



WATER LENTILS

DELICIOUS AND HEALTHY!

Cees Gauw & Yvonne Derksen



COLOFON

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WATER LENTILS

A FORGOTTEN VEGETABLE !



Already in the 17th century the wholesome activity of water lentils, or duckweed was extensively described in the first Dutch medicinal plant guide: the “Cruydt book” van Rembert Dodoens (Rembertus Dodonaeus, 1644). According to this Cruydt book water lentils (*Lemna minor*) can be successfully consumed or applied externally to treat a variety of ailments, such as headaches, inflammations, fractures and “overheating of the liver”.

Besides this it was also described as a very nutritious crop.

FOREWORD

THE IMPORTANCE OF PROTEIN



Our daily nutrition is comprised of three categories of so called macronutrients. These are carbohydrates (including sugars and starch), fats (from coconut and olive oil up to and including lard) and proteins (also referred to as proteins). Proteins assume a special place. Not only are they very important for supplying energy, as are the other two macronutrients, but they also have a role of keeping one's body healthy. Proteins supply amino acids to build new proteins for muscles and other tissues and organs. Some of the amino acids (branched chain amino acids) even stimulate the production of muscle tissue as a result of exertion or exercises. For this reason whey-proteins are recently receiving a lot of attention because of their high content of branched chain amino acids. Previously, whey was a residual waste product of the dairy industry, whose value was underestimated. Nowadays, whey-proteins and other proteins of animal origin are very much in demand. Within the food-world things gradually changed. Which is why it is very surprising that, unexpectedly, a 'new' protein source saw the light. Who could have thought that water lentils could deliver such nutritious and delicious recipes! Where in The Netherlands the food industry and the Biobased Business traditionally are separated, something valuable has originated here from a cross-fertilization of both industries. Right here, a wonderful combination of value-creation and sustainability was created. As well as other protein sources, water lentils turn out to be a rich source of branched chain amino acids. While humans have treated water lentils as a non-food crop for a long time, it turns out that this plant offers a fantastic alternative for the increasing demand for proteins with high biologic value. Vegetable proteins indeed have potential, and now it turns out that in an efficiently cultivated crop like water lentils that potential also enables a tasty future. Nelderduckweed, how green would you like it?

I congratulate Hans Derksen and his colleagues with this innovative breakthrough, and wish everyone a well-meant *bon appetit*.

Dr. Feike R. van der Leij

Professor Health & Food, VHL University of Applied Sciences

Teacher Health & Food, Food Academy, InHolland University of Applied Sciences

WATER LENTILS

AN UNDERAPPRECIATED CROP

Water lentils are an underappreciated crop. Even though, for centuries, South-east Asia has this crop as ‘water eggs’ on its menu and even though the FAO regularly reports about the potential of water lentils as a highly nutritious protein source, in Europe the cultivation and use of water lentils for human and animal consumption has never materialized. This is a pity, since water lentils (under Dutch circumstances) yields 20 ton of dry biomass per hectare per year and has a protein content of 30 to 40% on a dry weight basis. This works out to a yield of almost 10 times as much protein per ha per year as soybean, the world’s now most used plant protein source. A very interesting observation, given the strongly growing demand for (vegetable) proteins in Europe, as well as in the rest of the world

ABC Kroos BV, in public-private corporation with companies like Colubris BV, research institutes like VHL University of Applied Sciences and Wageningen University and Research Centre, and with the support of the Dutch provinces of Gelderland and Overijssel, started the cultivation and processing of water lentils to high protein products. The application of water lentils as such for nutrition is one route, but the production of pure protein, with for food formulations interesting functional properties is another. This last option, whereby plant proteins from water lentils as ingredient can replace animal proteins turns out to be both economically as sustainably a very attractive proposition.

