



Dear Reader,

When the Austrian documentary screenwriter and director Renate Ingruber came to me in early 2013 and told me she wished to make a documentary about Moringa, I was naturally delighted.

Although Moringa has been used for thousands of years, it is still very little known in our own latitudes. Almost every day I receive enthusiastic descriptions of people's experiences with it from all over Europe. I am particularly pleased that in this documentary there is an explanation by a doctor about why the substances Moringa contains are so beneficial for our health.

First and foremost, I consider Moringa to be a food-stuff. Experience shows that good nutrition can also help protect against illness and can be beneficial during illness. There are so many positive effects to Moringa and so many beneficial substances within it that I would like to go into more detail about some aspects.

Moringa, the absolute marvel of nature! Moringa, the miracle-tree

Good health is not everything, but without it everything is nothing.

Hundreds of studies carried out all over the world provide evidence of the health-giving properties of this Ayurvedic plant and are causing more and more people to be amazed. More than 300 applications are known to be treatable with this „wonder tree“, from general debility through high blood pressure to osteoporosis and diabetes. In Ayurvedic medicine its healing powers have been known for millennia.

Moringa contains, for example

- 17 x more calcium than milk
- 15 x more potassium than bananas
- 7 x more vitamin C than oranges
- 7 x more vitamins B1 and B2 than yeast
- 6 x more polyphenols than red wine
- 6 x more folic acid than lamb's lettuce
- 4.5 x more vitamin E than wheat seedlings
- 4 x more vitamin A than carrots
- 2.5 x carotene than carrots
- 2 x more magnesium than brown-top millet
- 2 x more protein than soya
- 2 x more roughage than whole-grain wheat
- 1.5 x more zinc than an escalope of pork
- 1.5 x more essential amino acids than eggs
- All 20 amino acids, including the 8 essential amino acids
- High proportions of unsaturated fatty acids (Omega 3, 6 and 9)
- Large quantities of natural chlorophyll

Practically all of these substances are found in the leaves; the seeds can purify water for drinking and also provide the most stable and valuable oil known in nature.

The fruits can be used as a vegetable or added to curries. Its roots can also be used as a vegetable or even as 4 horseradish. Called the „Wonder Tree“ or the „Tree of Long Life“ because of its many benefits, all parts of the Moringa tree are used in medicine and above all as a source of nutrition of the highest quality. More nutrients are present in the leaves, and in general in higher concentrations than in any other known vegetables. The leaves can be eaten in salads or as a vegetable, or used as a spice.

The roughage, enzymes, fatty acids, minerals, proteins, phytoamines and vitamins are ideally combined by nature and provide an optimal supplement to our daily nutrient intake.

The combination and composition of the nutrients are highly concentrated, balanced and unique. Moringa also contains an exceptional number of minerals such as potassium, calcium, magnesium and phosphorus, plus sufficient quantities of chromium, iron, zinc and copper, to name just a few. Additionally, all 20 amino acids are present – the most important components for building proteins in the body and equally important for our immune system. Moringa oleifera also contains almost all vitamins, including vitamins A, B1, B2, B3, B6, B7, C, D, E, K and vital substances, over 46 antioxidants and also the recently discovered plant hormone zeatin, which is present here in higher quantities than in any other plant in the world.

ZEATIN: Zeatin gives the plant its exceptionally fast growth and its outstanding capacity to regenerate - which can be passed on to humans. It has been described by Professor Thomas Roitsch of the University of Würzburg as „Nature's hormone of the Fountain of Youth“. Studies at the University of Aarhus (Denmark) have demonstrated that it is particularly effective in treating skin damage. Zeatin promotes a youthful skin, slows cell ageing and activates the body's own production of substances that keep the skin young and elastic. Additionally, this plant hormone is helpful to girls in puberty and to women during menopause in maintaining their hormone balance. Among other things, Zeatin opens the doors for vital substances and takes them to the places where they are required by the cells. In effect, zeatin ensures that all the vitamins, minerals, trace elements and amino acids are taken up by the body. Zeatin is an important regulator of cells and at the same time is a strong antioxidant that protects cells and helps them to regenerate.

While zeatin can be found in many plants, it is normally present only in less than one microgram per gram. The Moringa leaf, by contrast, contains over a hundred times as much per gram – and is thus a real „fountain of youth“. Thanks to these extensive yet balanced nutrients, Moringa can provide energy, vitality and fortitude. It is like a power pack for youthful energy, appeal and emotional equilibrium. This brings us to another of Moringa's merits, for which the tree also has another name. It is sometimes called the „Green Diamond“ because its phenomenal nutrient content is unparalleled in the world.

So Moringa is not only a vitamin bomb containing 90 different and valuable vital substances for humans; it also boosts bio-availability many times over thanks to the zeatin content.

