

multi kosmos



INTERNATIONAL EDITION 2014

Innovative

12 years ago, Franz Tschiggerl was on the verge of giving up his chicken fattening farm. He now runs an exemplary farm thanks FHE.

Page 4

Far-sighted

Agriculture in Poland boosts Emilia Figurska by a natural way with the dedication to and distribution of Effective Microorganisms.

Page 8

Valuable

Manju and Manju Sea Salt are produced in Okinawa by TPR, the Tropical Plant Resources Institute, in a multistage production process. Years of research were first required to get such a valuable product.

Page 12



It is not what we do but
how we do it.

A pioneer in a field such as effective microorganisms requires a wealth of feedback, experience and trust. We chose this new path – with occasional detours – many years ago with the aim of offering environmentally effective solutions. Ecological thinking is for us closely linked to sustainability, a sustainability which permeates all areas and where every one of our employees, partners and customers has a part to play.

Because perfection means stagnation, we evolve continually and enthusiastically and want to participate actively in protecting the climate and the environment. This is of course only possible with people who have the courage to try something new and who believe in success. And therefore we are always pleased when we see positive results confirming that we are on the right track.

2014



// 04

FHE – used in chicken houses and as an integral part of the feed management programme



// 08

BB Plant Power – a comparison to conventionally farmed fields



// 12

Manju Sea Salt – white treasure of the sea

02__ MULTIKRAFT // Multikraft introduces itself

04__ LIVESTOCK PRODUCTION WITH FHE // A farewell to odours – and even the neighbours are happy: Agriculture and poultry producer family Tschiggerl

06__ LIVESTOCK PRODUCTION WITH FHE // On the North Sea coast: Agriculture and dairy cows - Jens Theilen

08__ INTERNATIONAL AGRICULTURE // agricultural holdings and distributors - Emilia Figurska:High-yield – profit to come // Obituary Prof. Dr. Ravi Sangakkar

10__ AGRICULTURE CROP // In Simmering, Vienna, the three Kasehs brothers and their families focus on growing vegetables such as tomatoes, cucumbers and salad – with the help of EM.

12__ MANJU // A new form of old knowledge – The production process

14__ HOUSEKEEPING WITH EM // Spring Cleaning with eMC® probiotic cleaners

16__ IN VIEW // Prof. Dr. Manfred Hoffmann analyses Manju electrochemically

18__ BIOEMSAN // Beauty lies in our Nature – Organic Cosmetics



Legal information

PUBLISHER: Ulrike Hader, MEDIA OWNER: Multikraft Produktions- und HandelsgmbH, Sulzbach 17, 4632 Pichl/Wels, Austria, Tel. +43 7247 502 50-100, info@multikraft.at, www.multikraft.com, CONTACT & CHIEF EDITOR: Kerstin Pierer, ART DIRECTION & LAYOUT: Multikraft, Lisa Radakovits, AUTHORS OF THIS ISSUE: Mag. Katja Haller, Prof. Dr. Manfred Hoffmann, Kerstin Pierer, LECTOR/TRANSLATION: translated.net, PUBLISHER: X-Files, Linz

A farewell to odours – and even the neighbours are happy



Influences of different feed rations on emissions from poultry farms

(experimental standard feed // + 10 L FHE/tonne) Agricultural Teaching and Research Centre Raumberg-Gumpenstein

Summary and comparison of selected experimental parameters (mean values of both runs)

Parameter	Exhaust vent - trial	Exhaust vent - control	Diff. in %
CO ₂	1540 ppm	1723 ppm	-10,62
Ammonia emissions	0,021 kg*	0,0265 kg*	-20,75

* NH emissions in kg/place/year|ppm = parts per million

Weight gain in grams per animal and feed efficiency
(weight gain to feed consumption) // average of two trials

	Trials	Control	Improvement in %
Daily weight gain in g	51,74	47,7	8,5 %
Feed conversion ratio	1,64	1,67	1,8 %

Comment from Raumberg-Gumpenstein:

The studied additive is a combination product with a variety of effects and thus to be regarded as a pollution control and at the same time a performance-enhancing measure in poultry breeding as an alternative to exhaust purification. www.raumberg-gumpenstein.at
Project period 2013, complete details available under: www.multikraft.com



Franz Tschiggerl

More than 12 years ago, Franz Tschiggerl was on the point of giving up his poultry fattening farm. The economics of poultry housing were no longer acceptable, and the odours had caused complaints from nearby inhabitants. Today the Tschiggerl family is proud, thanks FHE, to be operating a model farm with excellent health levels.

