
The Other
parts
animal
in vitro
DINNER.

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The Other

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"a discursive dinner, participatory investigating our meat-eating past and future, evaluating our habits, prejudices, technology and ethics involved"

HOW THE MEAT STORY BEGAN

My fascination for the weird and hairy parts of the animal started when I came across the book "Odd Bits" in the City Lights bookstore in San Francisco. This book, written by Jennifer McLagan, beautifully explains how to cook these often unwanted parts. Intrigued by the pictures and stories in the book I realized how selectively we eat meat in the Netherlands. When have our sensibilities become so squeamish? Why didn't I ever taste organ meat or chicken wattles?

Even though I love to cook and often experiment with new ingredients, I never came across offal or these 'other parts' of the animal. Probably because my parents and grandparents don't cook and eat these parts either. In contrast to many other people of my generation, I'm not raised with a 'nose to tail' eating mentality.

When I started my internship at the Open Wetlab of Waag Society in Amsterdam, I could perfectly combine my interest in our meat culture with hands-on in vitro meat exploration. I decided to step out of my comfort zone and start exploring the other parts of the animal, the undesired animals and possible future meat alternatives.

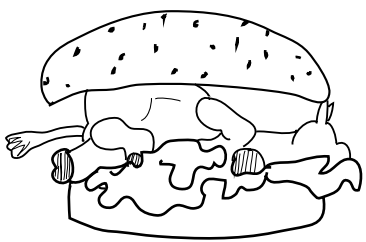
After three months of intensive research, cooking and experimenting, I developed 'The Other Dinner', an interactive exploratory public event in collaboration with cooks, scientists, philosophers and designers. During this event the past, present and future of our meat (culture) was discussed and explored by a multidisciplinary group of thrity people.

FOREWORD

by Lucas Evers | head of the Open Wetlab

In September 2009, at an event held in the Waag Society's Anatomical Theatre, artists Oron Catts and Adam Zaretsky gave a public demonstration of the procedures that will soon make lab grown meat a viable form of food production. The commercial and scientific interest in lab grown meat is intense. Catts has been asked on numerous occasions to patent his methods, while scientist Mark Post of Maastricht University recently presented the first lab-grown burger to the world's press in London. Catts and Zaretsky's work calls for us to look critically at such efforts, raising questions of both cultural and technological importance. Is beef really the easiest and most energy-efficient animal from which to grow cultured meat? Will flavour and taste become a matter of high-tech design in years to come? How do traditional meat products like haggis taste when they are made from synthetic blood and liver? Chloé Rutzerveld's 'The Other Dinner' invites guests to get hands-on with these new technologies, through the process of cooking and eating, to consider which animals - and which animal parts - we choose to consume. In her 2010 novel, 'The Year of The Flood', Margret Atwood writes of "secret burgers" - portions of animal protein that are made from unknown ingredients, and consumed in a world on the verge of a technological and ecological meltdown. During 'The Other Dinner' Rutzerveld invites you to taste her very own secret burgers; but, unlike in Atwood's imaginary world, the ingredients will be revealed to you as you eat…

ONE MUST TASTE THE PAST IN ORDER TO INFLUENCE THE FUTURE. JOIN US TO MAKE, CONSUME AND DISCUSS!



THE CHAPTERS

The Other Dinner exists of three chapters. The chapters represent the past, the present and the future of meat-eating habits in the Netherlands. They also act as ground-breaking steps; each step will push the participant further in being more tolerant towards new ways of animal protein intake. Something which is necessary to prevent food shortages in the future, when the world population will have grown to over 9 billion people.

The first chapter is about the other parts of the animal. We will take the animals we know: pig, cow and chicken, but only use the parts that actually remind us of the animal. The second chapter introduces new animals to our possible future diet. Why do we cuddle dogs, slaughter pigs and fear mice? In the third chapter we will look at meat produced outside of the living organism, in vitro meat.

Every chapter contains easy recipes, instructional drawings, background information and beautiful pictures. Be challenged and start thinking about why you actually eat the animals you eat? Why is it okay to slaughter a whole animal for us to only eat the chops and steaks and feed the 'other parts' to foreigners and pigs?

This booklet is not a plea against eating animals - although I did reduce my meat consumption by 90%- I just want people to consider their behaviour towards their meat and food consumption in general. Face the alternatives before abhorring them!

01

THE OTHER PARTS

Why we are so squeamish about offal and the lesser known parts of the animal.

02

THE OTHER ANIMALS

Why we cuddle dogs, slaughter pigs and fear mice.

03

THE OTHER IN VITRO

How eating mice can stimulate innovation. Will in vitro meat become our future meat?

MENU

The Other Dinner

PORK CRACKLINGS • fried slices of pig skin seasoned with rosemary and sea salt **01**

CERVELLO FRITTO • fried calf brains on a layer of fresh salad

BONE MARROW SALAD • crispy bread pockets filled with hot creamy bone marrow

CIBREO • delicious stew with offal and white wine sauce

ZAMPONE DI MODENA • pig trotter filled with the rest of the pig served with lentils and mashed potatoes

PIG HEAD • roasted pig head with authentic Dutch carrot stew

BOUDIN NOIR • spiced blood sausage on a layer of cranberry-apple compote and sauerkraut

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MICE 'N LIVER PARFAIT BONBONS • dark chocolate bonbons filled with mice liver parfait and a thin layer of cranberry marmalade served with port and scotch **02**

IN VITRO MICE • a trio of selected mice cells in a mixture of HAM's F12 and Bovine calf serum served with penicillin at the exact temperature of 37 degrees **03**

OPEN YOUR MOUTH
SWITCH OFF YOUR PREJUDICES
AND LISTEN TO NOTHING
BUT THE TRUTH ON YOUR TASTE BUDS.
NOW YOU MAY JUDGE.

The Other | 01 Parts.

MAINSTREAM DOESN'T EAT BRAINS

When it comes to eating meat, most Dutch people are spoiled, ignorant herd animals - influenced by society, media and food manufacturers. Due to urbanisation, import and mass manufacture, the physical distance between the consumer and meat has increased over time. When the animals arrive in the supermarket, the perfectly squared pieces of meat are already pre-packed and shrink-wrapped - showing no hint of the animal it once belonged to. Relatively low meat prices as a result of subsided meat like 'bloated chicken' and additional discounts in supermarkets, stimulate excessive meat consumption. Although the meat consumption decreased in Europe over the past few years, eating meat thrice a day is still accepted by the mainstream. Eating meat has become habitual instead of something special like it used to be before humans designed animals to be protein factories.

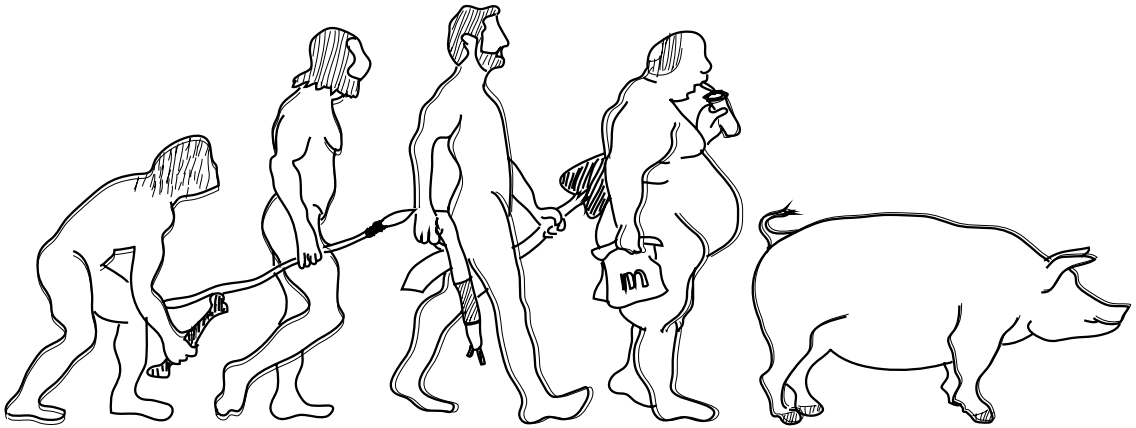
The worst part of it all is that we only eat a very small part of the animals we kill. In the Netherlands we are not used to eating ears, kidneys, tails or brains. We only eat the chops and steaks because they are the easiest to prepare and do not contain hairs or other signs of animals. People don't ask themselves what they're actually eating and those who do, ignore the images of 5 chickens stacked in one square meter by the thought, smell and taste of marinated chicken with rosemary potatoes coming out of the oven.

Because we can afford these -what we call 'better' pieces of meat- we've forgotten about the other parts which have disappeared from the shelves a long time ago. In the past, when people didn't have access to so much cheap food, they ate everything, during the Dutch famine people even ate tulip bulbs. Famous cuisines like the French and Italian, did not come in existence because of prosperity.

Due to poverty and limited food sources they valued every part of the animal and learned themselves how to prepare the whole beast. Some of the recipes we are cooking and eating during 'The Other Dinner' are authentic Italian and French recipes, using offal and limbs. Cooking and eating has a totally different meaning in these countries, they take the time to cook the entire day where as we are more interested in how fast we can prepare the food and how expensive it is.

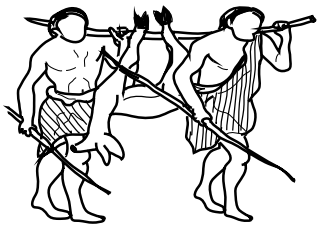
I like the idea of John o' Shea to introduce a meat licence: people who want to eat meat should first kill an animal themselves. At least I think that meat consumers should ask themselves why they eat meat and taste all the parts of the animal before shouting they don't like trotter or kidney. If we could get used to eating the other parts again and re-introduce these parts to next generations, we can make better use of all animal proteins like the rest of the world does.

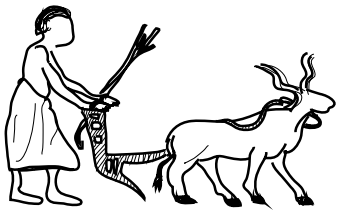
FROM SCAVENGERS AND HUNTERS TO OBESE HYPER-CONSUMERISTS



A BRIEF HISTORY

When have our sensibilities become so squeamish to decide that offal and the 'other parts' of animals had become awful?





SCAVENGERS -HUNTERS

The first human ancestors were scavengers with both carnivorous and herbivorous feeding behaviour. They mainly fed on dead animal and plant material present in their habitat. Flesh was scraped of the carcasses left by predators. When the Homo Erectus developed the first primitive range of tools and learned to control fire, scavengers also became hunters. With an increase in meat intake, the human skeleton became smaller and their brain size increased. Because the digestion of animal fat and protein takes less energy than the digestion of vegetables and fruits, more energy could flow towards the brain and increase their intelligence.

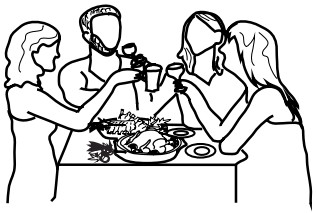
Humans and animals did not live together, predators were hunting humans and humans were hunting animals. Meat consumption was infrequent and not a single part was wasted. These early human species lived a nomadic life caused by their quest for food.

NEOLITHIC EVOLUTION

The neolithic revolution was the first agricultural revolution and changed the hunting and gathering lifestyle into an agriculture and settlement lifestyle in which various plants and animals were domesticated. Humans protected and fed the animals in exchange for labour, warmth, eggs, milk, wool and eventually meat. Humans placed themselves above the animals and made optimal use of them. The entire beast was eaten out of respect for the animal. The increase of reliable food sources caused an enormous population growth.