MANGANESE, CHROMIUM AND BORON: Another unusual feature of Moringa is its high content of manganese, chromium and rare boron. Manganese is important for joints and bones, while chromium plays a central part in metabolism and during conditions of stress. Until recently boron was not included in the group of essential trace elements, but in recent years its importance has become more and more evident: boron is vital to the production of the amino acid serine, which is contained in almost all proteins of the human organism. Boron is important for the calcium, magnesium and phosphorus balance and is used medically for treating osteoporosis. It reduces oxidation caused by stress, inhibits the division of cells without differentiation (e.g. cancer cells) and is the trace element that is most commonly found in the brain. In element form boron is toxic, and therefore only plants with a high boron content – and particularly Moringa leaves, which with 31 milligrams boron per 100 grams are the most concentrated carrier of it – can meet the need for it. Large quantities of organic boron compounds are contained only in quinces (approx. 10 mg per 100 g), almonds (3.4 mg) and beetroot (2.1 mg per 100 g).

SALVESTROLS*: Moringa oleifera contains salvestrols. These are a group of agents discovered and researched by British scientists. Salvestrols are a class of protective agents formed in some plants as defence against diseases. It is these agents, claim the scientists, that cause cancer tumours to regress. A hundred years ago, original strains of fruit and vegetables that had to defend themselves against enemies of all kinds, contained salvestrols in abundance. Modern fruit and vegetables, however, are grown on sterile plantations using artificial fertilisers, and they contain almost no salvestrols. Moringa oleifera leaves are rich in these salvestrols and for this reason alone are to be recommended.

**Salvestrols are the name given to certain special secondary phytochemicals that form part of the natural defence mechanisms of plants. They always form when the plant is attacked by pathogens. If, say, a fruit is attacked by a fungus, the plant forms a salvestrol specific to this pathogen. It is found in the rind of the fruit and particularly in the area close to the attack. We need exactly the same protective substances in our own nutrition as do plants in order that our own organism can defend itself - and in particular against the threat of cancer. If modern-day plants*

are sprayed with fungus, however, the plants cease to generate their own protective agent. It follows that today's plants contain almost no salvestrols. It is interesting that the number of cancer cases has increased almost directly parallel to the introduction of modern industrial agricultural methods.

CHLOROPHYLL: A kilogram of (dried) Moringa leaves contains almost seven grams of pure chlorophyll, the substance that colours all plants green – this is a further world record among the useful plants in our world. Chlorophyll is vital for the health of our blood – and that in turn is vital for the health of the person. No other plant in the world is currently known by science to contain more chlorophyll than Moringa. Research carried out by Dr Young demonstrates that red blood cells are produced less in the bone marrow (as was previously thought) than - at least in a healthy organism – in the intestines. According to Dr Young, chlorophyll is particularly important for maintaining healthy blood, as its chemical composition corresponds almost completely to that of the haemoglobin in humans. Along with the trace element iron, chlorophyll is regarded as the most important substance for the production of blood. Chlorophyll brings more oxygen into the blood, and this optimises the metabolic process, boosts the immune system, inhibits inflammation, helps deal with acute infections and inhibits tumours. It is regarded as „the green medicine“. Even this, however, is by no means all of the benefits that Moringa offers.

ANTIOXIDANTS: Here we must digress for a moment. One of the sources of danger to physical health are the so-called „free radicals“. These are considered to be unstable oxygen compounds that are lacking an electron. They replace the missing electrons by simply ripping them out of other molecules – proteins, hormones, genetic material and other substances of importance to the body. The substances that are robbed of the electron now find themselves struggling to restore the balance and begin to attack other tissue in the body. The result is a vicious circle that is harmful for three reasons: 1. the body then lacks the substances it requires; 2. its fabric is damaged, and 3. the chemical by-products are harmful and burden the organism with additional problems.

When such unstable oxygen compounds „steal“ electrons from other atoms or molecules, this phenomenon is called „oxidation“ (though in chemical terms this is incorrect). This „oxidation“ is also regarded today as a significant factor in ageing.

Thankfully, there are substances that help the organism to suppress this process and/or to counteract it. They make electrons available to free radicals wi-

thout then needing to obtain replacement electrons themselves or being converted into harmful substances. These substances are known as antioxidants.

World ORAC record

It is thought that a person should ingest between 5000 and 7000 ORAC units per day with his diet to remain well protected against free radicals. The ORAC values of individual plants are specified per 100 grams of the raw material. Thus 100 g of raspberries provide up to 2000 to 4000 ORAC units. The legendary goji berries, meanwhile, contain up to 25,000 ORAC units, one of the highest rates in the world. Yet here again, Moringa sets the bar higher, granting us another world record for the highest antioxidant level that has ever been measured for Moringa:

100,900 ORAC units. This is dependent on the region, the soil, the type of cultivation, etc; the producing areas of the Canary Islands produce by far the highest values.

For vegans and raw food eaters in particular it is worth knowing that the Moringa leaf is also a valuable source of protein. Almost half of the leaf consists of high-quality plant protein.

While each of these factors are interesting in themselves, however, we have been so bombarded in recent years by advertising for the „latest, healthiest and best superfood in the world“ that one would not be to blame for thinking: „Well, if that's how it is, I could just spend all day eating goji, acai and chokeberries and spirulina, chlorella and afa algae, drinking solely wheatgrass and barley grass juice and swallowing dozens of pills with incomprehensible names - OPC, Q10, NADH and so on.“ Now, in a few cases this may be justifiable or helpful for a particular period, provided that it is prescribed and supported by a competent health care professional. Such an approach, however, would otherwise be problematic. In the same way that two hands are required in order to wash our hands, most of the vital substances require the presence of others to be effective. And only a competent professional will know which of them work well together.