In the late 1990s, south of Styria and close to the Slovenian border, several farmers interested in FHE (Fermented Herb Extracts) began to integrate it into their livestock management. One of the most committed farms was that of Franz Tschiggerl and his family in Halbenrain near Radkersburg, for generations a traditional and successful chicken-fattening farm in a village location. Franz Tschiggerl has worked with FHE since 2002.

„Even back then we struggled, like many other farmers with a large fattening farm in a village, with a problem: the pollution from ammonia. But not only our neighbours suffered from stench, even our quality of life and the health status of the chickens suffered from the high ratio of polluting gas inside the chicken housing,“ recalls Franz Tschiggerl. „I was about to quit. I had really tried everything, and even the profitability suffered at some point.“

Multikraft consultant Alois Pein from Oberspitz in Deutsch-Goritz, whose agricultural supply business had had contacts with the Tschiggerl family, then introduced the Tschiggerls to Fermented Herbs Extract. Under the motto: „It doesn't hurt to try“, one of the two chicken houses was used as a test area. The chicken feed was sprayed with FHE when delivered and again prior to introduction into the feed silo, and the test house was sprayed thoroughly after cleaning. Already at the first fattening period significant improvements in feed efficiency were seen, the losses were reduced and the fattening period shortened. Perhaps the most important result: strong odours were a thing of the past and peace was restored in the neighbourhood.

As a result, FHE is now used in both chicken houses and it is an integral part of the feed management programme. Introduction of the FHE takes place in several stages. After being thoroughly cleaned, the surfaces in the entire house are sprayed with FHE and the bedding is sprayed once more before the chicks arrive. FHE is administered via the feed and on certain days also via the drinking water. Immediately after stabling, the chickens receive Desomin in addition to FHE. Desomin is a natural product with an acidic base and is used to strengthen the resilience of young animals. The strong ammonia odour and dust harmful for the animals are now history. „Apart from the much improved quality of life for humans and animals - which is priceless anyway - even from an economic point of view the transition to FHE was a resounding



The story that began by saying „It doesn't hurt to try“.



success,“ enthused the dedicated farmer. Since 2013, the feed ration has been supplemented by feed charcoal for additional sanitizing effects. The Tschiggerl family's poultry farm is today a model producer and a prime example of working with alternative and ecological feeding methods.

Recently, in April 2014, the Austrian Minister of Agriculture Dr. Andrea Rupprechter paid a visit to the Tschiggerl family as part of his „Austrian Quality of Life“ tour. Particular attention was also directed to the innovative processing of corn cobs for which the inventive farmer has been known for the last eight years. Mr Tschiggerl developed a special attachment, now patented worldwide, for conventional combine harvesters where corn cobs are harvested and the grain is separated from the cobs and cleaned in one operation. These corn cobs have a high value in uses such as crushed as soft litter in the chicken houses or as a CO₂ neutral fuel. But that is another, very exciting story.

Family Franz Tschiggerl *Agriculture, agricultural aids and poultry farming*

Poultry farm:

Two chicken houses with 25,000 fattening places each with approx. six fattening periods per year

Per period:

1000 L FHE 650 kg of feed charcoal, 2-5 L Desomin

On the North Sea Coast

Where large rural companies dominate the wide, flat fields and meadows.

Germany

The North Sea coast, which along with the Wadden Sea has been entitled a World Heritage Site, is one of the most beautiful natural landscapes in Germany. And near the North Sea coast north of Bremen is where Jens Theilen operates his farm.

The landscape here in northern Germany is dominated by vast plains, wide, flat fields and meadows which are mainly used for intensive agriculture. These are large rural enterprises with up to 500 cows. „I am, with my 340 animals and 130 hectares of land, of average size,“ says Jens Theilen. He plants 21 hectares of corn for animal feed. Of the 340 animals, a part is breeding stock and approx. 170 dairy cows yield 10,000 litres per cow per year. The operation sends the total milk production directly to a dairy for processing.

Jens Theilen had begun experimenting with microbial products and discovered Multikraft products during the course of his testing. Since 2013, he has used FHE (Fermented Herbs Extract) on his own farm. In the meantime, he has become a dealer and sells Multikraft products throughout northern Germany. He shares the satisfactory results of his experience with FHE with other farmers.