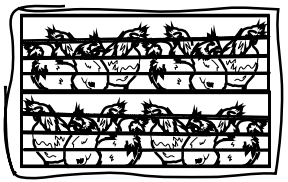
END OF WORLD WAR 2

During the Famine (Honger winter) in 1944 food was scarce in the Netherlands. Food could only be obtained with food coupons, but soon these became worthless when the entire country ran out of meat, bread, potatoes and all other sources of nutrition. People ate tulip bulbs and sugar-beets at the time when adult rations dropped below 580 calories a day. With no wood and furniture left to burn, around 20.000 Dutch people starved to death by malnutrition as primary cause. It's obvious that wasting food was not an option.



AFTER WORLD WAR 2

After WWII the Dutch government was focussed on economic recovery and industrial growth. Food prices needed to stay low which meant agricultural production needed to increase. The introduction of antibiotics, artificial manure and concentrated cattle-fodder contributed to an increased production and the start of a totally mechanized agricultural industry. With minimum manpower, fuel and animals, farmers were stimulated to achieve the highest production. A food surplus would assure a stable food supply and high export rates. Low prices and abundant food placed Dutch people in the luxury of becoming picky about their food. Food they did not like was fed to the animals or simply thrown away.



BEGINNING 21ST CENTURY

By 2005 the density of lifestock was the highest in the Netherlands, compared to other European countries. The world population increased rapidly, which meant more mouths needed to be fed. The production of meat, egg and milk increased, as well as our national income due to high export rates. Unfortunately at the expense of animal well-being, as their living space became smaller and smaller. Food prizes stayed relatively low so farmers kept increasing the amount of livestock to keep up with global competitors. By now Dutch people have forgotten meat comes from living and breathing animals because the totally mechanized, perfectly shrink-wrapped squares of meat we buy in the supermarket, show no sign of the animal it belonged to.

RECIPES 01

Delicacy or dog fodder?

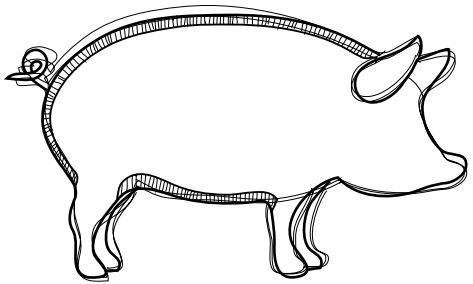
Delicacies in one country become dog fodder in another. You could ask yourself if this only has to do with prosperity or also with taste. Do Italian people really like the taste of boiled pork trotter filled with ears, tails and left-overs of the skin? Or do they eat it because they can't afford eating a steak every day?

The following recipes entail parts of animals we usually throw away or feed to our pets or Asian people. True to the nose to tail eating philosophy of Fergus Henderson - waste nothing of the animal and use every part to the fullest, showing respect to the animal you eat. Preparing the often unappreciated parts the animal asks patience, knowledge of the anatomy of the animal and cooking skills, but are definitely not reserved for noted Chef cooks. I've tried to make the recipes accessible to a wider public, accompanied by instructional drawings and pictures. This way I hopefully reduced the threshold of trying to prepare these parts. Most dishes are cooked according to the authentic recipes and are very nutrient rich and quite fat. I sometimes needed to adjust the recipe because the ingredients were not accessable in the Netherlands or not fat enough. The pork cracklings don't taste as good as the original pork cracklings for example because the fat layer on the skin is reduced. Before humans modified the animals, they contained more fat. Influenced by the food sector we started to believe fat is bad for us. Nowadays fat is mostly replaced by extra carbohydrates which is one of the reasons why we started to become obese. But that's a different story.

'ONCE YOU KNOCK AN ANIMAL ON THE HEAD, IT'S ONLY POLITE TO EAT THE WHOLE ANIMAL'

- Fergus Henderson

Pork cracklings



In many ancient cultures, animal fats were the only way of obtaining oil for cooking until the industrial revolution made vegetable oils more common and affordable. To obtain lard, people use to cook pork skin for many hours. The fat was stored in a bottle and used for cooking and the pieces which are nowadays known as for e.g. pork cracklings, were actually a by-product. Frying the thick, though pig skin is the only way you can make this part of the pig (5%) edible. Fried pork skin is eaten in many countries all over the world, known under different names. In the Netherlands it's sold as Knabbel spek, in the US as Cracklings and in the UK as Scratschings. In Canada they're called Scrunchions and are used for flavouring fish and potatoes. In Mexico they're known as Chicharróns and are eaten with lime and a spicy sauce and sold as street food.

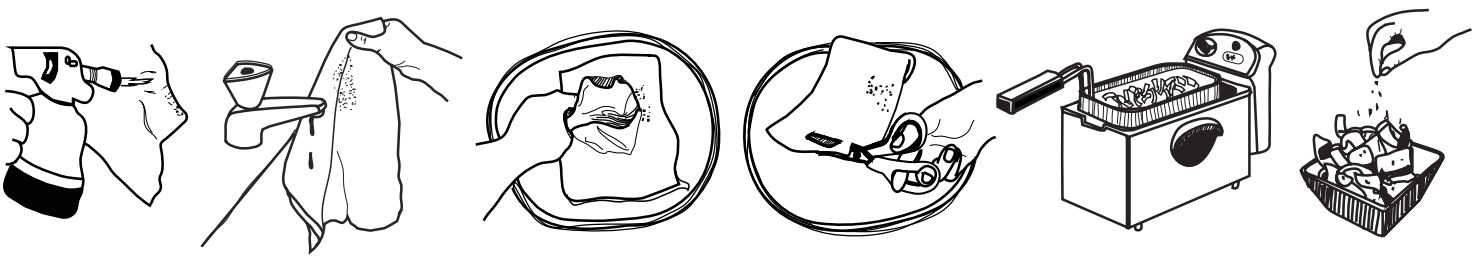
Ingredients

- 400 gr. pork skin with 1 cm fat
- 1½ tbsp sea salt
- ¼ tsp smoked paprika
- 2 tsp rosemary

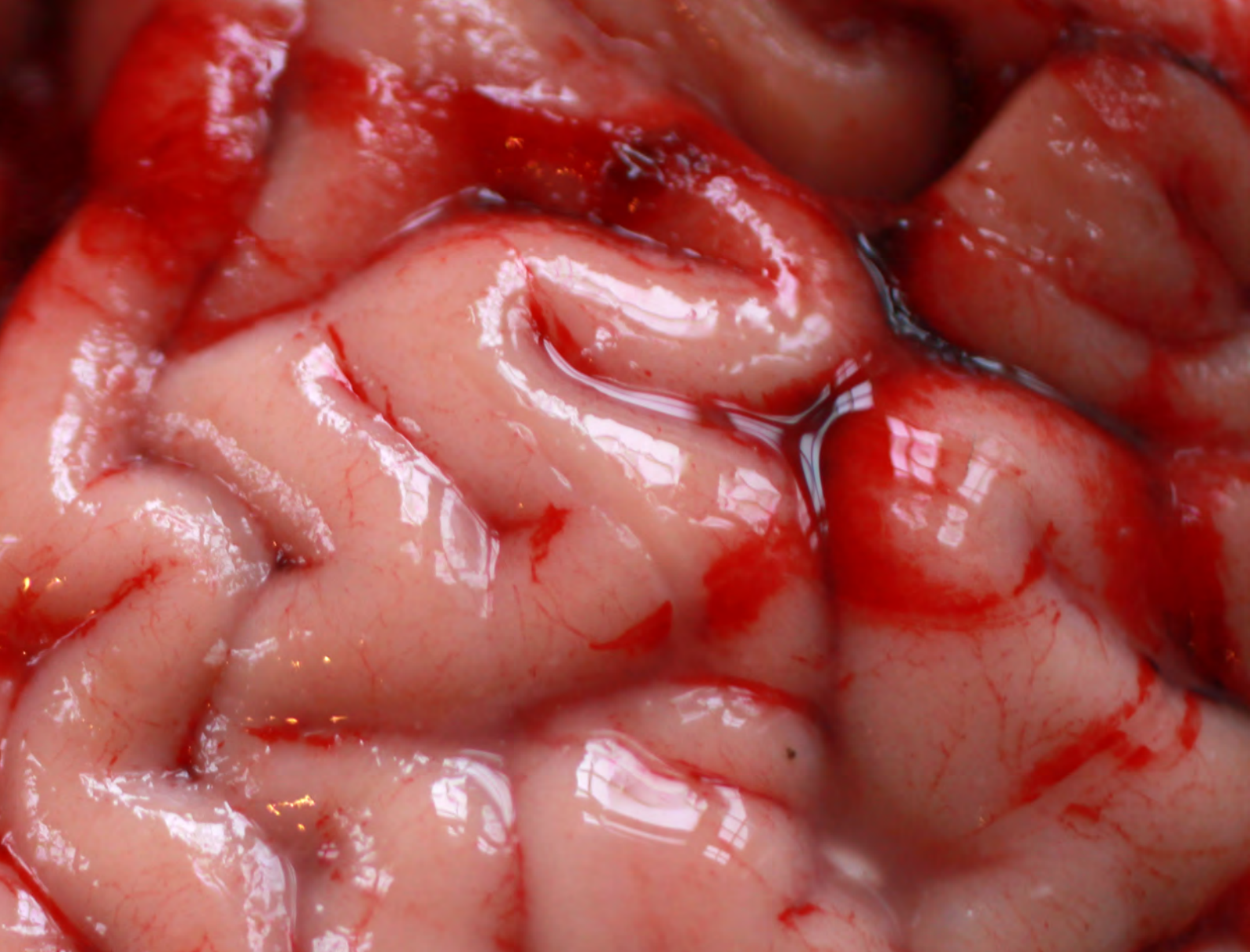
Material needed

- deep fryer
- paper towels
- scissors
- torch
- lighter
- cutting plate
- knife
- bowls

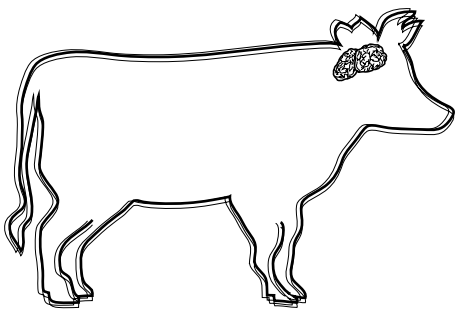
Preparation 40min 6



Place the skin overnight in cold salty water for at least 6 hours. Take the skin out of the water and pat it dry with a paper towel. Use a kitchen torch to get rid of the remaining hair on the skin and use a knife to rub the burned hairs off. Rinse under cold water and pat dry again. Take a clean scissor and cut pieces of 3 by 1 cm. Put the pieces in the deep fryer for approximately 40 minutes at 190 degrees until they curl and have a nice golden brown color. Take them out of the deep fryer and place them on a layer of paper towels to pat off some fat. Place the pork scratchings in a bowl and sprinkle a mix of coarse sea salt & rosemary over them. The pork cracklings can be seasoned with any seasoning you like; perhaps it's fun to use several seasonings in separate bowls. The pork cracklings are ready to serve!