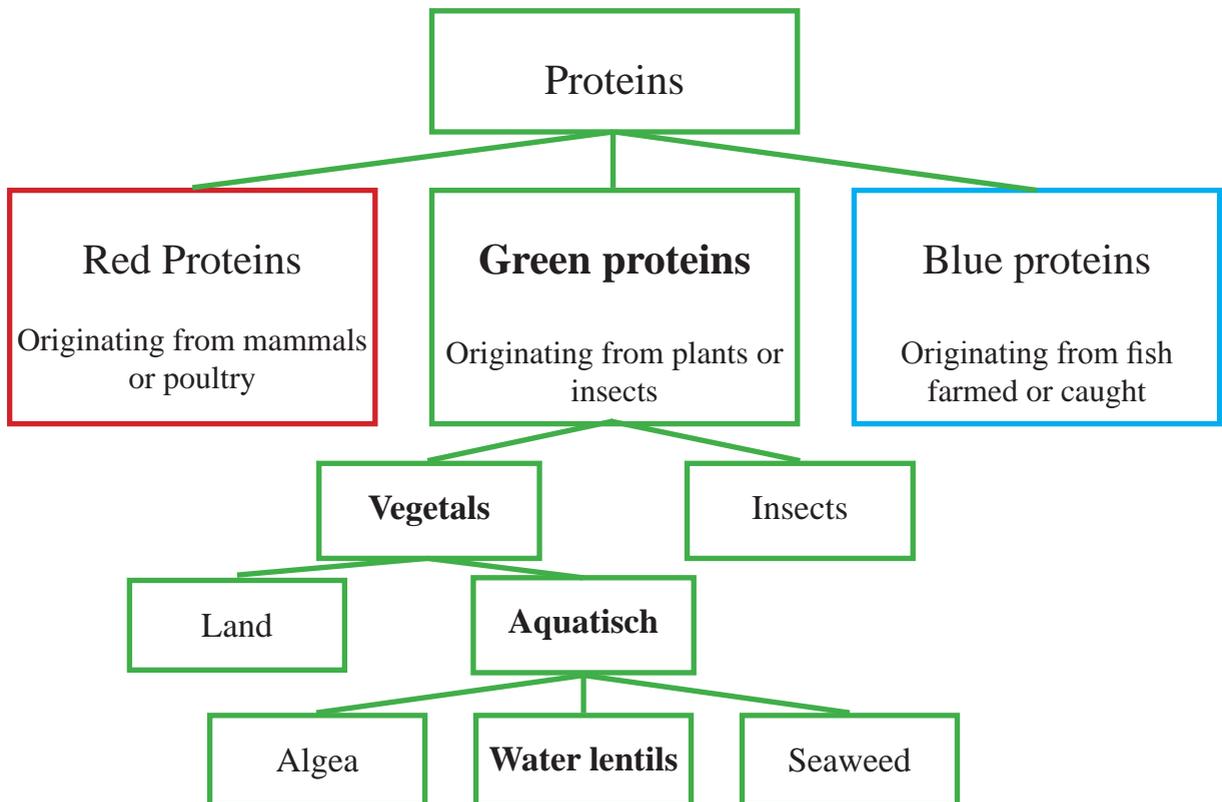
This booklet is intended to promote a wide (re)introduction of this promising crop and provides a number of delicious recipes based on water lentils, including a practical guide to grow your own water lentils for personal use in a safe manner.

Enjoy your meal!

Dr. Hans Derksen
Professor Biobased Economy
VHL University of Applied Sciences
Partner ABC Kroos BV

GREEN PROTEINS

There are countless protein sources. Meat, fish, dairy, vegetables, insects, algae, mushrooms, all contain proteins. Some more than other. A distinction can be made between Red Proteins, Blue Proteins and Green Proteins. In Red Proteins, proteins find their origin in mammals or poultry (meat). Blue Proteins are originating from fish. Green Proteins is a collective name for more sustainable proteins. The biggest benefit is that the production of Green Proteins puts less pressure on farmland. Therefore they have a big potential with respect to the sustainability of the protein production and consumption. That is also why worldwide there is a lot of interest in Green proteins as a way to ensure a structural world food supply. With Green Protein solutions, it becomes a lot easier to provide high protein food for more than 9 billion mouths in 2050. Green Proteins are of vegetable or animal (e.g. insects) source. Vegetable proteins are cultivated on land or in water (aquatic). Examples are seaweed, algae and water lentils.