So if a person restricts himself to only one type of food or one type of supplement for an extended period, it is almost inevitable or automatic that he will develop a lack of vital substances in his organism. Vitamin C, for example, requires vitamin B1 as its „other hand“, and also a number of minerals. Vitamin C by itself will produce a grave lack of vitamin B1 with all its consequences – lack of concentration, poor memory, tingling in the legs and hands, constipation and various other effects. For this reason, not only synthetic vitamin products but also „the latest

wonder food“ are often regarded with suspicion in alternative medicine circles. Yet even here Moringa stands apart: here we **have 90 different vital substances, vitamins, antioxidants, minerals, trace elements, all amino acids, large amounts of plant protein, healthy fatty acids, chlorophyll and numerous other associated plant substances, all perfectly matched in a natural plant compound - fully bioavailable from a single plant and their effectiveness boosted to the maximum with zeatin!**

Moringa can be called „nature’s concentrated superfood“ and is thus an inside tip for all life situations.

It is not only sports people, who wish to build muscle mass, who profit from the minerals, vitamins and trace elements contained in Moringa oleifera. Many women report, during menopause or pregnancy, that Moringa can be effective in combating numerous complaints. Children are able to concentrate better while learning; older people feel years younger, active and attractive once again. They also experience improved concentration, stamina and good moods – all thanks to Moringa. People of all ages benefit from the effects of Moringa on concentration and stamina and generally feel happier with greater vitality. Its effects can be described as a true fountain of youth; it has tangible effects on the youthfulness of the skin, brain performance and overall wellbeing. Nursing mothers are able to boost their milk production and enrich it with the numerous vital substances, thus also boosting the bodily defences of their children. It is not without reason that Moringa oleifera has sometimes been called „A mother’s best friend“.

Moringa: a total, all-in-one food supplement that contains all the nutrients that the human being needs, from the foetus in the womb through to old age.

Taking Moringa leaves during pregnancy stimulates milk production and improves its quality considerably. It provides the ideal nourishment that can be used in cooking and diet in numerous ways. As a seasoning for soup, in salads and as a tasty vegetable, the tree offers all manner of possible uses.

Example uses of various parts of the tree:

- the leaves and fruit as food (fresh or dried)
- the leaves as a spice, in bee-keeping and in medicine
- the seeds as food, for oil and for water purification
- the bark for medicine and for rope and paper production
- the roots for food and in medicine
- the whole plant for animal feed or as biomass for alternative energy
- the „waste products“ for soil improvement, organic fertiliser and animal feed.

In modern medicine, meanwhile, extracts of *Moringa oleifera* are used mainly for their balancing effects on the nervous and hormone systems and for strengthening the body's defences. Anybody can benefit from the astonishing powers of the Moringa tree. The leaves can be sprinkled into soups or main dishes or over muesli; they can also be drunk as a tea. Taken as a tea, Moringa has a taste reminiscent of nettle. In powder form, the slight sharpness of the mustard seed oil it contains is more evident. It is this piquancy that makes it an interesting seasoning for dishes. Moringa is totally edible, it holds various world records and offers superlatives like no other plant. Known in many places as a wonder tree, it does full justice to that name. It is a tree that has the potential to solve the most pressing problems of the so-called „Third World“ and also those of the developed countries: it can be used to make deserts green, to fill undernourished people, to heal illness, to purify water for drinking – and even to produce diesel (to mention a few more advantages). Moringa is a true wonder and is a gift to humanity. It is not just yet another trend. Moringa is also one of the fastest-growing plants on earth. The plant hormones that facilitate this growth can be used in agriculture as fertilisers and help to grow larger, tastier and healthier plants.

Its vital substances content is so high that even a small amount of the dried leaf powder covers the recommended daily amount of many important nutrients. This is strongly boosted by the phytohormone zeatin, since this makes the many vital substances in Moringa 100% bioavailable for our bodies. The vital substances contained in Moringa are strengthened by the zeatin, so making their effectiveness still greater. Moringa is the ideal nourishment that can be used in cooking and diet in numerous ways. As a seasoning, for soup, in salad and as spinach, on vegetables, in drinks, sprinkled on baked dishes and pizza, while the entire tree offers numerous possible uses.

This tree, a survivor in itself and a survival aid to others, originates in the dry rocky foothills of the Himalayas in India. From there it spread into the tropical and sub-tropical zones of the earth – South Asia, South-East Asia, China, Indonesia, Africa, Madagascar, Mexico and Central and South America. In Europe it has only been successfully cultivated so far on Tenerife in the Canary Islands in recent years. This may be why it has taken several thousand years for the existence of this wonder of nature to penetrate the consciousness of the Western world. And yet the Moringa tree is mentioned in man's earliest written wisdom teachings – the Indian Vedas. Its mention there dates from 5000 years ago in the context of Ayurveda, the traditional Indian medicine that derives from the Vedas. Even back then, countless cases of healing from illnesses and suffering were ascribed to the tree. Today, people continue to confirm this, causing astonishment among modern practitioners: as a diverse and extensive source of vital substances it puts all nutrient and healing plants known hitherto in the shade.