Cervello fritto



Like most other internal organs, the brain can also serve as nourishment. In many places all over the world, brains of pigs, squirrels, horses, cattle, chickens, goats and monkeys are eaten and considered a delicacy. Most often brains are spiced, covered with bread crumbs and fried or used in cold salad. Brains have a very soft texture and a rich and creamy taste. But why don't we eat them in the Netherlands? Is it because we are disgusted by the thought of eating it, because we are simply not used to, or does it have to do with health concerns?

During the 1990's, consumption of brains became less popular because they were banned for fear that it would lead to Creutzfeldt Jacob disease or BSE. In many countries consumption of brains was related to superstition, rituals and tales. In Indonesia and China people believe that eating monkey brains cures erectile dysfunction and European Neanderthals would have incorporated eating brains in their mourning rituals according to archaeological evidence. The recipe is easy, the preparation time very short and a set of calf brains can be ordered at your butcher for only €4,50. So why not try it?

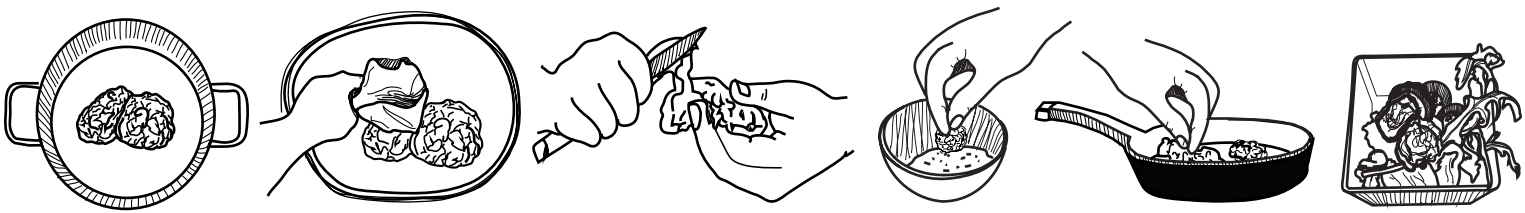
Ingredients

- 600 gr / set calf brains
- 1 cup flour
- 1½ tsp sea salt
- 1½ tsp pepper
- olive oil
- parsley
- 1 tsp mustard
- 2 tsp capers

Material needed

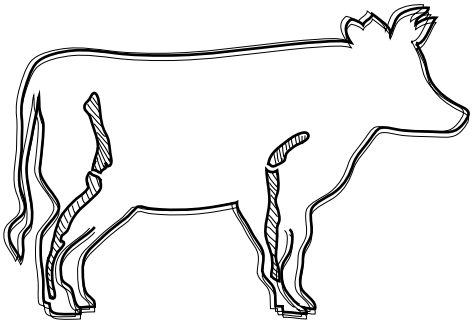
- cooking pan
- paper towel
- knife
- bowl
- cutting plate
- cooking plate

Preparation 30 6



Place the brains in salt water in the refrigerator and remove as much blood as possible by replacing the salt water every few hour. After 8 hours, take the brains out of the refrigerator, place them on a cutting plate and pat dry with a paper towel. Cut them in pieces of 1 cm and season the pieces with salt & pepper. Take a bowl with flour and cover the pieces. Heat a bit of oil in the cooking pan and cook both sides of the brain for approximately 3 minutes until they have a nice gold brown color. Place the brain pieces on top of your mixed salad. Add parsley, one tsp mustard and 2 tsp capers to the brain fluid in the pan. Mix and cook shortly. Use the mixture as dressing on the brain salad. Enjoy!

Warm bone marrow salad



Bone marrow is the flexible tissue in the interior of bones and probably the easiest form of offal to obtain. Bone marrow was one of the first reliable sources of animal fat and protein for tool-using hominids who were able to crack open the bones of carcasses left by predators (such as lions). Animal fat and protein is highly caloric and nutrient rich. Because its digestion is less energy intensive compared to the digestion of vegetable protein, metabolic resources could be diverted which increased the brain activity and further development of the human brain. Before people became afraid of fat, they loved to put the creamy, salty and fatty bone marrow on toast or in a stew. In the Netherlands bone marrow is still used very often to make soup and we give it to our pets as a toy. As the youngest generation doesn't make their own soup anymore, bone marrow will be forgotten. So broaden your view, be crazy and try this recipe to integrate bone marrow into your diet. You'll be surprised by the amazing taste.

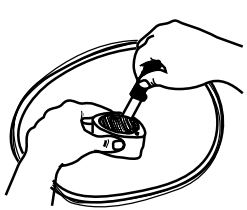
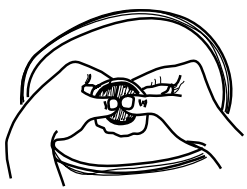
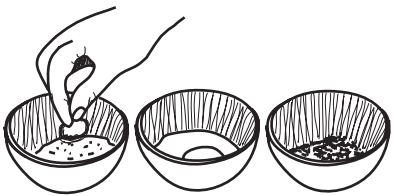
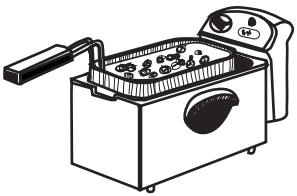
Ingredients

- 6 small bone marrows
- 1½ tsp sea salt
- 1 tsp coarse pepper
- 50 gr breadcrumbs
- 1 tsp mustard powder
- olive oil or lard
- 1 cup flour
- 1 egg

Material needed

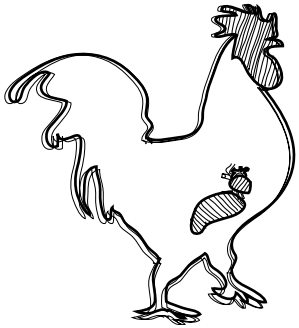
- deep fryer
- paper towels
- cutting plate
- knife
- 3 bowls

Preparation 30min 6


Take the bone marrow pieces out of the refrigerator and let them become soft in room temperature. Cut with a knife around the edges of the bone marrow on both sides of the bone. Use your thumb to push the marrow out of the bone from the smallest side to the largest side of the bone. Slice the bone marrow in pieces of 1 cm and season with pepper and salt. Prepare three bowls 1; flour, 2; stirred egg with pepper and salt, 3; mix of bread crumbs and mustard powder. Cover the bone marrow slices with the mixtures in the bowls from 1 to 3 and place them back on your cutting plate. Prepare a mixed salad and fry the pieces for approximately two minutes until they have a nice gold brown colour. Finish the warm bone marrow salad by placing the fried bone marrow pieces on top of the salad.

Cibrèo



Cibreo is an old Florentine stew made with the less noble parts of the chicken. Cocks combs, wattles, gizzards, liver, hart, stickles and even non-laid eggs. In the past food – all food - was too precious to be thrown away, and in the hands of a good cook these ingredients can do terrific things. Cibrèo was known as a simple, delicate stew, well suited to ladies with lazy stomachs, or convalescents. The modern Cibrèo recipes use only chicken livers and harts and sometimes the wattles and combs. In the Netherlands chicken livers and harts are sold and eaten by some people. The mainstream however, doesn't want to smell, taste or hear about it. It's not even possible to buy wattles and combs in the Netherlands because these parts are immediately destroyed during slaughter. Isn't it strange that our culture and government decides what we can buy and eat?

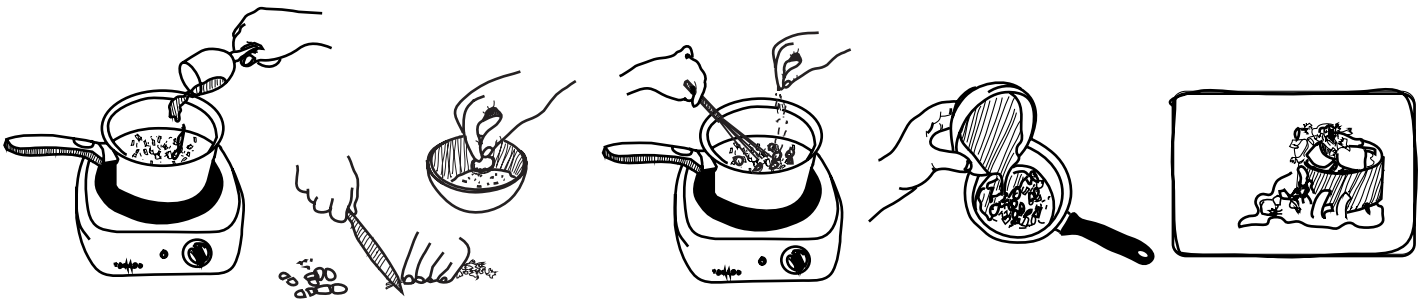
Ingredients

- 200 gr chicken liver
- 300 gr mixed comb & wattle
- 100 gr chicken hart
- 100 gr testicles (optional)
- 50 gr butter & olive oil
- sea salt & whole pepper
- ½ glass white wine
- ½ cup flour
- 100 ml chicken broth
- tsp. nutmeg
- 1 onion
- 3 egg yokes
- ½ lime juice
- 1 tsp. sage

Material needed

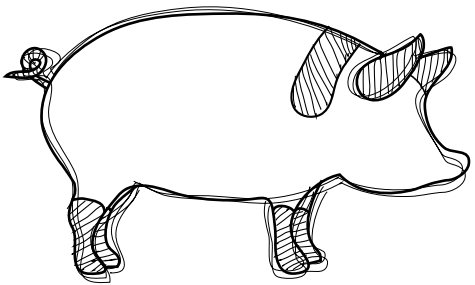
- cooking pot
- knife
- cutting board
- bowl
- whisker
- empty bone marrow (deco)
- spatula
- water boiler
- measuring cup
- cooking plate

Preparation 60min 6



Cook the combs and wattles shortly in a cooking pot until the skin becomes soft. Peel off the skin, and cut the combs and wattles into pieces. Chop the onions and sage and fry them in a mixture of butter and oil. Add the wine and the comb and wattle pieces to the pot. Let it cook for 15 minutes while stirring. Cut in the meantime the hearts and livers in two and flour them. Add everything to the cooking pot, add salt and pepper, and a pinch of nutmeg and let it cook for another 15 minutes. If the mixture becomes dry, add a bit of chicken broth. Mix the egg yokes and squeeze the lemon juice in a bowl. Take the pot of the stove and add the egg yolks and lemon juice with a bit of broth to the pot. Stir well and fill the empty bone marrow with the hot Cibrèo. Ready to serve!

Zampone di Modena



Zampone was invented in the sixteenth century (1511) when the troops of Pope Julius II besieged Mirandola. The citizens were afraid the troops would take over their pigs so they slaughtered the pigs and stuffed the meat inside the skin and legs. Before stuffing, they minced and seasoned the meat to preserve it. After winter the sausages were boiled, sliced in pieces and eaten. This way Zampone (stuffed leg) and Cotechino (stuffed skin) were created. In the next century these dishes became a specialty and the recipe has been improved and adjusted since then. Zampone and Cotechino make proper use of many parts of the pig and have become traditional Christmas and new year's eve dishes.The sausages are traditionally eaten with mashed potatoes or lentils. Italian people stopped to make the sausages themselves because of it's labour intensive process, the industrialized production made it very difficult to find a authentic recipe. In the Netherlands we are not used to fill and eat pork legs which makes the experience of doing so more exiting. Although it's not very difficult to buy a pork leg in a butcher shop, the most difficult thing is to get the bone out of the leg and knitting the though skin back together after stuffing it. At the end, the taste is definitely worth the labour.