TYPES OF WATER LENTILS

Water lentils is a fast growing plant- species with a very high protein content. This makes the plant an ideal crop for food production and use in various dishes. In the Netherlands six species of water lentils are common. They all have a very different, special taste.



LEMNA MINOR

The most common water lentil in the Netherlands. It has a diameter of 2-5 millimeter and has an oval and flat shape.



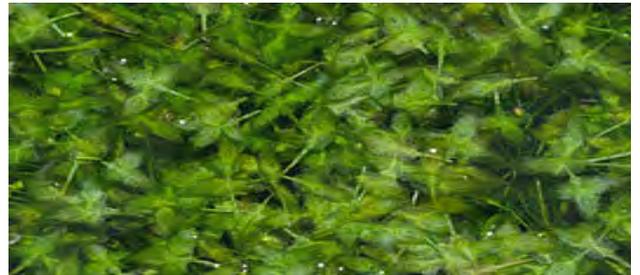
LEMNA GIBBA

Lemna gibba is one of the most common water lentils in the Netherlands. Just like *Lemna minor* it has a diameter of 2-5 millimeter and is oval shaped. In contrast to *Lemna minor*, *Lemna gibba* has a more rounded profile.



LEMNA MINUTA

Lemna minuta is the smallest species of *Lemna* in the Netherlands, and has a diameter around 2 millimeter.



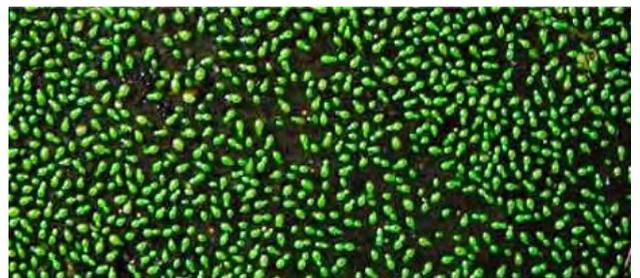
LEMNA TRISULCA

Lemna trisulca is a *Lemna* species that normally grows underwater. It has a pointed shape.



SPIRODELA POLYRHIZA

Spirodela polyrhiza is one of the biggest species of water lentils you can find in the Netherlands. It often has multiple roots and a red underside.



WOLFFIA ARRHIZA

Wolffia arrhiza is the smallest species of water lentils. *Wolffia arrhiza* has small leaves in the shape of an egg. It has no roots. The diameter is around 0.5-1.5 millimeter. *Wolffia arrhiza* is known for its nutty flavor.



HOW HEALTHY ARE WATER LENTILS

In order to live and grow all organisms need to produce proteins. Proteins consist of amino acids. Humans can make some of these themselves from, for example, carbohydrates and fats. Other amino acids, the so-called essential amino acids, are the ones we can't make ourselves and must therefore be included in our diet.

The table below provides an overview of essential amino acids and the proportion in which they occur in some food proteins. Also the recommended amino acid composition of protein in human nutrition according to the WHO / FAO is given.

	Recommended min. content ¹ (adults) (mg/g protein)	Water lentils ² (mg/g protein)	Milk ³ (mg/g protein)	Beef ³ (mg/g protein)	Soy ³ (mg/g protein)	Whole grain ³ (mg/g protein)
Lysine (Lys)	45	80	83	89	60	23
Branched chain amino acids (BCAA) (Val+Leu+Ileu)	128	246	225	182	166	141
Sulfur-containing amino acids	22	37	32	36	24	36
Histidine (His)	15	31	28	44	25	21
Threonine (Thr)	23	57	51	47	40	28

- 1) *FAO report 92: Dietary protein quality evaluation in human nutrition (2011).*
- 2) *Native Lemna minor protein such as process won by ABCKroos BV. Analysis by Nutricontrol Veghel (2014)*
- 3) *FAO / WHO / UNU Expert consultation (2013).*

The table shows that all the above food products, other than whole grains, are a full source of protein for human nutrition. However, water lentil protein scores much better on essential amino acid content than soy and whole grain protein, and can even be compared with animal protein (meat and milk). Particularly the content of branched-chain amino acids (“Branched Chain Amino Acids”), required for muscle building, is higher than even milk or beef protein. Especially for people who benefit from a protein enriched diet, such as growing children, athletes and seniors, water lentils are an interesting source of high-quality vegetable protein.