Jens Theilen's farm has a total of 340 animals.



170 animals are dairy cows, production capacity is 10,000 litres per cow per year.

He is enthusiastic when demonstrating the possibilities of the „Bag/Box“ system for liquids. This packaging was originally available from Multikraft for smaller containers only. Multikraft responded promptly to further demands from the agricultural sector and together with the manufacturer they developed 500 and 1,000 litre drums for the „Bag/Box“ system. „For me, the durability of FHE is an important criterion. The Bag/Box system is therefore of great interest. The liquid contained is conserved for a long period,“ says the farmer, who is currently experimenting with FHE in concentrated feed for cows and calves.

He regularly uses FHE in silage and in the colostrum period (the first 14 days). Jens Theilen has noted that no secondary fermentation takes place in silage. He is also pleased with the results of hoof washing with FHE. The use is targeted and regular, substantially contributing to the health of the animals.

If manure is treated with microbiological products, rotting, stench and fly plagues are reduced. The flow rate is optimized and the formation of floating and sinking layers decreases. These proven advantages have convinced Jens Theilen.



For me, the durability of FHE is an important criterion. That is why for me the „Bag/Box“ system, as I have experienced it with Multikraft, is very interesting.

This spring for the first time he incorporated FHE (Fermented Herbs Extract) in the manure and fertilized with it. „However, I have not created a control field in order to do a direct comparison. The results are therefore yet to be seen.“ Jens Thielen was able to observe a particular effect when treating a sickness in one of his dairy cows. The cow suffered from a persistent udder herpes.

A long list of different cures had been tried without success. A trial was then made with Multikraft products technology and finally improvement was seen.

„The problem was that the wound crust on the udder was continually re-opened by the milking process. Morning and evening, after the cow had been milked, I sprayed the cow’s udder for two to three weeks. I found that the wound healed faster and even completely disappeared,“ reported Jens Thielen after completion of the treatment.



Jens Thielen uses FHE (Fermented Herbs Extract) in feeding and silage on his farm.



Calves are also fed FHE.

Jens Thielen GbR

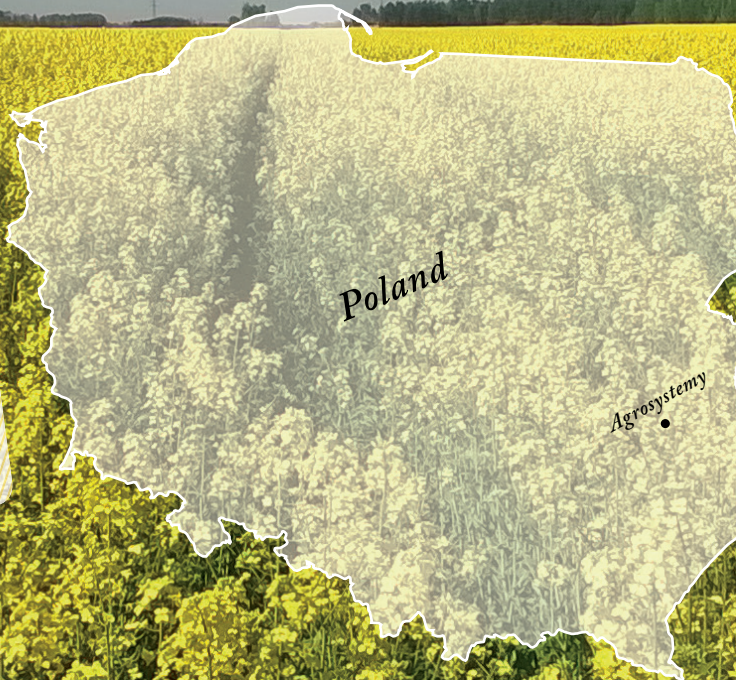
Dairy farm and agricultural production with 130 hectares of land

Dairy cows and breeding:
total 340 animals
170 of which are dairy cows

Milk performance:
10,000 litres per cow per year

Use of FHE (Fermented Herbs Extract):
- in feed
- for silage

High-yield profit to come



Emilia Figurska and her husband operate a farm with 150 pigs in Poland. She has always kept her eye on the developments in biological products and ten years ago she started using microbial products in animal husbandry. She repeatedly noted the improved manure quality and reduced odour levels. The animals were noticeably stronger and healthier. These first successes prompted an idea.