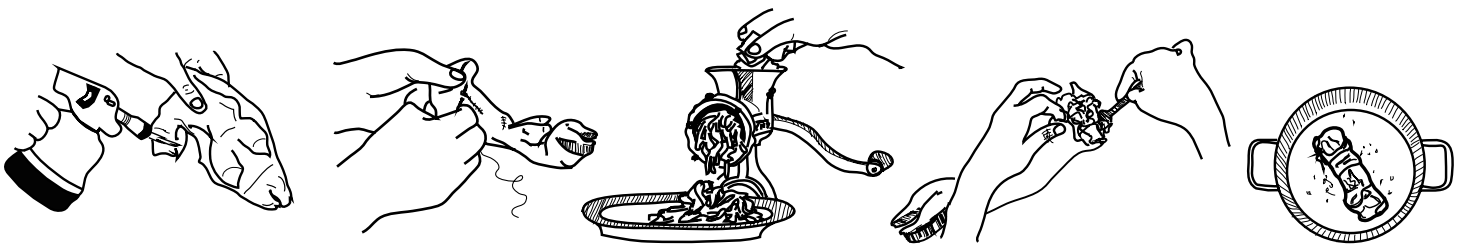
Ingredients

- 200 gr pork shoulder
- 200 gr pork skin
- 1 pork leg without bone
- 2 pork tails
- 2 tsp cinnamon
- 2 tsp pimint
- 2 tsp black pepper
- pinch nutmeg
- 30 gr sea salt

Materials needed

- meat mincer
- spoon
- cutting plate
- knife
- large cooking pot
- kitchen wire
- needle
- unstained linnen cloth
- kitchen torch
- cooking plate

Preparation 180min 6



Use a torch to remove remains of hair on the meat. Rinse the tail, skin, leg and shoulder meat with cold water and pat them dry with a paper towel. If not done already, stitch the skin of the leg together with needle and thread leaving one small hole for stuffing. Place the leg in the refrigerator. Cut the skin and the shoulder meat into pieces. Try to cut the skin and meat off the tail. Grind the fat meat (skin and tail) with a wide grinding plate and use a smaller grinding plate to mince the shoulder meat to create a nice texture. Capture the minced meat in a steel bowl. When all the meat is minced, add the spices and mix everything together. Take the leg out of the refrigerator and stuff it with the minced meat. Knit the ends of the leg together with a needle and kitchen wire. When closed, wrap the linen cloth around the leg and spiral some kitchen wire around the cloth to tighten it. Place the leg in hot water with 3 tsp salt and let it cook for 2 hours. A brown oily layer will appear on the water. After two hours you can take the Zampone out of the pot and slice it in pieces of 1cm. Serve the Zampone with lentils or mashed potatoes. Enjoy!

photo credit - Wouter van der Wal

ANATOMIC CHART TROTTER

A short lesson in 'How to take the bone out of the trotter'

In the Netherlands it's impossible to buy a trotter without the bone. So if you want to make Zampone di Modena, you will have to do the deboning all of it yourself. Experienced butchers can take of the skin in one go, they attach the bone to a hook and quickly pull the skin down. I guess most people are as inexperienced as me when it comes to deboning body parts so here is how to do it:

1. Place the trotter in salt water for a few hours. The skin will become soft and cleaner.

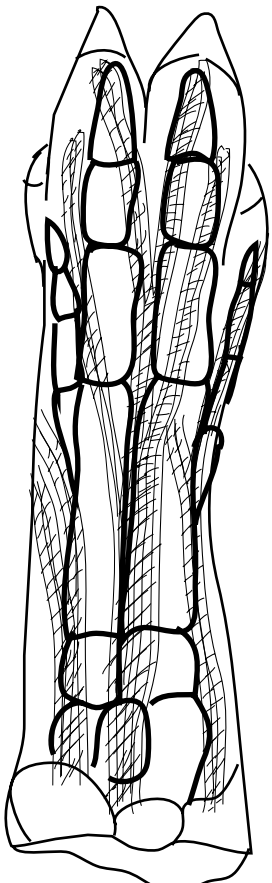
2. Use a scalpel to make an incision on the back of the trotter so it will be easier to turn the skin inside out.

3. Start at the top of the trotter by pulling on the skin and cutting the meat/fat as close to the skin as possible.

4. Eventually you can pull the skin down and turn it as a sock around the bottom part. The skin stretches more this way so it will be easier to cut it lose.

5. Once you reached the toes the most difficult part begins. You need to know where to cut and how the bones and cartilage is connected to the skin. Use your fingers to feel and carefully cut around the bones - you want the skin to remain intact. (The smallest toe can't be removed, you will leave this part in the Zampone!)

6. When the skin is loose, turn it back to normal and use kitchen wire to sew the sides back together so you get a nice cover to fill.

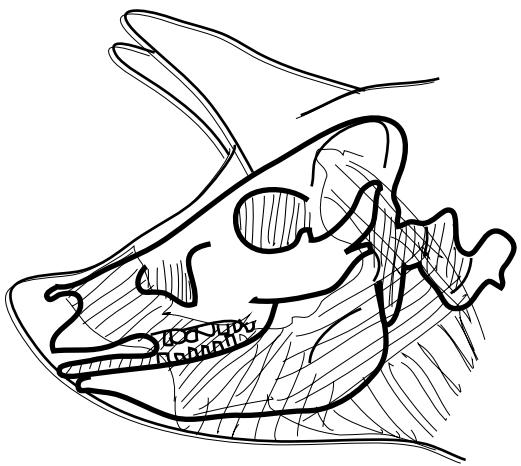


ANATOMIC CHART PIG HEAD

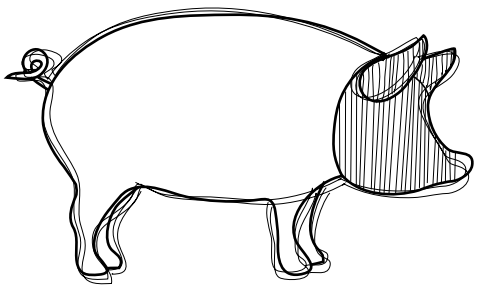
How to eat a pig head I Recommendations

For many people it will be their first time to cook and taste unprocessed pig head. The most work is the cleaning, after that the oven will do all the work for you. So after three to four hours your pig head is ready, then what? There are multiple options 1) Finger-food: you use your hands to explore the head and start picking the parts you like to eat. 2) You use a knife to cut off the cheeks and the top part of the head which contain the most meat and you eat it with fork and knife. I would go for a combination, first look at the anatomy of the pigs head and ask yourself: Where are the good parts? What do I want to taste first? Then make a cut in that area and use your fingers to take off the meat to explore the whole area through tasting.

Perhaps you can draw a map of the head and mark all the parts you like. This way it will be easier to recognize the tasty bits the next time you're eating a pigs head. Because I can assure you - once you've tried the cheeks of the pig, which are soft as butter, salty and very delicious - you might want to integrate it in your diet! The other thing I recommend is that you stay away from the eyes. They are not very appetizing...



Roasted pig head



Eating the head of an animal is a very tangible reminder that meat comes from a living, breathing animal, a thought most people want to forget when eating meat. Meat we buy in the supermarket doesn't look anything like an animal and most people are very fond of that. However the head is in many countries considered as the best part of the animal, containing a wide variety of textures and tastes. Eating a head used to be a symbol of power – a man's mastery over a beast during the hunt season. Nowadays it's rather a symbol of respect for the animal, contributing to the 'nose to tail' eating philosophy. In the Netherlands it's uncommon to prepare a whole pig's head as a family diner. Getting your hands on a whole head isn't that easy, most often you will get two halves because of abattoir restrictions. Butchers themselves use pig heads to make head-cheese or bouillon.

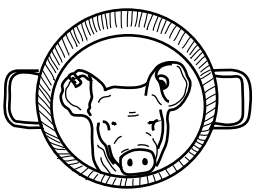
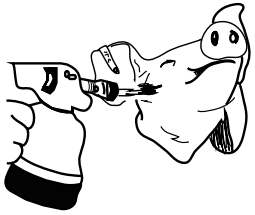
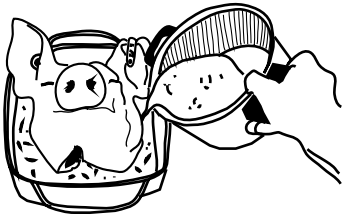
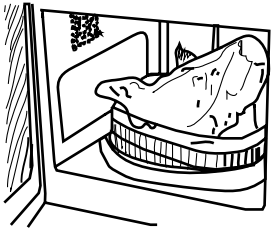
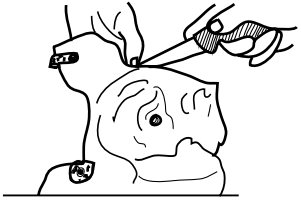
Ingredients

- 1 pig head
- 3 tsp lard
- 2 red onions
- 6 cloves garlic
- 2 tsp thyme
- 4 tsp rosemary
- 4 crushed juniper berries
- 1l bouillon
- 2 small pieces of ginger
- 2 star anise
- 1 tsp coriander
- 1 small red chili pepper
- 125 ml honey
- 3 tsp sea salt
- 1tsp black pepper

Materials needed

- oven
- torch
- paper towel
- baking dish
- aluminium foil
- baking sheet
- plastic brush
- spatula
- water boiler
- measuring cup

Preparation 180min 6

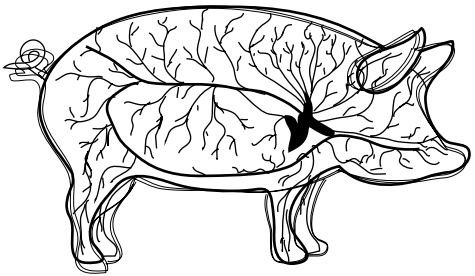
How to cook your pig head

Place the head overnight in cold salt water, if possible in the refrigerator. Take the head out of the water and pat dry with paper towels. Remove all facial hair with a kitchen torch and clean the ears with a damp paper. Rinse the entire head once more under cold water and pat dry with a kitchen towel. Place the head in the refrigerator and preheat the oven to 180 degrees. Chop the onions and garlic and roast them in the lard until they have a nice brown color. Add thyme, rosemary, salt, pepper and crushed juniper berries to the pot and let it cook for one minute. Poor the mixture in an oven dish, place the head on top of the onions and add 875 ml bouillon. Cover the ears and the head with a piece of aluminium foil and place the head in the oven for 2½ hours at 180 degrees. Make the glaze in the meantime.

Making the glaze

Fry the small pieces of ginger, star anise, coriander and chili pepper in a small saucepan. Add honey and bring to a boil for 3-5 minutes until the honey starts to caramelize. Take the pan of the fire and add 125 ml bouillon while stirring. Place back on the stove and let the mixture simmer for 10 minutes. After 2½ hours you increase the oven temperature to 200 degrees and remove the aluminium foil. Brush the head with glaze and cook for another 20 minutes. Brush with glaze every ten minutes. Transfer the head to a baking sheet after 20 minutes and broil it until the skin begins to puff and crackle (5 min). Garnish a plate with stew and place the head on the stew before serving. You may eat the pig head with your hands!

Boudin noir



Boudin noir or black pudding is a sausage made of congealed blood and meat. Perhaps the name or additional ingredients will be different, but the blood sausage itself is consumed in many countries all over the world. Boudin noir is most often made from pig blood. When religious beliefs disapprove the consumption of pig blood, blood from cattle, sheep, ducks and goats can be used as well. In the Middle Ages, black pudding was eaten by Dutch people especially during carnival. Until a decade ago, boudin noir with apple slices was a Sunday morning delicacy. Nowadays black pudding has become less popular, and the thought of eating pure blood is repelling for most people. Its rarely sold in supermarkets and most often needs to be ordered at the butcher shop. People who still love to eat this sausage can buy it across the border. In Germany and Belgium, boudin noir is still considered a delicacy. Should we let it totally disappear from our diet, or can this blood sausage make a come-back in our Dutch eating habits? Follow the recipe to make your own blood sausage. Share seven metres of sausage with your friends and family!

