 95%. Make sure that the fermentation cabinet is not too full, as a lot of heat is released which can cause the sausages to overheat and result in irregular fermentation. Measure the pH. If this is lower than 4.5, you can proceed to the next step. Dry the sausages for 14-21 days at 15°C and an air humidity of 70%. The sausages are ready once they have lost 30% of their weight.

Sharon De Miranda

Sharon de Miranda is chef at Food Forum in Almere. She has also written various cookery books and is known as chef in the TV show BinnensteBuiten.

"When I was asked to take part in this Low Food Lab I wholeheartedly said yes because I simply love Oranjehoen chicken. At home I also cook a lot with chicken, and normally use the entire animal. I think that there are plenty of opportunities in getting maximum value from the entire chicken from the mid-Asian tokos. They import a great deal at the moment, but that can also come from the Netherlands. And it will be interesting to find out why these parts of the chicken are eaten less in the Netherlands. For example, you used to be able to buy a "half om half" sandwich in many places. This is no longer in fashion I think, but I'm sure we can change this!"

The study

Sharon had first set her sights on chicken claws, but it was more difficult to get these through the slaughterhouse. So she ended up starting with the liver and hearts. Using these, Sharon prepared something she made frequently, but then as local as possible: sambal. This is based on a Suriname recipe of her mother's, but then with local ingredients. For example, it normally contains coconut oil, but now uses rapeseed oil instead. This produces a completely different type of sambal, which still has that recognizable flavor. Normally there is also trassi or fish sauce in the recipe, but Sharon has replaced this with extra herbs and spices. The concentrated chicken elixir that Ivana has made (see page 15) could also be introduced as a good local alternative.