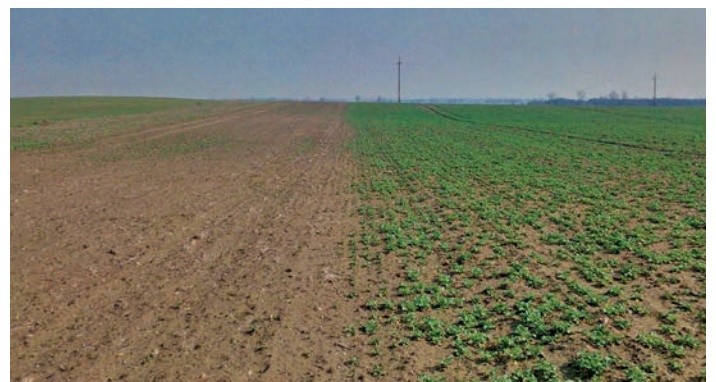
Emilia Figurska

„I wanted to be a dealer for effective microorganisms in Poland. For some time I had been with Multikraft, a company specializing in microbial products. Since 2009, we have been partners with Multikraft in Pulawy, a small town on the Vistula River in southern Poland,” says Emilia Figurska, co-owner and managing director of Agrosystemy which she runs with the other co-owner, Maciej Czepinski.

Agrosystemy imports Multikraft products. The core business, in addition to sales, includes comprehensive advice on how the different products may be optimally used. Agrosystemy now has three employees and operates closely in Poland with seven other dealers. The nationwide distribution network grows from year to year. Air-conditioned storage facilities and a well-organized distribution system guarantee the quality of Multikraft products for the end-user.

These are mainly conventional farm operators who have increasingly incorporated BB Plant Power and FHE (Fermented Herbs Extract) in the management of their farms. On-site training, always carried out in cooperation with Multikraft, provides the latest product information and support for their application. Expertise is shared through the reseller network. In regular user meetings, experience with Multikraft products and helpful tips from the field are exchanged.

Animal husbandry and the cultivation of cereals, vegetables and fruits are the main application areas. „Through our work, our farmers know of the importance of microorganisms in the soil, and also notice that the plant growth is significantly improved by micro-flora enriched with microbial fertilizers. We often plant fields in which we use BB Plant Power products, and thus show the difference compared to conventionally farmed fields,” says Figurska.



Comparison of winter rapeseed without (left) and with (right) fall treatment with BB Plant Power

BB Plant Power is used especially in the flourishing cultivation of rapeseed in Poland. It is composed of organic (effective microorganisms) and inorganic substances (natural minerals). Rapeseed places high demands on the supply of nutrients and BB Plant Power supports the entire cycle of plants naturally. „For rapeseed, we recommend a fall treatment with BB-Foliar and BB-multical when plants have 3-4 leaves, and then in the spring, two treatments at intervals of ten to fourteen days,“ says Emilia Figurska, who has experienced consistently positive results in the application. She sees a clear plant vitality, as well as an increased resistance to fungal diseases.

In many cases, increased crop yields and ensuing better economic results have been achieved. „We achieved very good results with this year’s rapeseed harvest. It increased by about 15%,“ says Emilia Figurska, who already has her eye open for new application areas. Soybeans and sunflowers have so far not been widely planted due to difficult climatic conditions. In southern Poland, however, there are some regions where each year more acreage is planted with soybeans and sunflowers. Emilia Figurska and Agrosystemy will also assist these areas by supporting the use of Multikraft products.



Comparison of a root collar without (left) and with treatment with BB Plant Power (right)

BB Plant Power for leaf and soil

BB Plant Power combines organic (effective microorganisms) and inorganic substances (natural minerals) and supports the entire cycle of the plant naturally. In soil (BB-Soil = EM-Active) and on leaves (BB Foliar with BB-multical), BB Plant Power ensures an optimal, healthy and vital growth.



Prof. Dr. Ravi Sangakkara



We mourn the early death of Prof. Dr. Ravi Sangakkara, after a tragic accident in his home town of Kandy, Sri Lanka, on August 29, 2014.

Dr. Ravi Sangakkara was a Senior Professor in the Department of Soil Science at the University of Peradeniya, Sri Lanka, as well as for many years a visiting professor at the ETH Zurich and the Boku Vienna. In addition to his extensive work as a university professor, Dr. Sangakkara had been involved for over 25 years, in his work with the APNAN (Asia Pacific Natural Agriculture Network).