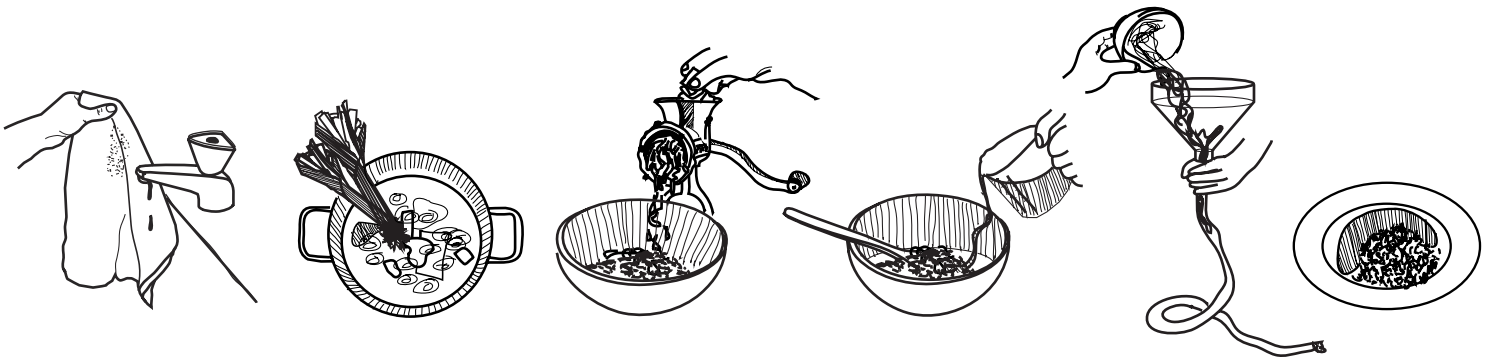
Ingredients

- 7 m cleaned intestines
- 2 kg pig belly with fat
- 1½ ltr blood
- tongue, hart, spleen, lung from one pig
- 1 kg apples
- 1 package celery
- 1 kg leek
- 10 cloves
- 1 kg onions
- pepper and salt
- cinnamon
- bouillon

Materials needed

- large cooking pot
- meat mincer
- cutting plate
- knives
- cooking plate
- baking pan
- bowls
- funnel

Preparation 210 min 30



The secret of great Boudin noir is liquid blood. Don't use solid blood, it will ruin the blood sausage. Cut all the organs and other meat in pieces and wash them thoroughly under cold water. Cook the organ meat for half an hour in bouillon with a lot of leek, celery, juniper berries and whole black pepper. When cooled down, mince the organ meat with the small size plate of the meat mincer. Add a little bit of bouillon to the minced meat and stir well to create a sort of meat pudding. Fry thinly chopped onions in a pan with a little bit of butter until the onions are golden brown. Cook the belly meat for 10 minutes in bouillon, mince it with a bigger size grind plate and add it to the organ meat mixture. Add the Calvados and the fried onions to the mixture as well. Poor the blood in the mixture while stirring. Season the meat mixture with cinnamon, cloves, pepper and salt. Place the funnel in the intestines and fill the intestines with the meat mixture. Cook the sausage for half an hour until it has a nice black color. Take the Boudin noir out of the pan and let it slightly cool down. Cut the sausage in slices of approximately 2 cm thick and bake them together with apple slices in a frying pan with butter over medium heat. Boudin noir is also delicious with sauerkraut. Enjoy!

photo credit - Wouter van der Wal

COOKING THE OTHER PARTS

Getting used to the other parts

Out of personal experience I know it's not easy to start cooking these often weird parts. Not only because you have to go to a butcher who sells these parts and order them beforehand (because they don't have brains, ears, tails or heads in stock), but also because all people in the butcher shop will literally think what the heck is he/she going to do? (including the butcher himself). Influenced by what other people think, we often adjust our opinions and eating habits to the mainstream. And then, the moment supreme; the first time you hold a bag of tails, a trotter or and entire pig head in your hands. What to do next? I advice you to slowly start cooking the appetizers in this booklet and work your way to the main courses and the dessert. Taking the bone out of the trotter or spooning the eyes of a pig head should not be your first contact with the other parts of the animal!

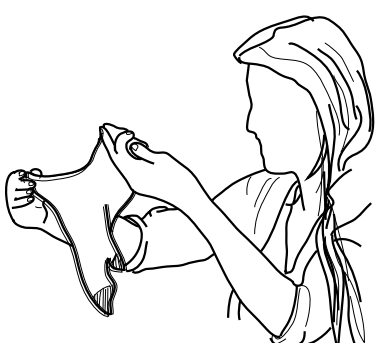
Collecting the ingredients

It turned out it's not that easy to get your hands on a whole pig head, chicken combs and wattles or lungs and brains. Other than personal fear or disgust, restrictions in abattoirs can also form a threshold when cooking in 'nose to tail' style. Certain parts of animals - especially offal- are strictly prohibited in the Netherlands and often immediately destroyed during slaughter. Massproduction of animals in the current bio-industry can cause diseases or infections in offal and limbs. While the flesh - chops and steaks we eat - are protected by antibiotics, the weaker parts of the animal might be infected anyway.

The government wants to prevent it's citizens from the risk of eating unusual parts. Brain consumption can result in contracting fatal transmissible spongiform encephalopathies such as Creutzfeldt-Jacob disease and other prion diseases in humans and mad cow disease in cattle.

Test-cooking

Every week, for eight weeks in a row, I prepared one of the recipes in this booklet. Together with a quite large test panel (including almost the entire Fab Lab) we adjusted the recipes to our taste by adding and removing ingredients. I'm glad I spent so much time on the cooking part. Test-cooking has definitely improved the recipes in relation to taste and texture, but also its practicalities. And by now, I'm fully used to all the strange body parts, I know their taste and feel much more comfortable preparing them. Which does not mean I particularly like them, unfortunately.

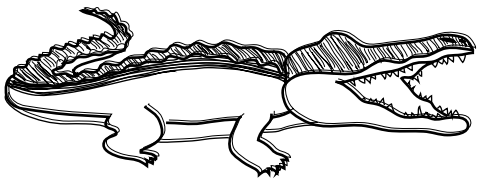


The Other | 02 Animal.

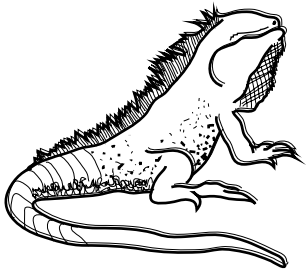
AFRAID OF EATING MICE?

let s take a look at foreign delicacies

ANIMAL Musk Rat **| PLACE** Belgium

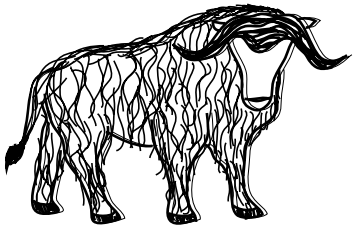


ANIMAL Crocodile **| PLACE** Asia & America



Sopa di yuana

ANIMAL Iguana **| PLACE** Antilles

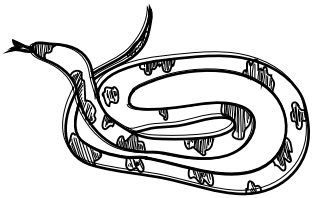


Ox penis

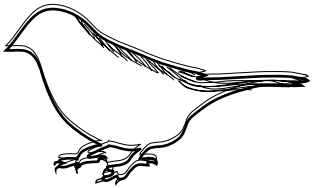
ANIMAL Ox **| PLACE** China

Escamoles

ANIMAL Giant black ants **| PLACE** Mexico

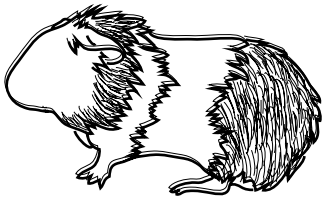


ANIMAL Snake **| PLACE** China



Sparrow on a stick

ANIMAL Sparrow **| PLACE** China



ANIMAL Guinea Pig **| PLACE** Peru, Bolivia & Ecuador

YUK, MICE MEAT?

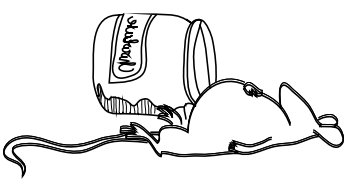
Combining the unwanted with the desired | Albert Heijn & Magriet | My supplier

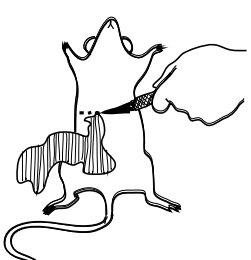
We are convinced that mice and rats are disgusting and taste awful. The thought of eating these little creatures freaks us out which is not strange at all, just biased. Our dislike for certain food is often influenced by our senses, memories or other peoples opinion. If food smells or doesn't look tasty we are tempted to say 'no thank you' before we even tasted it. Think of the first time you ate Gorgonzola or other smelly cheese. Repulsed by the look and smell, you were probably positively surprised by the taste which disputed the prejudice with actual facts. It possibly took another try or two to get used to the specific taste, but once you felt comfortable with the taste you unconsciously started adopting the ingredient in your recipes.

For dessert I'm serving mice-liver parfait bonbons. I tried to integrate a new ingredient in a well known recipe and covered it with chocolate to add sweetness to the rather dominant, nutty liver taste. Combining the unwanted animal with one of the most desired delicacies to carefully introduce mice meat to our diet. I use the same tactics as Albert Heijn did in the 60's. After the second world war, Dutch people slowly became more prosperous and had more money to spend on food and holidays. Visits to Spain, Italy and France introduced them to foreign food. In 1955 Albert Heijn established the first supermarket in Rotterdam (according to the American supermarket model) in which he gradually introduced foreign products, one at a time. He anticipated on the (for that time) experimental recipes of the Magriet - a Dutch magazine for women. Women did the grocery shopping and read the Magriet, which made these women the main target group of the Albert Heijn. Soon the Magriet became professional literature for the executive staff and a guidance for the introduction of new foreign products in the supermarket.

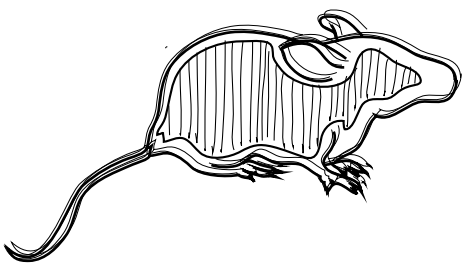
The recipe for mice-liver parfait bonbons is inspired on the dormice lollipops Heston Blumental made in 2010 (from the Fat Duck) and a combination of several recipes I found on the internet and in cookbooks. I used a regular liver parfait recipe as starting point and started adding ingredients accordingly to smell and taste. The combination of the mice-liver parfait with dark chocolate asked for something sweet. Which was the reason for adding cranberry marmalade. The slightly sweet - although bitter taste of the cranberries completes the nutty wild taste of the mice-liver parfait well.