Description of *Moringa oleifera*

There are 13 known species of *Moringa*, of which, however, only two are of interest to us: *Moringa oleifera* and *Moringa stenopetala*, of which the former is thought to have the greater nutrient value. Of this, only a subspecies of *Moringa oleifera* that exists on the Canaries with red shoots, twigs and fruit, has recently demonstrated even higher maximum values.

Moringa grows in dry, sandy soil and forms storage roots that reach deep into the ground; these enable the tree to survive in dry conditions. It likes temperatures between 25° and 45° Celsius and thrives in regions with an annual precipitation of above 500 mm per square metre. The tree is at home between 0 and 1000 metres above sea level (though this is affected by other regional factors). At temperatures below 18°C growth ceases. It dislikes prolonged frost as much as it dislikes ground that is too wet (waterlogging). In favourable conditions the tree reaches an age of 25 years or more. And, as we have already mentioned, these years are filled with records: in the first year alone this prodigy can grow to between five and eight metres, and eventually reaches, if left uncut, a height of over 12 metres. The wood of the tree is soft and its bark is pale in colour. The trunk is relatively short and has a diameter of between 20 and 40 centimetres, though it can grow thicker under certain cultivation conditions. *Moringa* can blossom after only 3 months and produces fruit in its first year; the tree produces up to 5000 nut-like seeds per year. The open crown of the tree enables it to be grown in mixed cultures, since it allows sufficient sunlight to pass through. All parts of this wonder tree can be eaten, used in medicine or otherwise made use of – the roots, flowers, leaves, fruit (pods), seeds, wood, branches, bark and resin – and this has caused the tree to be given a wide range of different names in different places.

The German name for *Moringa* is „horseradish tree“ („Meerrettichbaum“), owing to the high content of mustard seed oil compounds in the roots and the pungent smell and taste that are in fact reminiscent of horseradish. The British also „discovered“ the tree and exploited its roots during the colonial period in India; they too called it the „horseradish tree“. The roots are both a seasoning and medicine and also a source of food – the fleshy roots of young plants are eaten as a vegetable – once the slightly toxic skin has been peeled off. The blossoms grow on sometimes very long and much-branched panicles and are cream to pink in colour, with a sweet scent a little like lily of the valley. They are used in teas, for medical purposes and in the production of perfume and cosmetics. *Moringa* blossoms for up to 8 months of the year; the blossoms produce superb honey. The fresh leaves are either eaten raw in salads or cooked like spinach. They have the highest concentrations of vital substances of any foodstuff. This characteristic is what led to the name „Mother's best friend“, since mothers who ate *Moringa* leaves are able to give larger amounts

of more nutritious milk. Carefully dried leaf powder is now being marketed as a concentrated superfood, since it provides all vitamins, minerals, trace elements, amino acids, plant protein, chlorophyll and associated plant substances in an ideal combination for humans – and in a bioavailable form. And not only are the leaves used for salad, as a vegetable and as a food supplement and seasoning, but in Asia their juice is drunk as a supplement drink or, for people on a juice diet, to prevent or remedy malnutrition.

The tree's fruits are ribbed pods of 25-45 cm in length, in exceptional cases up to 90 cm, and 2-3 cm thick, depending on size and whether they are fresh or dried. These long pods have also earned the Moringa the name „drumstick tree“. If the pods are not picked from the tree first, they remain on the tree for a long time, dry out and eventually open to allow the nut-like seeds to fall. Very young, unripe pods are picked in many Asian countries and used as a vegetable, similarly to green beans. Fully grown green pods are used in traditional soups. These fruit are picked just 40 days after blossoming. Older pods must have their woody husk removed, like with asparagus. These are then used chiefly in spice blends such as curries.

The seeds of the Moringa tree are known as behen nuts or ben nuts. They are round or in some cases almost triangular in shape and have three paper-like wings. The pods contain up to 25 seed kernels (nuts), embedded in a dry white pith. Traditionally the seeds are used for treating various illnesses such as tapeworm infestations. Research in recent decades has shown that the seeds can also be used for clarifying and purifying water for drinking. For this purpose the wings are removed and the seeds shelled, dried and ground to powder. This powder then has a flocculating effect in water, causing the dirt and suspended matter to sink to the bottom. Any germs present in the suspended matter also sink to the bottom leaving the water at the top almost germ-free, ready to be poured off and used. Just 10 milligrams of seed powder are required to purify about 1 litre of water; a gram can purify a barrel of dirty river water. With the seed of a whole tree, roughly 30,000 litres of water could be treated. This spectacular quality has brought Moringa yet another new name: the clarifier tree.

A particularly good, stable vegetable oil can be pressed from the seeds that has a particularly long shelf life and does not become rancid, and is known as behen oil or ben oil. It has been used as a high-quality edible oil since antiquity, with a taste that is neutral or slightly sweet. With a high boiling point of 220°C, the oil is highly suitable for roasting and frying. It is also used in the manufacture of soap, ointments and cosmetics. Rich in vital substances, the oil also serves well in natural hair and skin care, e.g. for irritated skin, for adults, children and babies, and is also used for body massage. The oil of the tree itself is also equally versatile in its uses. Behen oil was indeed once used

by the Swiss as a thin lubricating oil in watch and clock-making. Today all but forgotten, the oil is still used for certain industrial purposes and also as a heating fuel or in the form of a high-quality biodiesel. The extraction of behen oil also gave the Moringa tree a name – the behen tree or behen nut tree. If one compares behen oil to other oils, it comes out very close to olive oil.