I first met Dr. Ravi Sangakkara at an EM conference in Bali in 1998. Our family has counted him as a friend since that date.

Prof. Sangakkara was a world-renowned soil scientist, as is demonstrated by his numerous publications. His courteous, friendly and modest manner was equally appreciated by colleagues, students, and friends who revered and loved him.

We have lost a special friend far too early, and Dr. Sangakkara will always be remembered and honoured.

Ulrike Hader

Viennese family tradition



In the district of Simmering, Vienna, the market gardens of the three Kasehs brothers and their families continue a long-standing company history. In close proximity to their homes flourish crops, mainly of cucumbers, oak leaf lettuce and tomatoes, in glass and film greenhouses and the surrounding fields.

The entire production is delivered directly to the LGV-Frischgemüse, which handles the distribution to retail chains. In this not-for-profit vegetable gardener cooperative, family farms produce quality fresh vegetables. Particular attention is paid to the hygiene regulations and the requirements of the AMA seal of approval/GLOBALGAP.

The market garden of the Kasehs brothers, Johann, Karl and Rudolf, is one such family-run business. The production of cucumbers, oak leaf lettuce and vine tomatoes is weighted differently in the respective 1.7 to 3 hectare operations. Cucumbers and vine tomatoes are planted on coco humus substrate mats. A wide variety of salad types, including field salad in winter, are cultivated throughout the year in greenhouses and film tunnels as well as in open fields. Beneficial insects have been successfully introduced for some years now. All three brothers have also integrated Multikraft products in their vegetable production.

Rudolf Kasehs, following the advice of a horticultural specialist, has used microorganisms since early 2013. He currently waters the salad crops with a mixture of BB-soil and Terrafert soil. A solution of BB foliar, Terrafert foliar and MK 5 is sprayed on the crops at least once a week. This year, the tomatoes were treated, apart from a preventive mildew spray, only with micro-organism technology. BB-soil and Terrafert soil are combined with the fertilizer solutions and regularly dripped into the ground.

The family of Karl Kasehs lives in the same street as Rudolf's. His son Karl Jr. is already very active in the family business. Shortly after his brother, Karl Kasehs also began including microorganisms to optimize the production of residue-free cucumbers. A wide range of experience has been accumulated during this last year and the business has succeeded – according to the results from August 2014 – in producing completely healthy cucumbers without using synthetic plant protection products. Plants of up to one metre in height are sprayed twice a week, those over one metre once



The Kasehs family from l. to r.: Karl, Monika and Karl Kasehs Jr., Johann and Johann Kasehs Jr., Rudolf Kasehs. In the background, a section of salad crops produced by Rudolf and Bettina Kasehs.



Left: Tomato trusses on coco substrate mats in the operation of Rudolf Kasehs.
Right: Salad heads on natural soil, grown by Karl Kasehs, winter 2013/14



Cucumber plants on coco substrate and successful beneficial insects at Johann and Karl Kasehs

week, with a solution of BB-soil, Terrafert soil, MK5, FPE (fermented plant extracts) and ceramic powder. A fertilizer mixture from a horticultural specialist is supplemented with BB-soil and Terrafert soil dripped in during the ongoing irrigation process.

The cucumber plants are textbook-perfect, with many healthy white roots, even spacing of the flowers and therefore of fruit, and at the end of August the stems are still strong. „For us, it is a great advantage to be able to raise such healthy and compact plants without transport stress, climate change and adaptation to a new environment,“ says a satisfied Karl Kasehs.

„The freshly harvested vegetables are content, there are no residues in the vegetables“, Johann Kasehs Jr., the eldest of the brothers in the family business,

who along with his still very active and dedicated father Johann has for at least a year relied on the fortifying power of regenerative microorganisms to produce cucumbers and corn salad in glasshouses and foil tunnels. Another quintessential advantage for the two farmers is that microorganisms are always applicable and no waiting period must be observed. The pleasant, safe handling in daily use as well as the fortifying effects on natural soil in protected cultivation as well as in field plantings also make the use of this ecological method economically interesting.

Because for the three Kasehs families, healthy cultures that thrive on a natural basis are particularly important. „Even the grandchildren can always go into a glass house and eat cucumbers at any time,“ tells us Johann Kasehs Sen., pleased with the safety of his products.