Eating mice is for many people already scary enough, not knowing how the mice are killed and what they have eaten amplifies this fear. It's my responsibility to make sure the mice we process in the dessert are clean and killed in the right way. The mice we use in 'the Other Dinner' are delivered by Prooidier, a Dutch company specialized in prey animal food. The mice are killed with CO2 - which is not harmful for animals or humans- and directly frozen afterwards. While adjusting the recipe, I had a testpannel of 10 people who all ate one of these bonbons - they did not become ill and are still alive! So I feel quite sure to say the mice liver parfait bonbons are safe to eat.





Mice 'n liver parfait bonbons



Eating meat of rats and mice is big taboo in most cultures due to fear of disease or religious prohibition. However, in some cultures rats and mice form a dietary staple and an important source of animal protein. According to old myths, eating meat of rats will even prevent and cure back pains. In Thailand big rats are captured in rice fields, grilled and sold as street food to receive some extra income. In Africa they do the same with mice. The mice which are captured in corn fields are dried, grilled, boiled or pickled before they are sold on the street. Our culture is one of the cultures in which eating mice and rats is a big taboo. We indeed think these animals are filthy and spread diseases which is why we would never consider them as food. On top of that, the amount of meat compared to the time needed to skin and clean mice and rat meat is very time consuming. In the framework of 'getting out of your comfort zone' we should stop whining and try some mice meat before shouting how disgusting they are. To integrate mice meat in the luxurious West, we will mix it with familiar liver parfait and cover everything in chocolate.

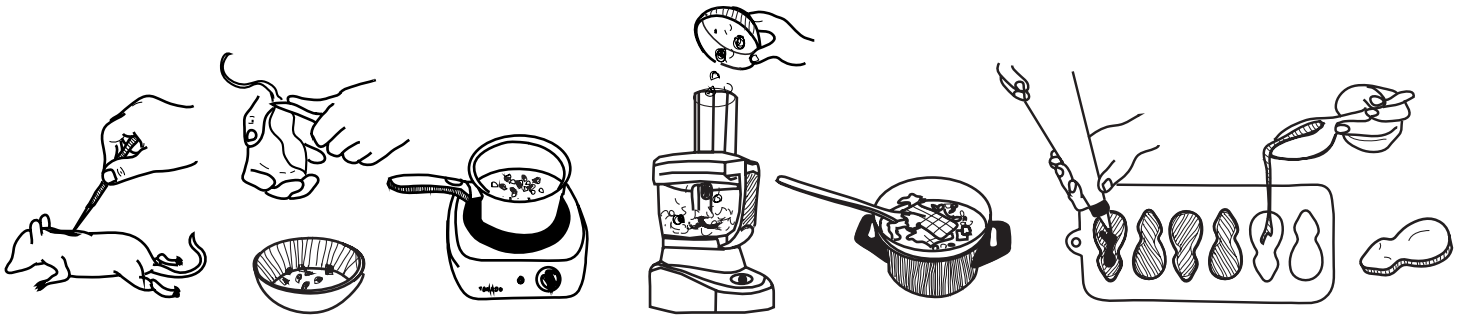
Ingredients

50 g chicken livers
-1 or 2 mice
-75 gr butter
-1 small shallot
-1 tsp thyme
-50 ml Madeira
-75 ml double cream
-½ tsp salt
-¼ tsp ground ginger
- 200 gr chocolate white/ dark
- cranberry marmalade

Materials needed

- frying pan
- knife
- cutting plate
- whisker
- spoon
- very sharp scalpel
- au bien marie pan
- gloves
- spatula
- pastry bag (optional)
- paper towels
- chocolate mould for 15 chocolates
- food processor

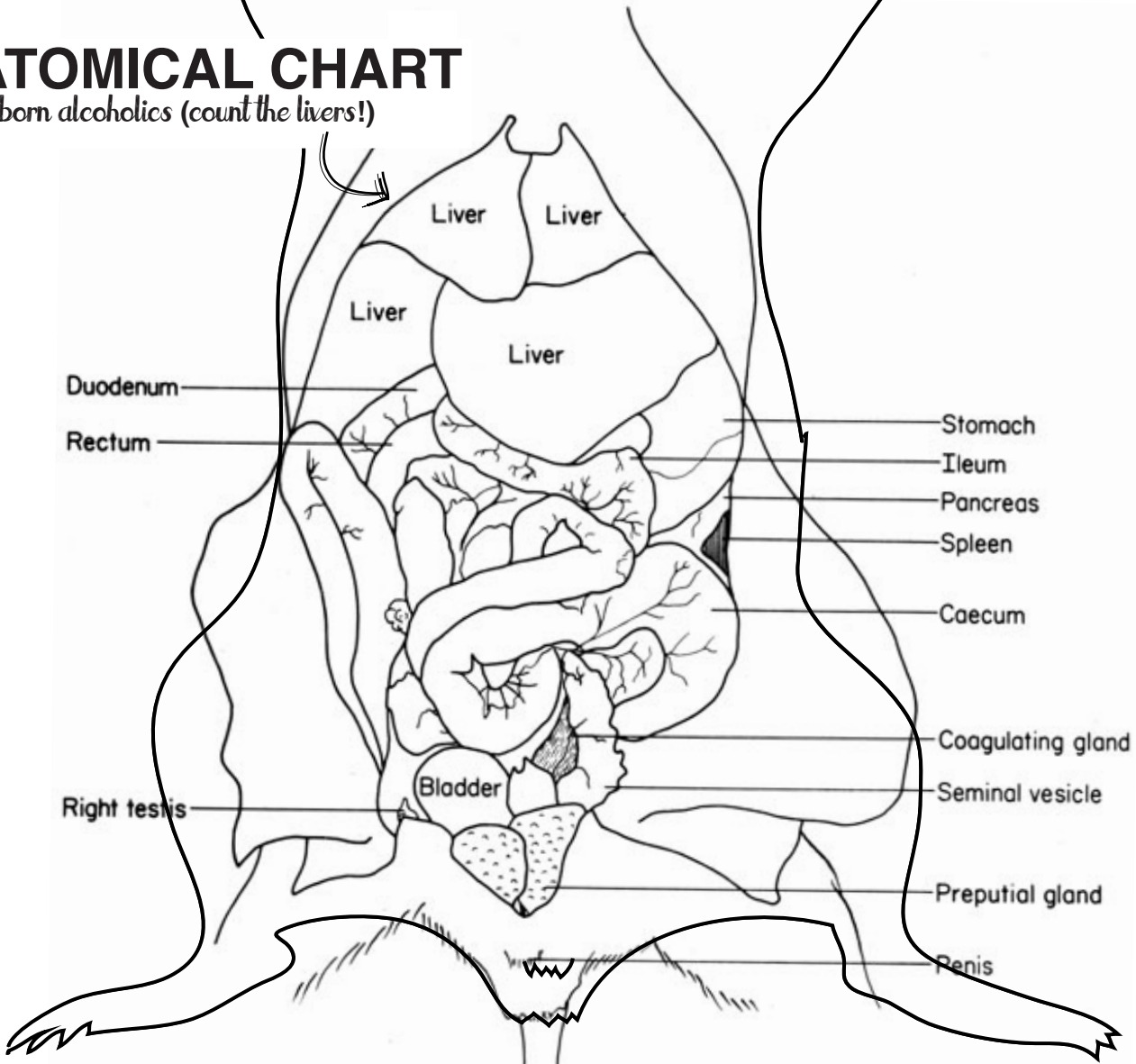
Preparation 90 min 6



Place the mouse in a bowl with cold water and salt two hours before preparation to soak the skin and clean the mouse. Take the mouse out of the bowl, dry it with paper towels and place it on the cutting board. Put on a pair of gloves and skin the mouse, starting with an incision from neck to tail. Separate the muscle meat and livers (4) from the rest of the mouse and place them into a bowl. Because mice are very small it's important to have some anatomical knowledge before you start cutting. Use the anatomy chart on page 64 as guidance. Cut the chicken livers in two and add them to the bowl. Chop a shallot and fry the pieces in a pan with butter over medium heat. Add thyme, the mice meat and the livers and cook everything until the livers are brown but still pink on the inside. Place the meat in a food processor and mix shortly. Boil the Madeira in the pan which was used to cook the meat and pour it in the food processor. Add the cream, butter, salt and ginger as well and whiz until smooth. Pour the mixture into a bowl and place it into the refrigerator until it has set. Melt half the amount of chocolate au-bain-marie and fill the mould with a small layer of chocolate. It's important that all sides of the mould are covered with chocolate as well. Place the mould shortly in the refrigerator or freezer until the chocolate is solid. Now take a plastic brush or small spoon and add a thin layer of cranberry marmalade. Take the parfait out of the refrigerator and use a pastry bag or spoon to add a layer of parfait. Melt the remaining chocolate to fill up the mould. Place the mould back into the refrigerator and wait until the chocolate has become solid. Your mice-liver parfait bonbon is finished and can be eaten. The bonbon is delicious with coffee but we advice a nice glass of scotch or port!

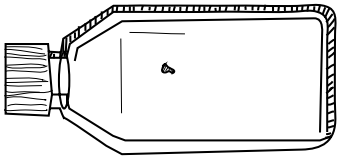
ANATOMICAL CHART

Mice a born alcoholics (count the livers!)



The Other | 03 In vitro.


Epibeel



**FIFTY YEARS HENCE
WE SHALL ESCAPE THE ABSURDITY
OF GROWING A WHOLE CHICKEN
IN ORDER TO EAT THE BREAST OR WING
BY GROWING THESE PARTS SEPARATELY
UNDER A SUITABLE MEDIUM**

- Winston Churchill, 1932 -

photo credit - Wouter van der Wal

IN VITRO MEAT

If the possibilities are endless – why limit ourselves to steak?

In the third and final chapter of 'The Other' we look at the future of our meat in relation to the previous chapters.

One of these future meat scenario's is in vitro meat. In vitro meat is meat grown outside the body of a living organism. There are multiple biotechnological techniques to grow in vitro meat. The best documented method is the Scaffolding technique; scientists place cells on a matrix (an edible grid) in a growth serum and the cells will grow on this grid. Another, often used technique is the Self-organizing tissue culture technique, in which scientists multiply existing muscle fibres in vitro. Morris Benjaminson was the first scientist to make in vitro meat according to the self-organizing tissue culture technique when he tried to grow muscle tissue from a goldfish in 2002. This was an experiment for NASA, to explore alternative protein sources for astronauts. The basic principle of tissue culturing is that one stem cell will multiply into many stem cells – every stem cell then specializes into a muscle cell – and multiply further in a bioreactor due to an additional growth serum. Together, these muscle cells form muscle fibres on the matrix. With electronic pulses these muscle fibres extend and eventually will become meat.

The world population is increasing rapidly and the demand for meat is increasing as well. Because the current way of producing animal proteins is not sufficient anymore, scientist have been asked to develop in vitro meat. The bioconversion pathway from vegetable protein to animal protein is very inefficient. 15 grams of edible animal protein requires 100 grams of vegetable protein, which is a protein loss of 85%. It's hard to explain why we feed corn and other crops to livestock while 800 million people in the world are starving of famine. Livestock is also responsible for 18% of all the greenhouse gasses and 39% of our global methane production and uses up 80% of all agricultural land for crops and livestock. On top of that the current way of producing meat is very animal unfriendly. Animals have become protein factories, living with far to many animals in the same cage, eating and staring at the same wall until they are slaughtered and end up as perfectly cut shrink-wrapped meat squares.