The bark of the tree and that of the roots are used primarily for medicinal purposes, from domestic remedies for stimulating appetite through to medications used clinically in the treatment of serious illnesses. Apart from medicinal uses the water-soluble bark mucus of the horseradish tree is used to treat toothache in many countries and also as a disinfectant fabric finish.* The resin of the tree is also used primarily medicinally – for headache and earache through to tooth decay and digestive problems.

**Fabric finish: a substance used in the treatment of fabric, material, textiles, leather, wood, paper etc. to improve its appearance, to produce smoothness, shine, cohesiveness etc. or for finishing.*

In South Asian countries the young green twigs of wild Moringa species are used as vegetables, normally blanched and then added to a spicy dip sauce or to soups. So far we have examined the plant itself and its useable parts. Now we shall discuss the numerous possibilities for application of Moringa oleifera.

Agriculture

Moringa fixes nitrogen from the air and thus improves the soil, so in effect replacing modern (and costly) nitrogen fertilisers. (The highest quality is obtained when the tree is fed nothing other than water, sun and warmth. Any kind of fertiliser additive tends to reduce the high vital substance content, which surprises scientists greatly.) In diametric opposition to modern artificial fertilisers, the natural Moringa fertiliser exhibits no disadvantages but rather improves the soil on a long-term basis. Moringa is thus not only a valuable source of nutrition in itself but it also assists other plants. The natural plant growth hormones that ensure that Moringa grows several metres per year, known as cytokines, can also be used to stimulate growth in other plants. It is obtained by pressing young Moringa shoots and the resultant liquid diluted with water. This can then be sprayed onto other cultivated plants to boost their growth. An extract of Moringa leaves in 80% ethanol can also be used as a plant spray. Plants treated with this will be more resistant to insect infestations and diseases (this also applies for local indoor plants). But not only does the Moringa spray protect and strengthen the plants, it also results in higher yields, stronger roots, larger fruit with improved taste and harvest increases of 25 to 35 per cent.

A study by the researchers Foidl, Makkar and Becker, available online, states yield increases obtained in selected crop plants in Nicaragua (Central America): for peanuts, an increase from 2954 kg per 0.7 hectare (equivalent to the standard unit of area in Nicaragua) to 3750 kg; for soya beans, from 1591 to 2182 kg; for maize, from 4454 kg to 6045 kg; for melons, from 8820 fruit to 11,592 . This study, conducted in 2001, not only investigated the yields of many other crop plants such as sugar cane, coffee, pepper, onions and others but also the effects on the plants themselves and the biomass obtained overall. The outcomes were equally surprising to both the researchers and the scientific community. All the plants treated with Moringa were healthier, grew faster and better, gave higher yields per hectare, produced more biomass (every part of the plant had grown larger) and the overall plant quality was better – measured both in terms of taste and in terms of nutritional value and the vital substances contained.

Livestock farming

Nor are the wondrous benefits of Moringa confined to plants and humans; they also apply to domestic animals. For example, the milk production of cows who received Moringa leaves mixed into their feed increased from 7 to 12 litres per day (remember the name „Mother’s best friend“). Instead of gaining weight at 900 g per day, cows fed with Moringa leaves began immediately to grow at a rate of 1200 g per day. While one may tend to oppose such „meat manufacturing“, the fact remains that better feed is also good for the animals and that benefits of this kind must be seen and understood differently in the context of the Third World.

Biofuel

Moringa can also be processed into bioethanol, which has a long tradition in countries such as Brazil. Filling stations there do not offer the likes of E10 eco-fuel (petrol with 10% ethanol added) but rather pure ethanol - i.e. a „petrol“ that is pure alcohol. Compared to ethanol derived from maize, wheat or sugar cane, Moringa ethanol again offers clear advantages: (1) No other known crop plant in the world produces more biomass (approx. 100-130 tonnes per hectare). This means that one hectare of land can produce up to 20,000 litres of ethanol. (2) The parts of the plant not required for ethanol production are not wasted; they can be used for other purposes, e.g. as organic plant fertiliser for farming or as animal feed. (3) Neither soot nor particulates are produced from its combustion. Biodiesel fuel derived from Moringa also has an exceptionally high energy output at combustion, comparable to that of regular petrol.

It can thus be seen that *Moringa oleifera* is immensely versatile. Here we will focus on *Moringa* as a valuable foodstuff:

Moringa as „Mother’s best friend“

Midwives in Africa make tea of *Moringa* leaves to boost the milk production of lactating mothers. The teas sold by chemists in Europe to stimulate breast milk taste revolting. I would recommend changing over to *Moringa* leaf tea. A double-blind, randomised study was carried out of pregnant mothers at the „Ospital ng Makati“ hospital in the Philippines. The women given two 350 mg capsules of *Moringa* leaf powder just three times a day before giving birth experienced more than twice the milk production compared to that of the placebo group during the first two days after birth. *Moringa* has saved the lives of many babies and children in developing countries.