Cucumber plants, textbook-perfect: Karl Kasehs, August 2014



Johann Kasehs Sen. presents his crop to the customers of Emilia Figurska, Agrosystemy, Poland

A new form of old knowledge

Manju and Manju Sea Salt are produced on the island of Okinawa by TPR, the Tropical Plant Resources Institute, in a multistage production process. Years of research were first required, in which food and its ingredients and the use of Effective Microorganisms were studied and organic farming methods were improved.

Manju, Drops of long life

Manju combines foodstuffs which are traditionally regarded in Okinawa as healing substances, especially the green papaya. It is cultivated organically by TPR using EM. In glasshouses because of the recurring typhoons. Also present are EM-brown rice and rice bran from Japan's top rice region, Hokuriku, and brown algae from the island of Hokkaido. All are grown according to specific guidelines and subject to rigorous quality controls.

„We only use ingredients, that meet the Japanese economic Bioland standards (JAS). For us it is important to track the production exactly. We procure the raw materials directly from organic farms and we personally make sure, that the growing conditions and our demands are met in full, so that we receive pure ingredients.“ The process is very labour intensive, scientist and TPR laboratory manager Masato Miyajima describes.

Time to mature

There are very specific microorganisms selected for food production which are used with the mentioned ingredients. Directly on the premises of TPR, impressively high, white silos with a total capacity of 900 tons reach into the sky. They contain the key to the production of Manju: the one year-long fermentation process. The process takes time to be effected, and after several fermentation stages and maturation periods during which the drops of long life are produced. After completion, the odourless and tasteless golden liquid is filtered to remove solids and bottled sterile in a final step.

Essential Essence

During the fermentation process, the ingredients are so de-constructed that especially one essence emerges from the herbal ingredients called PAC, the „Product of AminCarbonyl reactions of the plant constituents“. The full force of nature is hidden in this essence. The high content of antioxidants, the digestive enzyme papain and about forty other bioactive ingredients such as minerals, vitamins, enzymes, phytonutrients and amino acids give Manju its exceptional value.



Manju Sea Salt, white treasure of the sea

For many centuries and especially in ancient times, salt was a particularly valuable commodity, one which served not only for the seasoning of food, but more importantly as a preservative. It was so precious that even wage payments were made in the form of salt rations, and therein lies the origin of the word 'salary'. The times when salt was regarded as cash are long since gone, but again today the preciousness and nutritional value of high-quality salt is being rediscovered. Manju Sea Salt is a mineral-rich, high-quality sea salt of natural origin, completely free of artificial synthetic additives.

During the spring full moon tide, sea water is pumped out of the Pacific Ocean on the North East coast of Okinawa. Why only this sea water in particular is taken, explains Tō'ichirō Nago, founder of TPR, with a startling observation. „In a full moon, the coral lay innumerable eggs in the reefs of the Pacific Ocean off Okinawa. These eggs absorb nutrients, grow and form new coral reefs. Unlike the usual tide, we observe that with the full moon spring tide the most nutritious sea water rises from the deepest depths of the ocean and especially promotes the growth of corals.“

This nutrient-rich sea water is further processed in a complex process. It is processed with the fermentation drink Manju and fermented for several months because - as in the preparation of Manju - all good things take time. „In this way, the sea water minerals are enriched with the antioxidants contained in Manju,“ explains Tō'ichirō Nago. Subsequently, the brine is heated and concentrated. Salt blocks are formed, which are fired over beech wood and then mechanically crushed. Manju Sea Salt is packaged steril under strict quality control.

„Our salt is not comparable with conventional salt. Its mild flavour highlights the flavour of ingredients. After burning it has a fine, silky texture, for which it is renowned,“ Tō'ichirō Nago says.