GROWING MANUAL WATER LENTILS



For personal use we recommend to grow water lentils in clean water.

Water lentils grow outside from around March to September. Reasonably clean, bright-green, water lentils, preferably *Lemna minor* or *Lemna gibba* (see page 12) can be obtained from nature between April and August.

Choose the place where you'll get water lentils with care: obtain water lentils where you don't expect pollution in the water. So, for example, not along fields where pesticides are sprayed, not along the edge of a high traffic road, not on industrial plots where waste water is discharged, nor along trails where dogs are walked or places that you otherwise do not trust.

Wash the water lentils several times gently with tap water at room temperature and then grow it in clean water in a (plastic) covered container.

Bets

Fill a dark plastic container, up to 20 cm with tap water to about 2 cm below the edge. Add water lentils until no water is visible between the plants. (The plants must lightly touch each other)
Put the container at a bright spot in the house or in the garden, but preferably not in full sunlight and not above a heater. The plants have to get used to the new conditions and don't need additional nutrients or fertilizer for the first week.

Care

Make sure to check every week if there is enough water in the tank and if the tank is not too hot. The water temperature must not rise above 30°C. As soon as the plants start to grow you can add around 2,5 ml Pokon (or similar fertilizer with NPK=7:3:7 and micro-nutrients) per 10 liters of water. Or use around 20 ml N/l of a different plant fertilizer. If the water lentils grow very fast you can also decide to double the amount of fertilizer. If there are algae in the water you can remove those by replacing the water.

Harvest

Harvest a portion of the plants but leave enough behind to cover all of the water. After you harvested the water lentils they have only limited shelf life. Wash the water lentils with tap water and use a salad spinner to remove excess water.



RECIPES

These recipes are intended to inspire you on the versatility of water lentils.



Photo Trineke Bakker

WATER LENTILS SALAD

WATER LENTILS CAN BE MIXED IN DELICIOUS SALADS. THIS SALAD IS QUICK AND EASY TO MAKE AND CAN BE SERVED AS LUNCH BUT ALSO AS A FRESH MAIN COURSE OR SIDE DISH.

FOR 2 PERSONS

COOKING TIME

5 MINUTES

INGREDIENTS

- 100 GRAMS OF WATER LENTILS
- 100 GRAMS OF YELLOW, RED AND ORANGE TOMATOES
- A LITTLE BIT OF SOFT GOAT CHEESE
- 50 GRAMS OF BACON
- A HANDFUL OF CHIVES
- 2 TABLESPOONS OF SUNFLOWER SEEDS
- 1 TEASPOON OF LEMON JUICE

PREPERATION

Fry the bacon and sunflower seeds briefly with olive oil in a skillet. Meanwhile, cut the tomatoes into parts and cut the chives small. Put the tomato parts and chives into a bowl with the goat cheese. Take the bacon and sunflower seeds from the burner and add them to the salad. Put the water lentils in the bowl and sprinkle the salad with lemon juice.



MINISTRONESOUP

THIS MINISTRONE SOUP IS PERFECT AS A STARTER DISH, BUT ALSO AS A MAIN COURSE. A MINISTRONESOUP IS A SOUP WHERE ONE CAN EASILY VARY WITH THE INGREDIENTS. IN THIS SOUP WATER LENTILS CAN EASILY BE COMBINED.