Chicken sambal

RECIPE BY SHARON

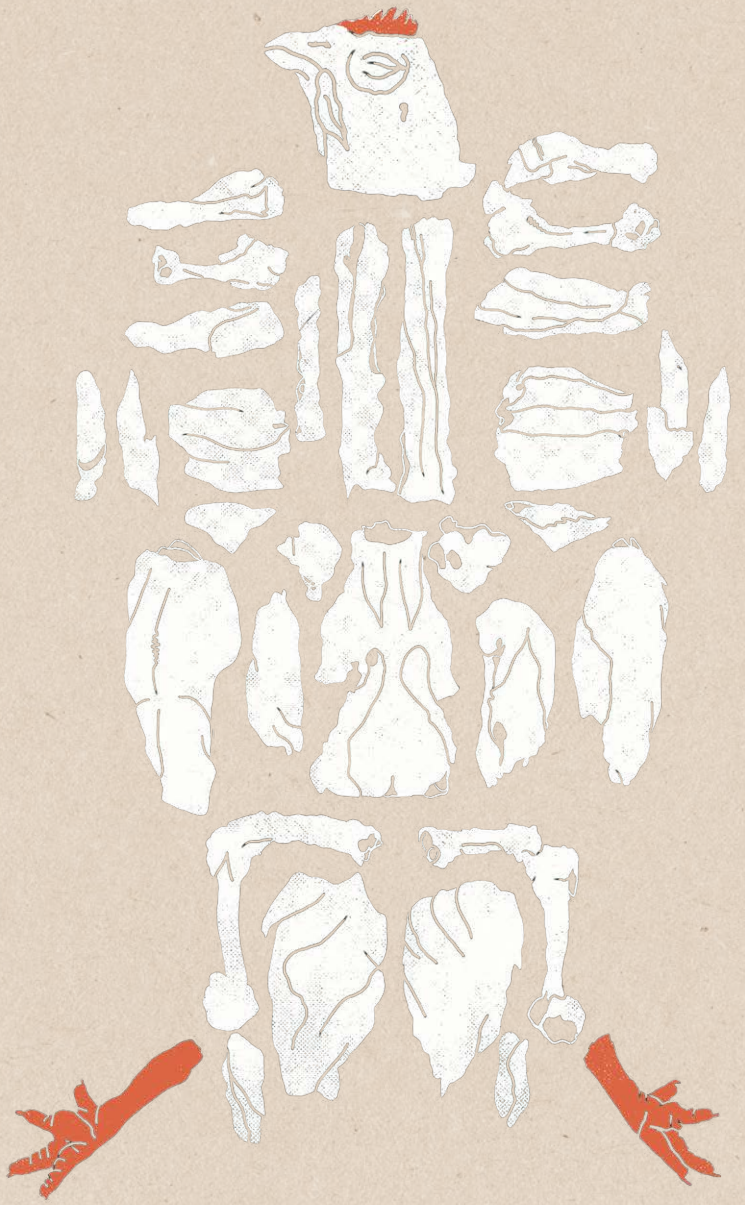
INGREDIENTS

- 250 gr chicken liver
- 250 gr hearts
- 1 onion
- 6 cloves of garlic
- 3 whole Madame Jeanette peppers
- 2 tsp salt
- About 4 tbsp rapeseed oil (possibly some extra)
- Bundle of celery leaves

METHOD

Rinse the livers and hearts under the cold tap. Put them in a pan of water and bring to the boil. Cook for 12 minutes, then pour off the water. Leave the livers and hearts to cool, then chop them finely. Rinse the Madame Jeanette peppers under cold water and dab until dry. If you like food very spicy leave the pits in, if not remove the seeds. Then chop the peppers as finely as possible. Chop the onion and garlic very fine. Sauté this in the rapeseed oil until glazed.

Add the finely chopped Madame Jeanette peppers. Fry gently for several minutes, stirring regularly. Add a little more rapeseed oil if it looks very dry and begins to stick. Add the finely chopped chicken livers and hearts to the pan. Stir all this thoroughly, adding salt according to taste, possibly with some spices for added flavor, then leave to simmer gently for 10 minutes. Remove the sambal from the heat. Chop the celery leaves finely then add. Serve this sambal lukewarm or cold.



Isaac van Elden

Over the past 15 years, Isaac van Elden has worked as a chef in a variety of restaurants in Amsterdam. He was also co-owner of the Bouillonbar, a company specializing in the production of stock for sale in supermarkets.

Isaac: “More and more people are into fine dining and more complicated cooking, but they tend to skip making the stock themselves because it takes so long. But if you look at professional kitchens, they almost never use just water; they always use stock. That’s what makes the difference between tasty and really, really tasty. I always recommend keeping a pan of stock on the stove in winter, because you can use it for anything. There are very few good ready-made stocks out there, and many of them contain a lot of yeast extract and salt. And stocks are so versatile: in French cuisine, they are gently simmered, and the fat skimmed, so that you’re left with a crystal-clear fond. Or you can even vigorously boil it, which leaves you with a cloudy stock with a rich, fatty flavor.”

The experiment

Isaac and Jerrey set about making different types of delicious chicken stock. They wanted to come up with a finished product, not just a stock that could be used as an ingredient. Their goal was to make two different stocks for two types of soup: saoto and ramen. In both of these soups, the stock plays the leading role