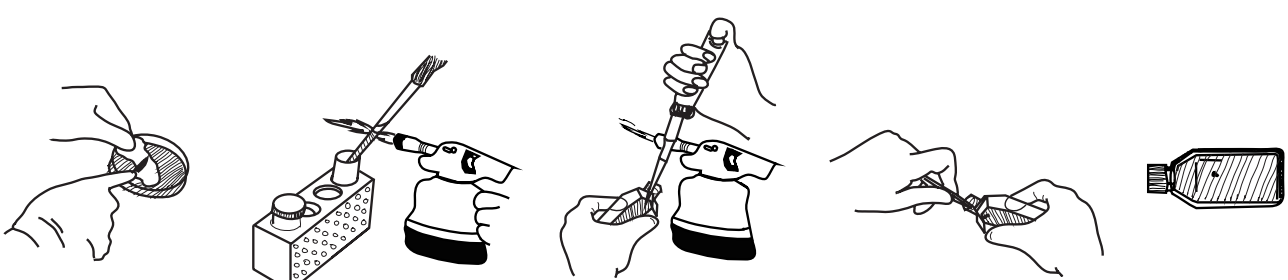
That's why animal welfare organizations like PETA but also governments and scientific institutes invest a lot of money and effort in the development of tissue culturing. In 2005, the Dutch government invested 2 million Euro on research to make in vitro meat animal friendly by creating an alternative growth serum made from for example amino acids from algae or plants. Another issue scientists needed to tackle was how to maintain volume increase. When muscle cells grow and increase in number and in volume, the surface stays the same and because there is no main vascular system to transport oxygen and nutrients to the cells, the inner cells will die. Also the taste, texture and bite of this meat are important for the success of in vitro meat as a consumer product.

Meat produced by animals gets its taste and texture from a combination of muscle-, blood-, blood vessel- and fat cells. After the first in vitro hamburger was tasted in August 2013, scientist work towards a composition of 90% muscle cells, 3% fat cells and 7% fibrous tissue to give the 'meat' more taste and a better texture.

So if we can influence the composition and the types of tissue we grow the options and variety of this new production method are endless. Especially with the knowledge that we can reprogram stem cells into any specialized cells we want - and even more ingenious, that we have the knowledge to reprogram specialized cells back into stem cells and give them a new specialisation. So why are scientists only growing beef?

In the Netherlands we already eat a very small selection of the animal and species – why stimulate this behaviour and reduce this small selection even further? The great thing about growing your own meat is that you can grow new types of meat, experimenting with tissue outside the known field of chops and steaks. There are already many artists and designers who are working on these future scenario's; good examples are the De-extinction Deli from the Centre for Genomic Gastronomy, and the future in vitro meat cook book from Next Nature.

At this point the production of in vitro meat is still very expensive and not animal friendly because of the use of Bovine Calf serum. So the question is should we keep investing in the development of in vitro meat as there are already many low-tech animal protein replacements that are tasteful, not expensive, animal friendly and accepted by the consumer?



DIY IN VITRO MICE

Do-it- yourself tissue culturing

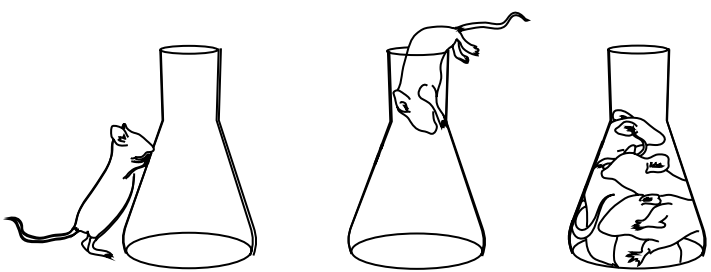
In the previous two chapters the past and present of our meat culture and eating habits is discussed. This last chapter looks into the future of meat; Can we get used to eating the other parts and other animals if we primarily think of them as animal protein sources? Or is lab grown meat indeed a good alternative for the current meat - and will it solve our global meat problem?

In August 2013 Mark Post (professor at Maastricht University) presented the first in vitro hamburger. Due to a huge campaign sponsored by Sergej Brin (one of the founders of Google) more people became aware of the existence of in vitro meat. If these people will become the future consumers of this meat, it makes sense that they also have the possibility to get in touch with this new method of producing animal proteins. After all, food chains anticipate on what the consumer wants to buy. If in vitro meat stays a vague research project for scientists, it will never be bought.

Working in the Open Wetlab enabled me to expose the public to a DIY way of creating in vitro meat. Together with Pieter van Boheemen we experimented with tissue cultures of various mice cells and wrote a recipe on how to make your own in vitro mice meat. Why we used mice cells is explained on the next pages.

"The DIY In Vitro Meat workshop investigates the emerging skeletal muscle tissue culture technology hands-on. A first step towards making growing meat in the kitchen as domesticated as growing herbs." - Pieter van Boheemen

How will people feel about lab grown meat after the workshop? Do they actually care about the animal used for the production of in vitro meat?



STIMULATE INNOVATION - EAT MICE

Why should we eat mice? How can eating mice stimulate innovation?

When humans started domesticating plants and animals during the Neolithic revolution 10,000 years ago, they already made a distinction between pets and livestock. In the Netherlands we most often eat cows, pigs, cattle, sheep and chicken, so why should we eat mice as a source of animal protein? Mice contain very small amounts of meat which makes them not efficient and very time consuming to prepare. Let alone the taste, which might be not as tasteful as the animals we are used to eat. However, the reason for me to introduce people to mice meat has nothing to do with taste. The fact that we only eat a specific selection of animals and are disgusted by the thought of eating other animals is sabotaging scientific innovation in many ways. If scientists don't have to consider cultural habits and fear of eating certain animals, innovation of in vitro meat might go way quicker;

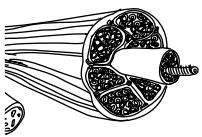
'In theory 10 embryonic stem cells could multiply up to 50.000.000 cells within two months. Because embryonic cells have an unlimited capacity to renew themselves, one production line could - in theory - feed the entire world. At this point certain production lines are only developed from mouse, monkey, rat and human cells while embryonic stem cells from livestock have the tendency to change into specialized neuron cells.'
- Bernard Roelen cellbiologist
Utrecht University

As Bernard Roelen points out, efficient production lines are so far only developed from mice, monkey, rat and human cells which is not a coincidence. These four species have so called pluripotent stem cells which means that they have the power to differentiate in any specialized cell they want. By definition pluripotent stem cells multiply faster and more efficient which would make it easier to grow a large number of skeletal muscle cells (and hence skeletal muscle protein) from those four species than from primary skeletal progenitor cells from pigs or cows. Also fat, cartilage, blood and vessel-cells (which are other important components of meat) are much easier to obtain from pluripotent stem cells than from

primary tissue. Theoretically seen it absolutely doesn't make sense that scientist are growing cow cells instead of mice cells. The production of in vitro meat from mice would be more efficient, therefore cheaper -and more animal friendly (faster production means less evaporation so less of Fetal Bovine Serum is necessary) After all, the goal of making in vitro meat from stem cells is to convert amino acids into proteins (see drawings below) Knowing this and the fact that in vitro meat has no taste and structure yet - it's bizarre that scientist can not do what's most efficient due to cultural and societal influences. The problem with in vitro meat from mice is that people will never buy it.

In August 2013, Mark Post introduced the first in vitro hamburger made from cow muscle cells. You could say that Mark Post applies the Albert Heijn method of gradually introducing something new to the public. Post however did not introduce a new ingredient, but a new production method in which he used cooking and eating as a medium to communicate this new technology to the public.

If meat consumers would be able to think more rationally about in vitro meat and see it purely as building blocks, (a replacement for animal proteins) and didn't care so much about the specie, scientific innovation and progress would go much faster!

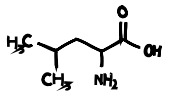


MUSCLE

MYOFIBRIL

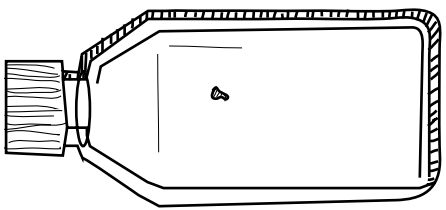
SACROMERE

PROTEINS



BCAA AMINO ACIDS

In vitro mice meat



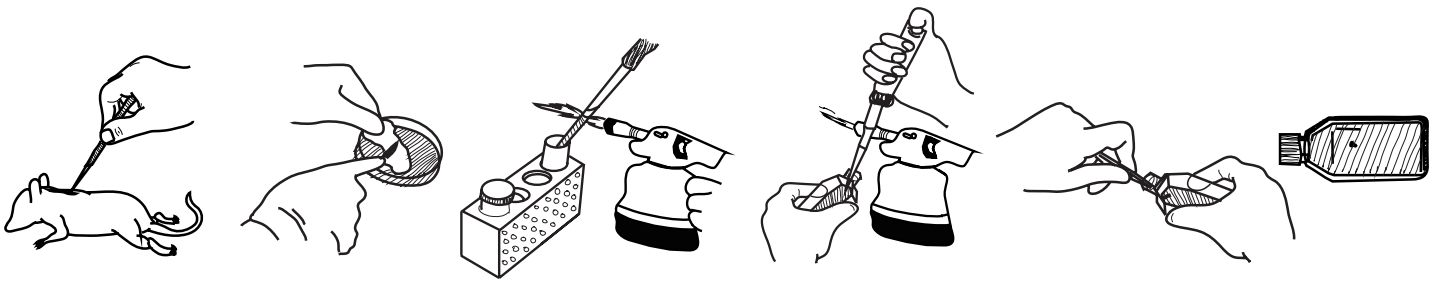
Ingredients

- 1 mouse 35 gr
- ethanol 70%
- ham's F12
- penicillin
- streptomycin
- distillate water
- bovine calf serum
- 5% CO2