FOR 4 PERSONS
COOKING TIME

30 MINUTES

INGREDIENTS

- OLIVE OIL
- 1 ONION
- 800 GRAMS OF CANNED TOMATOES
- 1 HANDFUL OF PASTA
- 1 CAN OF WHITE BEANS
- 100 GRAMS OF WATER LENTILS
- 200 GRAMS OF VARIOUS VEGETABLES
(FOR EXAMPLE: LEEK, CARROT, ZUCCHINI)
- 1 HAND OF BASIL

PREPERATION

Minestrone soup is a soup that can have a lot of ingredients, such as water lentils. Feel free to vary in this recipe and add what you want. Put a large pot on the fire. Chop the onion and fry it in a little olive oil until it is translucent. Add the vegetables and water lentils and bake them briefly. Add half a liter of vegetables and 800 grams of chopped tomatoes. Wait until it boils. Add a hand of pasta and a drained can of white beans. Wait until the pasta is cooked. Season the soup with salt, pepper and basil.



SPRING ROLLS

THESE SPRING ROLLS ARE PERFECT AS A PARTY-SNACK: TO SHARE OR TO TAKE WITH YOU. ALSO THEY ARE THE PERFECT SNACK FOR A COUGH-NIGHT. DO YOU JUST WANT TO EAT YOUR SPRING ROLLS DURING SUPPER? FINE! EASY TO COMBINE WITH RICE!

FOR 20 SPRING ROLLS

COOKING TIME

40 MINUTES

INGREDIENTS

- 500 GRAMS OF FRESH WATER LENTILS
- 250 GRAMS OF MUSHROOMS
- 120 GRAMS CHINESE CABBAGE
- 1 LARGE GARROT
- 100 GRAMS OF BEAN SPROUTS
- ONE PIECE OF GINGER
- 2 GARLIC CLOVES
- 1 TEASPOON OF SOY SAUCE
- 1 TEASPOON OF SESAME OIL
- 2 DINNER SPOONS OF RICE WINE
- 1 TEASPOON OF CORNSTARCH
- 20 SPRING ROLL DOUGHS
- OLIVE OIL
- SUNFLOWER OIL
- 1 EGG YOLK

PREPERATION

Cut all the vegetables in small parts. Heat a wok pan on high fire and add some olive oil. Bake the mushrooms, the garlic and the ginger shortly. Add the water lentils and bake the whole. Add the cabbage and carrot with two dinner spoons of rice wine, soy sauce, cornstarch and sesame oil. Bake the whole one minute. Add the bean sprouts and bake everything until the bean sprouts are completely cooked. Season with salt and pepper. Take the pan of the fire and drain everything in a colander.

Spread about two dinner spoons of vegetables over one spring roll and roll partly. Turn the sides and cover the ends with a little bit of egg yolk. The better the spring rolls are packed, the less the oil will splash.

Fill a pan for 1/4 part with sunflower oil and heat it slowly. The oil is hot enough when a piece of bread will bake crusty within 10 seconds. Put a couple of spring rolls into the pan and bake them for about 5 minutes until they are gold/brown of color. Take the spring rolls out of the pan and put them on a paper towel until they are drained of fat. Repeat these steps until you've baked all the spring rolls.

Serve the spring rolls with some sweet chili sauce.



Photo Trineke Bakker

WATER LENTILS QUICHE

THIS QUICHE OF WATER LENTILS IS DELICIOUS AND EASY TO COOK FOR DINNER. THIS QUICHE IS QUICKLY A FAVORITE DISH OF PEOPLE OF ALL AGES, AS IT IS SO LIGHT. THE QUICHE IS A PERFECT DISH FOR IN THE SUMMER, BUT IS ALSO DELICIOUS AS A DISH FOR HOLIDAYS!

FOR 2-4 PERSONS

COOKING TIME

50 MINUTES

INGREDIENTS

- 200 GRAMS OF FRESH WATER LENTILS
- A FEW SLICES OF FILO DOUGH
- OLIVE OIL
- 1 UNION
- 1 CLOVE OF GARLIC
- 50 GRAMS OF SUNDRIED TOMATOES
- 1 PEPPER
- 4 EGGS
- 50 GRAMS OF GRATED CHEESE
- 50 GRAMS OF GOAT CHEESE
- FRESH BASIL

PREPERATION

Preheat the oven on 200oC and defrost the filo dough. Grease a quiche tin with olive oil and spread the filo dough into the tin.