Ramen and saoto

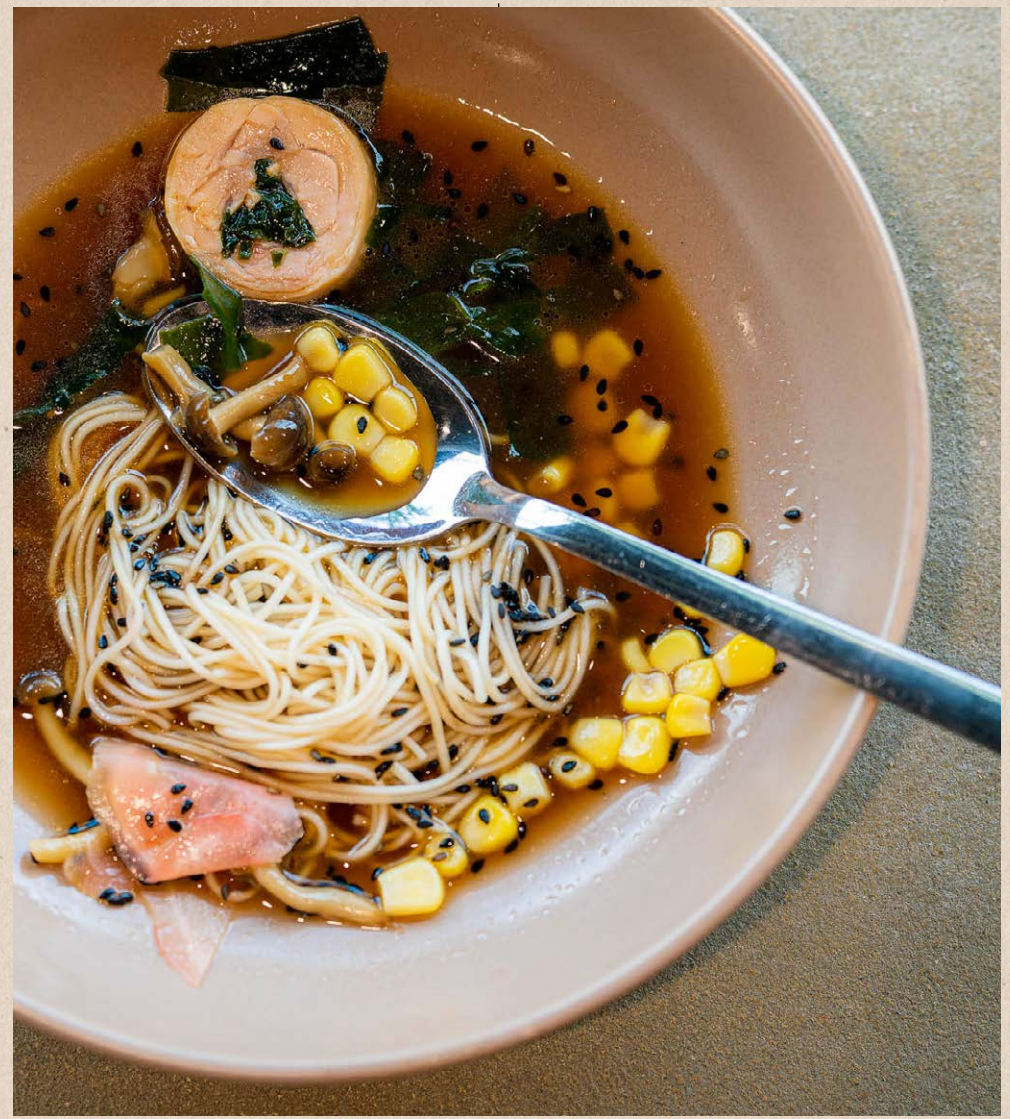
To make the best stock, it is important to use bones that still have meat (not offal) on them: bones become gelatinous, and meat gives more flavor. The bones are first roasted, which gives the color, and the caramelization of the sugar in the meat adds a lot of flavor. When making ramen, the whole thing is boiled vigorously. The stock then starts to coagulate with the fat from the bones. It becomes very gelatinous and oily and turns cloudy. All that then needs to be added is roasted onions and ginger. As a topping, Isaac and Jerrey made a sausage from chicken and offal with a dash of seaweed and other Asian flavors (see page 13). The result? A delicious soup with subtle, fresh garnishes. For the saoto soup made with chicken pieces from Oranjehoen, Isaac used his friend Noni Kooiman’s recipe from her Surinamese

Ramen stock

RECIPE BY JERREY AND ISAAC

INGREDIENTS

- 5 kg of chicken bones. Ask the poulterer for a good mix of pieces. (This can be anything, but preferably with some meat attached: carcass, neck, legs, wings, back, etc.)
- 3 white onions
- 1 head of garlic
- 80 gr of ginger



METHOD

Preheat the oven to 170°C. Halve the onions. Roast the chicken bones with the onion and garlic in a roasting pan for about 1 hour. The onions may be slightly blackened and the chicken golden brown.

Chop the ginger into slices and add to a pan with the chicken, onion, garlic, juices and browned bits from the roasting pan. Add just enough cold water to cover everything and bring to the boil over a medium heat. Occasionally remove the froth that floats to the top of the stock and cook on a medium heat for 2 to 3 hours. This will thicken the stock and give it a cloudy consistency; i.e., it will not be a clear liquid. Strain the stock, return to the pan and reduce to about 1 liter. Turn off the heat and season to taste with miso, rice vinegar and soy sauce. As miso is difficult to mix, put some of the stock in a bowl, whisk the miso through it and then pour it back into the pan. Once the last of the flavorings has been added, do not allow the stock to boil again.