Dr Lowell Fuglie has documented many mother-and-child projects involving *Moringa*. One mother, Maissata, reported: „My nausea vanished and I was able to build up enough milk for my baby. I felt much better and both the baby and I gained weight.“ The baby weighted only 3.2 lb at birth and nobody expected that it would survive. Other organisations that use *Moringa* in ensuring the lives of mothers and children include Trees for Life, ECHO (Educational Concerns for Hunger Organization) and NCC (National Council of Churches). *Moringa* trees have been planted around many hospitals in Africa and South America.

Doctors and midwives recommend that mothers breast-feed their babies for six months, and ideally for nine. Owing to the fatty acids in the mother’s milk, breast-fed children tend to be more intelligent, their immune systems are stronger, they are less prone to allergies and asthma and their digestion is more effective, since the intestine contains the correct bacteria, such as acidophilus and bifidus. About 80% of the immune system is based in the intestine. Responsible for the better brain development and intelligence of breast-fed children is the fatty acid DHA. The choline in the breast milk is also important for optimal, rapid reaction times in brain cells and for long-term improvements to memory. *Moringa* boosts the volume of milk, which is particularly important for mothers of twins or where a baby is born late. It was observed in cows that the average milk output was raised by *Moringa* from seven litres per day to ten!

Moringa improves the quality of breast milk

Not only does *Moringa* help increase the quantity of breast milk, but due to its rich nutrient content it also improves its quality. The nutrient requirements during the lactation period is the highest of any period of a woman’s life. A healthy suckling baby will double in weight in the first four to six months. During this period the need for most vitamins and minerals is between 50 and 100% greater than it was before pregnancy. A nursing mother gives out 10 g of calcium per month in her milk. The reason that colostrum (or first milk) is yellowish in

colour is due to its high beta carotene content. This vitamin protects the newborn from oxidation damage in its first days of life. Moringa – and particularly red Moringa from Tenerife – is one of the richest sources of beta carotene. The immune proteins in colostrum coat the wall of the baby's intestinal wall, protecting it from infections. As mentioned earlier, Moringa is a first-class source of protein. Roughly a third of the fats in breast milk come directly from the food intake of the mother. Moringa is a good source of fatty acids, particularly the behen oil, which contains valuable fatty acids such as linolenic acid and Omega 3 fatty acids, supporting optimal brain development and development of the newborn.

During the lactation period the mother must also pay attention to her own nutrient intake. Lack of nutrients during pregnancy and lactation can lead to postnatal depression; in particular, a lack of the B vitamins, calcium, magnesium, zinc or iron are known causes. All of these vital substances are present in concentrated form in Moringa.

During pregnancy and lactation, the best nutrients pass directly to the child, first via the umbilical cord and then in the breast milk. The calcium requirement for pregnant women is double the usual amount. The iron requirement during pregnancy is also double the usual, roughly 30 mg per day. Moringa contains record quantities of both calcium and iron.

We can see that nature regards the next generation as the highest priority. It is therefore very important that the mother gives herself optimum nourishment during pregnancy and lactation, and ideally of course before pregnancy, to ensure that neither she nor the baby suffer any signs of deficiency. It is unnatural for a mother-to-be to suffer from nausea and lack of energy and to give up breastfeeding due to exhaustion and overload because of a lack of vital substances. And since the quality of the seed and thus the fertility of European men has continued to deteriorate in recent decades, the father should also eat Moringa not later than from the start of family planning.

Why Moringa is a blessing in old age

Older people often suffer a lack of vitamin B. Levels of vitamin B12 tend to fall in particular, but there is often also a lack of vitamin B6 and folic acid. The lack of vitamin B12 is a particular cause for concern, since some 50% of over-65s suffer damage to the cells in the stomach lining. This results in less gastric secretion, and consequently the bioavailability of vitamin B12 and cobalamin is dramatically reduced. A vitamin B12 deficit leads, for example, to impaired vision, a deficit of folic acid because less glutathione is stored, and to anaemia, with consequent fatigue, weakness and shortness of breath, poor concentration, aggressiveness, irritability, poor memory, confusion, agitation states, psychosis and depression. If you experience one or more of these symptoms you should have your vitamin B12 status checked.

Older people are less able to absorb the B vitamins. A quarter of older people also lack vitamin C. Deficits of vitamin C and vitamin B6 weaken the immune system. These vitamins are plentiful in Moringa. Many older people also suffer a lack of vitamin A, with consequences for the health of their eyes. Vitamin A preparations can be dangerous because the metabolism of vitamin A in the liver is no longer at its most effective, and vitamin A can be overdosed as a fat-soluble vitamin. Moringa contains only the precursors of vitamin A, beta carotene, from which the body produces vitamin A as it is required. Both men and women should take 1200 mg calcium daily; over the age of 65, women need only 550 mg, while men should continue to take 700 mg. It should also be borne in mind that the capacity of the intestine to absorb calcium decreases with age. Osteoporosis and the resultant femoral neck fracture are a common cause of illness in old age. Moringa is one of the best sources of calcium in general, since the calcium it contains, like all the other elements are highly bioavailable.

Seniors require more vital substances, not less

Who would not wish for this – to grow old with full quality of life, to enjoy the evening of one's life to the full? Not to die of illness but rather of old age, peacefully, at the end of a life of fulfilment? This requires, of course, a healthy approach that includes humour and optimism. But also good nourishment.