Heat a wok pan on low heat and add a little olive oil. Add the onion and garlic in the wok and cook for a while. Then add the pepper, sundried tomatoes, the water lentils and the stems of the basil and bake a few minutes until it is cooked.

Mix the eggs with the cheese and the basil leaves and add the mixture to the vegetable mix. Stir together and spread the mixture over the filo dough in the quiche tin. If necessary fold back the edges of the dough.

Put the quiche in the oven for about 30 minutes.



WATER LENTILS BURGER

A BURGER IS EASY TO COMBINE WITH MANY DISHES. IN THIS BURGER WATER LENTILS ARE USED, WHICH MAKES IT EXTRA HEALTHY TO EAT. IN THIS RECIPE THE BURGER IS COMBINED WITH A GOOD PASTA MEAL.

FOR 4 PERSONS

COOKING TIME

30 MINUTES

INGREDIENTS

- 2 TEASPOONS OF SUNDRIED TOMATOES
- 2 TEASPOONS OF CAPERS
- 1 RED ONION
- 100 GRAMS OF CANNED CHICK PEAS
- 50 GRAMS OF WATER LENTILS
- 1 CLOVE OF GARLIC
- 1 OR 2 EGGS
- 1 TEASPOON OF CONDIMENT
- 1 HAND FULL OF BREAD CRUMBS

PREPARATION

Slice all the vegetables and mix everything together with the sambal. Add one or two eggs and mix until it is one creamy paste. Add a little bit of bread crumbs so the paste becomes malleable. Hand shape nice thin burgers of the paste and put them aside.

Put a frying pan with a little bit of olive oil on a mid-high heat and let the pan become warm. Gently place the burgers in the pan and bake them on both sides for about 5 minutes.

If the burgers fall apart this can be solved by using baking shapes or similar utensils.



WATER LENTILS CURRY

WATER LENTILS CAN ALSO BE USED FOR SPICIER, FOREIGN DISHES. HERE WATER LENTILS ARE USED IN A CURRY DISH WITH GINGER AND TOMATOES.

FOR 4 PERSONS

COOKING TIME

50 MINUTES

INGREDIENTS

- 700 GRAMS OF WATER LENTILS
- OLIVE OIL
- 1 BIG ONION
- FRESLY CHOPPED GINGER ROOT
- 2 GARLIC CLOVES
- 1 CAN OF PEELED TOMATOES
- 200 ML COCONUT MILK
- 4 CLOVES
- 2 CARDAMOM PODS
- 1 CINNAMON STICK
- 1 SMALL DRIED CHILI PEPPER
- 4 CURRY LEAVES
- 1/2 TEASPOON OF CORIANDER SEEDS
- 1/2 TEASPOON OF CUMIN
- TEASPOON OF BELL PEPPER (PAPRIKA) POWDER
- 500 GRAMS RICE

PREPERATION

Fry the water lentils briefly in a pan with olive oil and put them aside. Cut the onion and the garlic into pieces and add them with the ginger into a pan. Cook over low heat until the onion becomes transparent. Add the tomatoes and coconut milk and then add the spices to taste. Leave everything simmer on low heat for about 20-25 minutes. Meanwhile heat a pan filled with water. Add the rice to the boiling water and leave it boil for about 10 minutes.

Take the curry off the heat after 20-25 minutes and mix it with the fried water lentils. Serve the curry with the cooked rice.



Photo Trineke Bakker

STEW OF WATER LENTILS AND BACON

A TRADITIONALLY DUTCH DISH WITH A TWIST: WATER LENTILS ALSO TASTE VERY GOOD IN A STEW. THIS STEW IS GOOD FOR A FULL DINNER, RICH OF CARBOHYDRATES, VITAMINS AND FATS.