Saoto soup

RECIPE BY NONI KOOIMAN

INGREDIENTS

- 3 large shallots (or 5 small ones)
- sunflower oil
- salt
- 2 chicken thighs
- 1 liter of poultry stock
- 2 stalks of lemon grass
- 1 cm of galangal
- 4 cm of ginger
- 4 salam leaves
- 5 Allspice corns
- 150 gr of white wine
- 50 gr of thin rice noodles (rice vermicelli)
- 4 eggs
- 5 sprigs of celery
- 150 gr of bean sprouts
- 150 chip sticks (chips shaped like small fries)
- Optional: home-made pepper soy sauce

METHOD

Cover a plate with kitchen paper. Chop the shallots into thin rings. Heat a good splash of sunflower oil in a heavy-bottomed pan over a medium heat and fry the shallots, stirring constantly, until crisp and golden brown. This takes about 10 minutes. Scoop them out of the oil, place on the kitchen paper and sprinkle with salt. Fry the chicken thighs in the same oil until golden brown on all sides. Add the stock. Bruise the lemongrass stalks. Chop the galangal and the ginger (with peel) into slices. Bruise the salam leaves. Add the lemongrass, galangal, ginger, salam leaves and allspice corns to the chicken in the pan and simmer gently for 30-40 minutes. Boil the rice, drain and set aside. Heat 300 milliliters of sunflower oil in a fryer to 190°C. Line a dish with kitchen paper. Deep-fry the noodles until crispy. This happens very quickly: the noodles pop open after a few seconds and must be removed from the fryer immediately. Drain the noodles on the kitchen paper. Boil the eggs for 9 minutes. Run them under cold water, then peel them.

Finely chop the celery leaves. Remove the chicken thighs from the soup, tear off the meat using two forks and set aside. Strain the flavorings and return the stock to the pan. Spoon the chicken, rice, noodles, eggs, bean sprouts, crisps and fried onions into soup bowls. Ladle the boiling stock on top and garnish with the celery.

Stock cubes

RECIPE BY JERREY AND ISAAC

Isaac and Jerrey's second experiment with the Oranjehoen chicken was to make pure chicken stock cubes. To do this, they roasted the chicken pieces without salt or other seasonings and then left them to soak in water over a low heat. They skimmed off any fat that came off the bones with a spoon. Next, they sieved the stock mixture and reduced it from fifty liters to about one liter. Some parts of the bones that contained a lot of cartilage, such as the knees, released a lot of gelatine. This left a very rubber-like, gelatinous substance that could be chopped up into cubes.

INGREDIENTS

- 20 kg of chicken (Different parts of the chicken. The flavor mainly comes from the meat and the binding from the bones.)

METHOD

Preheat the oven to 160°C. Roast the chicken in the oven for 60-100 minutes until golden brown. Transfer the chicken, without the juices, to a large pan. Fill the pan with cold water until the chicken is just submerged. Bring to the boil and skim off any froth that rises to the top. Simmer on a low heat to a gentle boil (about 95°C) for 8 hours. Occasionally skim off any fat and froth that floats to the top.

Strain the stock and bring to the boil again. Remove any impurities that float to the top with a ladle or fine sieve. Strain the stock again. This time pass the stock through a very fine sieve or passing cloth. Pour the stock back into the pan and reduce until you have half a liter. Pour the stock into an ice cube tray and leave to cool to room temperature. Cover with cling film and store in the freezer. You can also transfer the stock to a container rather than an ice cube tray.

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hello@lowfood.nl
www.lowfood.nl
Facebook
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Organisation Low Food Lab Chicken
Jerrey Gontscharoff (Head of Lab)
Sebastiaan Aalst
Anne Foekema
Guus Nelissen

Participants
Sharon de Miranda (chef at Food Forum)
Ivana Mik (fermentation specialist)
Billie van Katwijk (designer)
Isaac van Elden (broth specialist)

Editor
Laura Emous

Design
Krista Stofberg

Photography
Paulus van Dorsten

Partner
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