From middle age onwards, and seniors all the more, require more vital substances than younger people because their enzyme activity levels and production are lower and the absorption of nutrients in the intestine falls accordingly. The immune system however requires more nutrients because it must handle illnesses, discomfort and ageing processes. It is important to ensure healthy cell production. Only a healthy mother cell can successfully generate healthy daughter cells. Diseased cells can no longer multiply – they are eliminated

and taken out of circulation. Our body has its own process for this, known as apoptosis. Up to 50,000 reactions occur per second (!) in a single human cell. Similarly, 20,000 chemical compounds are freshly made every second. Roughly 600 million cells renew themselves every day. Our choice of nutrition decides the quality of our future body cells and thus also of our health, quality of life and longevity.

Scientists such as Professor Dr Heinz Liesen, a preventive and sports medicine specialist, have sounded the alarm: „We have to assume that more than two thirds of all Germans aged over 50 or 55 are increasingly suffering from subclinical states of deficiency. These people are not yet ill, but the immune system is weakened. They suffer constant tiredness, poor concentration and disturbed sleep. Regeneration is no longer happening. They are lacking vitamins, trace elements, minerals like magnesium, zinc, selenium and vitamin E. The list is endless.“ (From „Our nutrition is not meeting our vitamin needs“, Welt am Sonntag, 24 August 1997, no. 34, p. 26). The article goes on to describe research at the University of Heidelberg in which 300 people in their eighties were examined. The outcome was devastating. Two thirds of them were suffering vitamin deficiencies – above all of vitamins A and C. Of these „deficiency patients“ twice as many died in the following three years compared to those who had a sufficient intake of vitamins. Moringa is a cornucopia of vitamins and stands out particularly for its high concentration of vitamins A and C.

A superfood like Moringa is ideal particularly for the elderly because it is a natural concentrate of vital substances provided by Mother Nature that can be optimally exploited and used by the body. Moringa also helps with numerous minor ailments and even with „real“ illnesses. Because of its unique concentration of vital substances we should take Moringa leaf powder even as a prophylactic to help prevent deficiency symptoms and associated complaints from occurring.

People who take Moringa need no other artificial nutritional supplements and can give artificial vitamins and minerals a wide berth in future. Moringa not only fills gaps in vital substances; it lifts the state of health to a higher level than has been experience before. At last the body gets what it really needs! Moringa gives the organism the vital substances that it needs for self-healing and for optimal functioning of body, soul and spirit. It is like a sumptuous brunch buffet for the cells in which they can take as much as they like of whatever they like.

Moringa gets sportspeople up and running!

„Oxidative stress is enemy number 1 for athletes.“ (Dr. Ivkovic and Dr Müller Schubert, „Oxidative Stress – Risk Factor Number 1 for your Health“)

„Moringa is one of the least-known performance-enhancing products for sports people“ (Professor Lous M. De Bruin from the „Moringa Tree of Life“ charitable organisation)

We are runners by nature, according to Thilo Spahl in his book „The Stone Age is in our bones“, which was selected as Science Book of the Year in 2010.

Before office jobs were invented, for hundreds of millions of years, almost all people and our animal forebears were physically active every day. Today we are physically underchallenged. Studies have discovered that endurance sport enlarges the brain. The shrinking of the hippocampus is halted – one of the causes of dementia. Moderate movement for just fifteen minutes per day increases life expectancy by three whole years!

Winston Churchill claimed that sport is death. Still, he did not abide by this statement himself but took regular exercise. Dr Strunz, the pope of fitness, has discovered that three 40-minute sessions of endurance training per week increases the number of mitochondria, the little „power plant“ in our cells, by a factor of six. People who exercise regularly can deal with stress and pressure far better than their non-sporty colleagues. Sport also improves mood and boosts self-awareness. The loss of minerals from the bones, better known as osteoporosis, can be slowed by training with gym equipment and endurance exercise. Since this also strengthens the cardiac muscle, the risk of heart disease is also reduced.

Sport promotes free radical buildup

Something that many physically active people do not know is that they need more nutrients – and that sports activities lead to increased production of free radicals. The need for antioxidants is thus greater.

It is estimated that 90 per cent of oxidative stress illnesses are caused by the harmful effects of reactive oxygen radicals on the body's cells. Risk groups here include both amateur and professional sports people. Oxidative stress is enemy number 1 for athletes' health. During a training period, the level of „Carr units“ (a measure of oxidative stress) can rise to 350. 350 Carr units – which can be easily detected in a blood test – means moderate oxidative stress.

Many amateur fitness enthusiasts believe in the motto „no pain, no gain“. This is not correct. Many people overestimate their abilities and allow themselves insufficient rest periods for regeneration.

Scientific studies have shown that physical training increases the production of free radicals in the body. It is therefore strongly recommended that these people take additional antioxidants.

Moringa is a „horn of plenty“ for antioxidants, with unparalleled concentrations, and so we recommend a daily intake, particularly for people who are physically active.

„Good health is not everything. But without it, all is nothing,“ as the German philosopher Arthur Schopenhauer once said. Radiant health, a state of brimming with joy of and lust for life, every day – that is your birthright!