FOR 4 PERSONS

COOKING TIME

25 MINUTES

INGREDIENTS

- 300 GRAMS OF FRESH WATER LENTILS
- 500 GRAMS OF POTATOES
- 100 GRAM OF BACON
- 1 FRESH SAUSAGE
- 1 TABLESPOON OF MUSTARD
- 1 OR 2 EGGS
- OPTIONALLY BUTTER OR MILK

PREPERATION

Peel the potatoes and boil them for 15 minutes until they are “al dente”. Boil the eggs and peel them. Meanwhile, fry the bacon and the sausage. Drain the potatoes after 15 minutes and add the bacon, a little bit of shortening, mustard and eggs and mash everything.

Spread the water lentils over the potato mix while the stew is still hot. Mash the mix briefly.

Use the remaining of the shortening of the sausage to make some gravy by pouring a little water or wine into the pan and cook it on high heat. Stir well in the meantime.

Serve the stew with the sausage and the gravy.



CARROT AND WATER LENTILS PIE

EVEN FOR A GOOD PIE WATER LENTILS ARE A GOOD INGREDIENT. IN THIS RECIPE A CAKE OF CARROT AND WATER LENTILS IS MADE!
A VERY GOOD COMBINATION, EVEN IF YOU MIGHT NOT HAVE GUESSED IT YOURSELF!

FOR 12 PIECES OF PIE
COOKING TIME

90 MINUTES

INGREDIENTS

PIE:

- 200 GRAMS OF WATER LENTILS
- 200 GRAMS OF CARROTS
- 4 EGGS
- 300 GRAMS OF FLOUR
- 250 GRAMS OF SUGAR
- 185 ML OF SUNFLOWER OIL
- 50 GRAMS OF WALNUTS
- 1 BAG OF BAKING POWDER
- 2 TEASPOONS OF CINNAMON
- ONE HALF TEASPOON OF SALT

ORANGE

FROSTING:

- 50 GRAMS OF BUTTER
- 50 GRAMS OF ICING SUGAR
- EEN COUPLE OF BASTOGNE COOKIES

PREPERATION

Cake:

Grate the carrots. Beat the eggs and add the sugar. Mix the flour, the salt, the baking powder and the cinnamon. While stirring, add the oil. Keep stirring until the mixture is nice and smooth. Grate the orange peel and add this with the walnuts to the mixture. Divide this batter into two bowls. Add in one bowl the grated carrots and in the other the water lentils. Mix both bowls separately.

Grease a baking mold and pour the batter of carrot into it. Spread it in a smooth layer over the bottom of the baking mold and pour the water lentils batter into the prepared tin, spread it completely.

Put the baking mold in the oven for about 1 hour. When you stick a wooden pick into the cake without uncooked batter sticking to it, the pie is cooked. Remove the baking mold from the oven and let the cake cool to room temperature.

Icing:

Beat the butter in a food processor until the mixture is fluffy and white. Now add to it the powdered sugar and whisk again.

Cut the cake horizontally in half with a large kitchen knife and place the top layer on the side. Spread the bottom layer thinly with a butter mixture. Place the upper part of the pie gently on the bottom part.

Now Spread the entire cake lightly with the butter mixture until the cake is no longer visible.

Crush the bastogne cookies and sprinkle the crumbs over the cake.

8 X WATER LENTILS JUICE

WATER LENTILS CAN ALSO BE USED FOR MAKING A FUN, ALTERNATIVE AND PROTEIN RICH JUICE. U CAN USE FOR EXAMPLE A SLOW JUICER, BUT A FOOD PROCESSOR CAN ALSO BE USED. THE WATER LENTILS ARE USUALLY TOO SMALL FOR A NORMAL SAP JUICER.