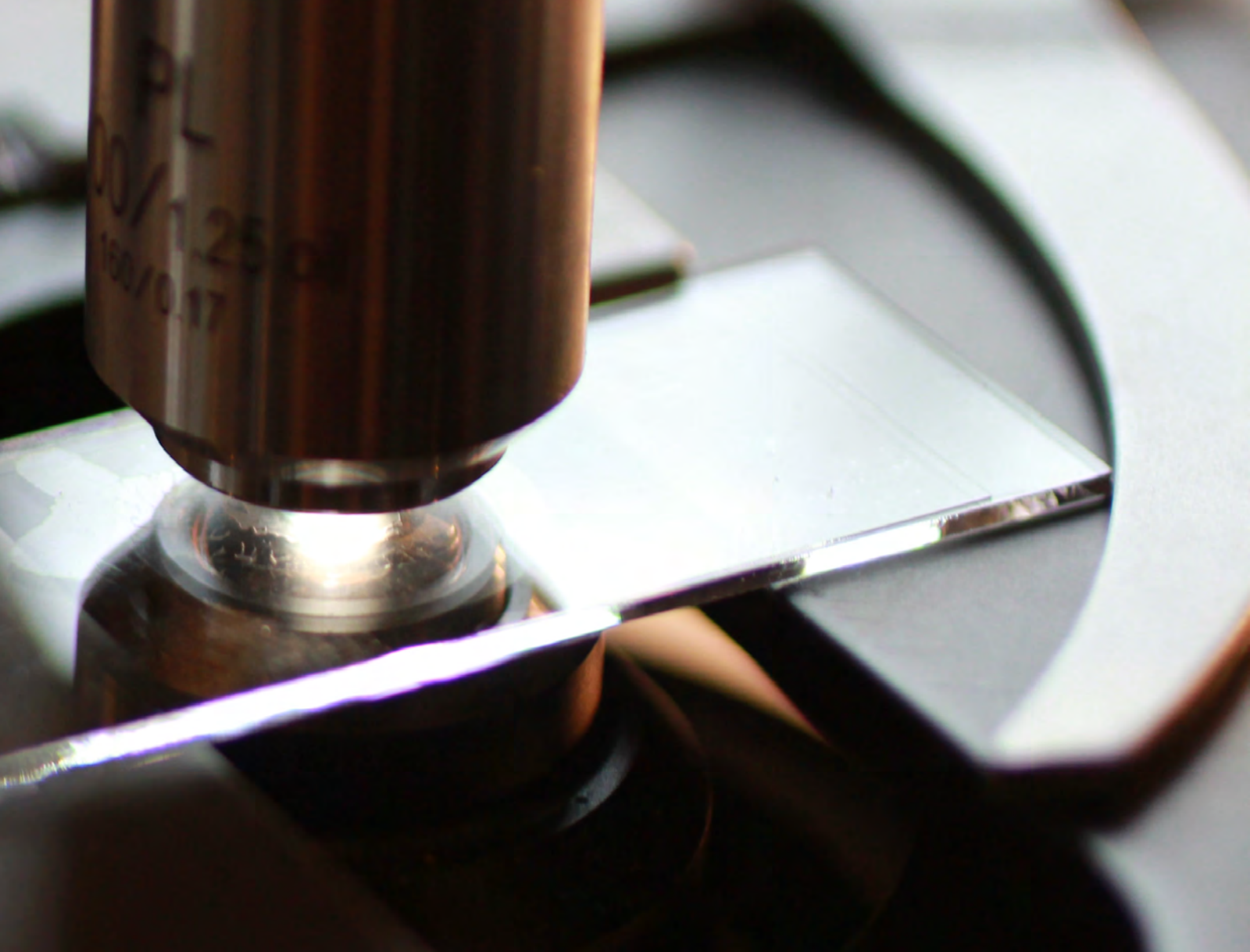
Materials needed

- petri dish
- coated grow flask
- very sharp scalpel
- scalpel blades
- nitrile gloves
- tweezers
- pipette
- pipette tips
- sterile hood (optional)
- pressure cooker
- paper towels
- disinfectant
- ethanol siphon
- torch
- lighter

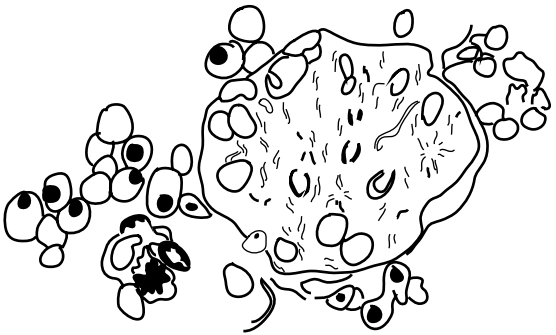
In vitro meat for consumption, and particularly in vitro meat made from mice, is still a future scenario. Winston Churchill predicted in 1931 - even before the second world war - that scientist in the future will exploit microbes to produce lab-grown meat just as bakers use yeast to make bread. Eighteen years later, in 1949, Willem van Eelen thought about something similar; protein rich food harvested like a crop, independent of climate and environmental circumstances without having to kill living organisms in the process. At this point, no scientist actually achieved making 'real' in vitro meat. In 2002 Morris Benjaminson grew a tissue culture of goldfish cells. Oron Catts and Ionat Zurr grew and tasted tissue culture from frog legs. And in 2013 the first in vitro hamburger made from myosatellite cells from cows was presented by Mark Post. This way of producing meat is still in development but might become a replacement for our current meat - perhaps.



Proper hygiene and sterile conditions are crucial to successful cell culturing. Wash your hands and sterilize your equipment by boiling it in a pressure cooker for at least 25 minutes. Use 70% ethanol to clean a workbench and move slowly to reduce the amount of airflow that might carry bacteria and fungi. Perform all procedures below as close to a flame as possible. Prepare the HAM's F12 medium by supplementing it with 5% penicillin & streptomycin antibiotics and 5% serum (preferably bovine calf serum). Allocate 10 mL of medium in three red capped 20 mL culture flask each. Label each flask with the letters E, S and K. Put on a pair of gloves and put the mouse in a petri dish. Using a sterile knife, start an incision from neck to tail. Three types of tissue need to be obtained 1) epithelial cells, which can be found in between organs and underneath the skin; 2) skeletal muscle cells; 3) kidney cells. Cut a small piece of tissue and transfer it into the culture flask with sterile tweezers. Incubate the tissue culture at 37° C in a 5% CO_2 incubator for at least 24 hours.



Under the microscope



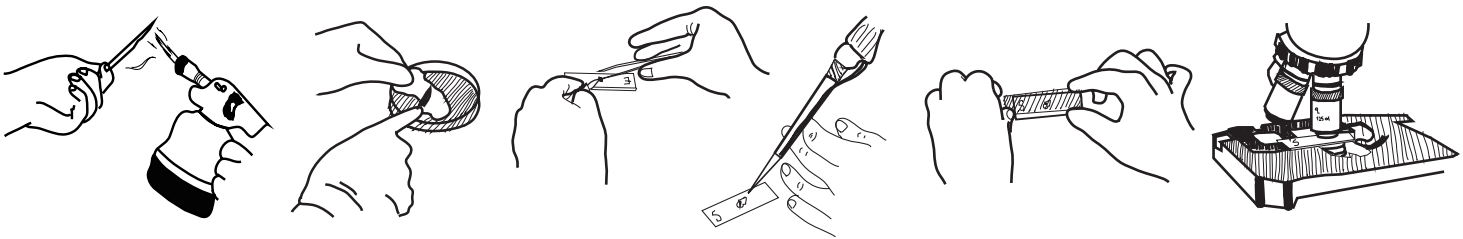
Ingredients

- cell layer of liver, epithelium and muscle from mouse
- in vitro mouse liver cells
- in vitro mouse epithelium cells
- in vitro mouse muscle cells
- formaldehyde solution
- microscopic oil
- blue stain solution
- ethanol

Materials needed

- electric microscope
- microscope slide
- cover glass
- torch
- tweezers
- pipette
- marker

Follow the microscope instructions and take a closer look at what you're actually growing in the tissue culture flask. How do epithelium, muscle and liver cells look like? 'Face' your own grown future meat. Make a drawing or picture of the cells and give it the name of the tissue. After 24 hours you placed the tissue culture flask in the bioreator, place a little bit of fluid from the tissue culture flask onto a microscope slide and cover it. Make sure you use a sterile pipette tip and hold a blue flame next to the flask when opening it! If you do this every few days and compare it under the microscope to the cells of the drawing, you can check if the cells are actually growing inside of the medium!



Put a piece of tissue on a fresh microscope slide. Take a micropipette to drop 5 µL of fixation solution (5% acetic acid) on top of the tissue. Place a cover slide on top of the sample. Make sure to trap as little air bubbles as possible. Magnify the sample 400x with a light microscope to observe the cell tissue. In order to stain the cell nuclei in the sample, stain it with a 50% solution of Methyl Blue. Be careful not to spill any dye on your hands, or wear gloves. Add 5 µL of staining solution to the sample and wait for 5 minutes. After 24 hours, use a sterile pipette and absorb 5µL of fluid from every tissue culture flask. Use new pipette tips for every flask. Drop the fluid on a microscope slide and place the cover slide on top, the same way as you did before. Use the sample slides next to the test slides to see whether cell division occurred.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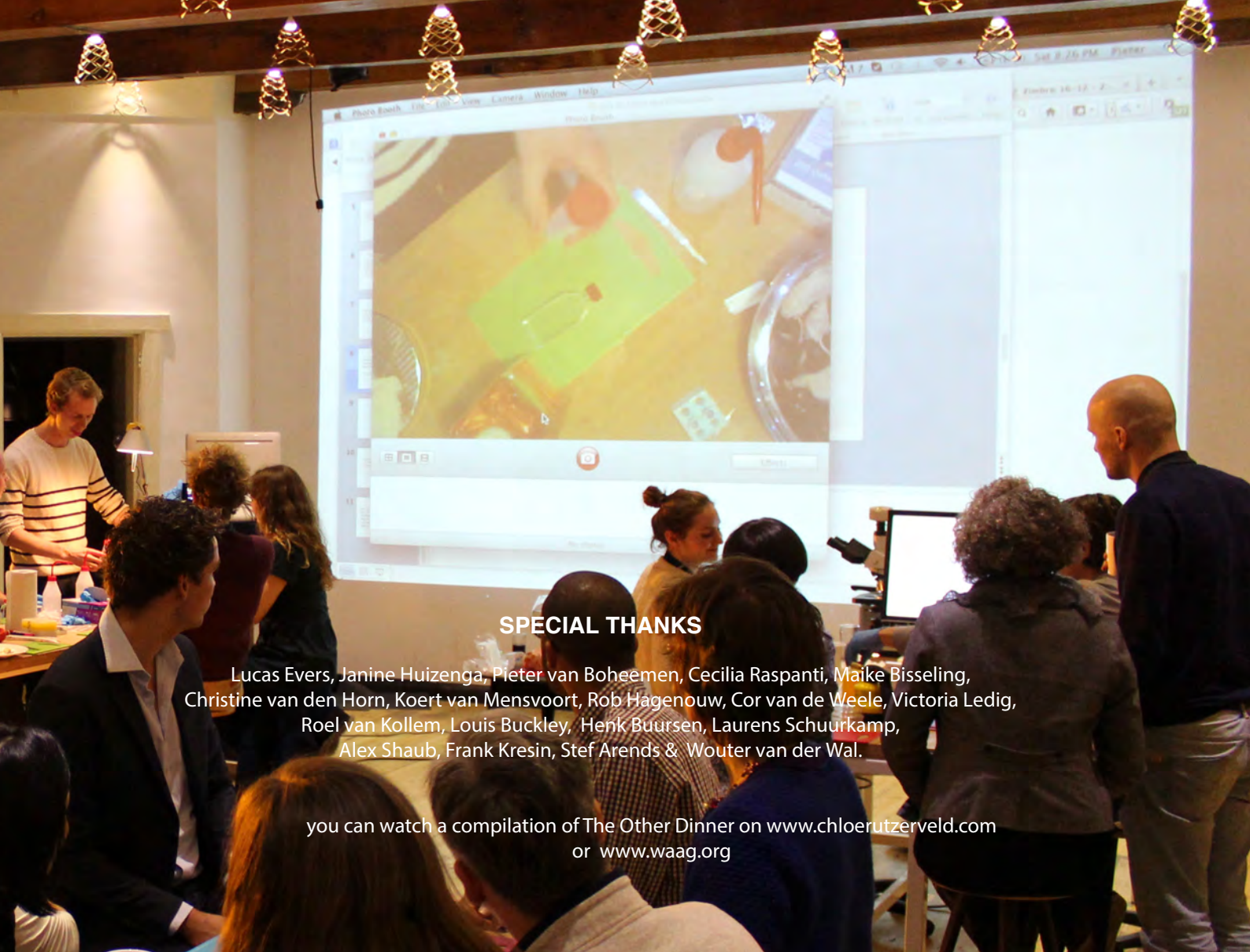

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you can watch a compilation of The Other Dinner on www.chloerutzerveld.com
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