You are welcome, incidentally, to come and see our Moringa trees on Tenerife in person. We will be happy to show you the plantations.

I hope you enjoy the film and of course look forward to hearing of your experiences.

*Warmest regards,
Andreas Kraus*

*MoringaGarden Tenerife
www.MoringaGarden.eu*



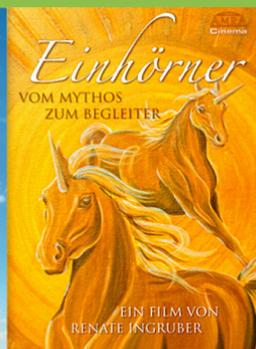
About the Screenwriter: Dipl.-Päd. Renate Ingruber

With the themes of her films, the Austrian TV journalist and documentary screenwriter Renate Ingruber, nominated several times for the **Cosmic Cine Award**, is considered a pioneer.

Her film **Den Engeln auf der Spur** (On the Trail of Angels), released in 2011, was the first documentary on angels in DVD format.

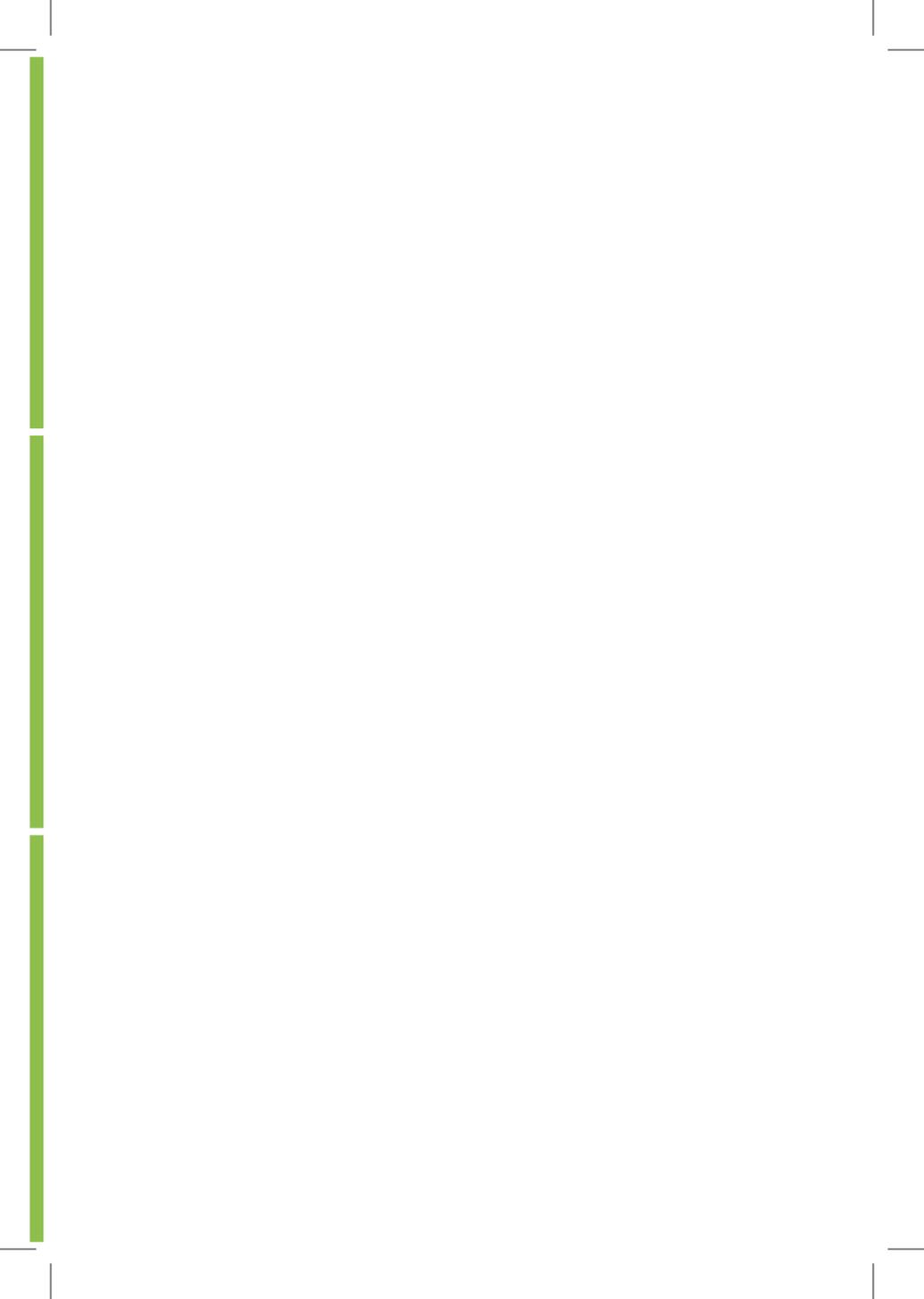
This was followed in 2013 with **Einhörner – vom Mythos zum Begleiter** (Unicorns: from myth to companions) – again the first documentary on this subject.

Now in 2014 Ingruber has produced **Moringa ein Engel in Pflanzen-
engestalt** (Moringa: an angel in plant form), the first extensive documentary on Moringa available on DVD.



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