ORANGE ABOVE

INGREDIENTS

- 30 GRAM WATER LENTILS
- 1 CARROT
- 1/2 APPLE
- 1 TEASPOON OF CINNAMON

FRESH AND FRUITY

INGREDIENTS

- 30 GRAM WATER LENTILS
- 1/2 APPLE
- 1 CUCUMBER
- 1 PIECE OF GINGER

BREAKFAST SMOOTHIE

INGREDIENTS

- 30 GRAM WATER LENTILS
- JUICE OF 1/3E LIME
- 1 PEAR
- 1 PIECE OF GINGER

WATER LENTIL TEA

INGREDIENTS

- 20 GRAM WATER LENTILS
- 1 TEA-BAG

PURE WATER LENTILS JUICE

INGREDIENTEN

- 80 GRAM WATER LENTILS

GREEN MONSTER

INGREDIENTS

- 30 GRAM WATER LENTILS
- 1 CUCUMBER
- 1 PIECE OF GINGER

RED DEVIL

INGREDIENTS

- 30 GRAM WATER LENTILS
- 1 TOMATOE
- PEPPER AND SALT
- TABASCO

FRUIT SHAKE

INGREDIENTS

- 30 GRAM WATER LENTILS
- 1/2 APPLE
- 1 PEAR
- 1 GINGER

ABC KROOS BV

ABC Kroos BV is a young Dutch company that has developed a technology to produce high, non-denatured, soluble protein from fresh green leafy biomass; green protein.

One of the forms of green protein ABC Kroos BV produces comes from water lentils. Water lentils is the term used for duckweed, cultivated under controlled and food-grade conditions.

ABC Kroos is committed to developing the water lentil value chain and aims to sell its protein products as a functional ingredient in formulated food products for human consumption. ABC Kroos has a pilot plant in Groenlo, The Netherlands.





VHL UNIVERSITY OF APPLIED SCIENCES

VHL University of Applied Sciences, located in Leeuwarden and Velp, offers bachelor and master level courses that focus on nature and environment, human health and animal health and responsible entrepreneurship. Combinations of these areas provide specific and challenging programs, that are unique in the world.

The research group Biobased Economy of VHL University develops education in the area of the responsible use of biomass in an circular economy. Its research is focused primarily on the development of value chains around the cultivation and processing of aquatic biomass such as duckweed, seaweed and algae, and on the development of biorefining technologies to sustainably improve the use of agro-food derived biomass and residuals.

OVER DE AUTEURS

Cees Gauw MSc studied Plant sciences at the Wageningen University

& Research Centre. After his study Cees Gauw developed 'Sustainable Lab' and started working as an advisor in 'agricultural, biodiversity and sustainability solutions'. Besides that Cees Gauw is working with passion and fun as a lecturer of Horticulture and Arable agriculture at VHL University in Leeuwarden.

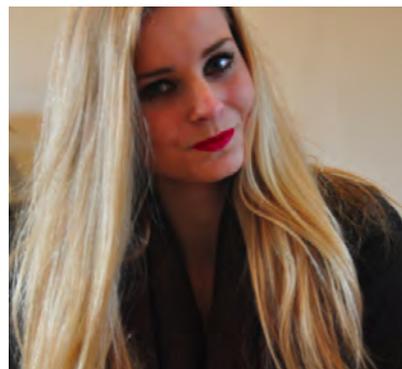


Over the last three years Cees Gauw has specialized himself in the cultivation of water lentils at VHL University. As a scientist and as a teacher he researches breeding methods and applications that this crop has to offer, including water lentils as bio-based feedstock, but mostly water lentils as a raw material for the food industry. Cees Gauw is recognized internationally for his research on water lentils.

To put this crop and VHL University on the map Cees participated on a voluntary basis with ABC Kroos to provide recipes with water lentils. He hopes that this approach will inspire many people and that this will motivate students to examine crops from different perspectives and from a creative approach.

Yvonne Derksen studied Communications at the HAN University of Applied Sciences in Nijmegen. At this moment she is working at ABC Kroos BV as communications strategist. She has developed a communication plan for the company.

Yvonne has helped with writing the book Water lentils; delicious and healthy. She has also been responsible for the design and layout of the book.



Since 2014 Yvonne has developed herself as a professional travel

blogger. She is the founder and editor of travel blog The Tourist Of Life. At this website she daily writes articles about worldwide destinations, travel tips and travel information. In order to write these articles Yvonne travels the world. Yvonne also writes articles on a freelance base for several websites and blogs.

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