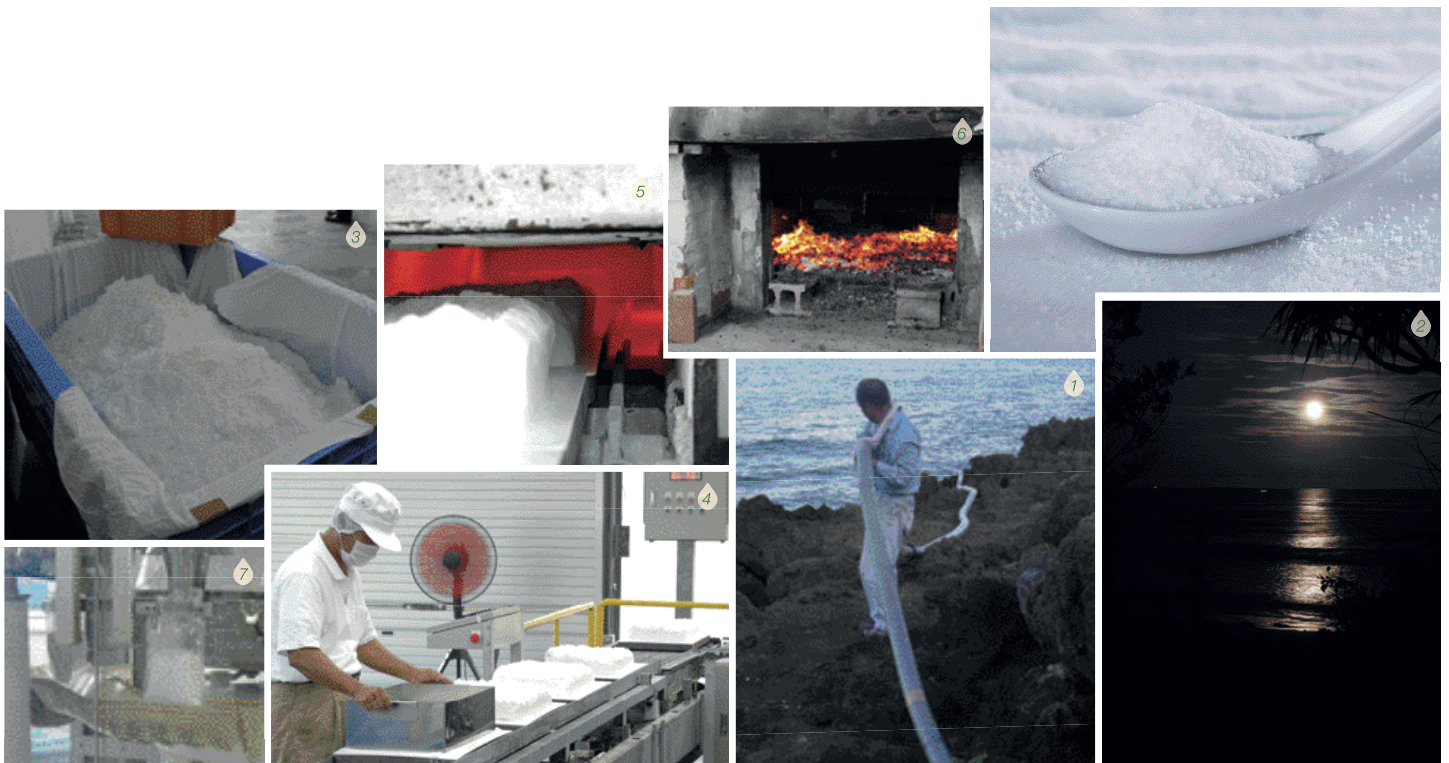
In Manju Sea Salt, the white treasure of the sea combines with the golden drops of long life to form an extraordinary union. This unique table salt contains useful minerals and trace elements in a balanced ratio. Its regenerative properties make it particularly valuable for a healthy and balanced diet.

Manju tip

A half pinch of sea salt and a shot glass of Manju in your favourite beverage together promote well-being and health in a simple, natural way.



1,2 Salt production at the spring full moon tide // 3 The sea salt during processing // 4 The heated and thickened brine forms salt blocks // 5,6,7 The blocks are fired over beech wood and then bottled





Clean as a Whistle –

Spring Cleaning with eMC[®] probiotic cleaners

Use the energy of the season and activate your house and garden with Effective Microorganisms and other tips to try.

It's finally that time again. Time to put the coats, jackets, caps and all the winter gear back into the cupboard. Get inspired by some of the following EM-Applications, so that your gear will be ready again as soon as the upcoming season starts.

Spray your textiles with 1 part eMC textile cleaner diluted in 100 parts of water, let them dry and then put them in storage. Add drops of high-quality mountain lavender oil to cloths stored with your winter gear to repel moths all summer long. Sturdy footwear survives the warm season best when the inside surfaces are sprayed with EM clear spray solution or the probiotic eMC cleaner (citrus or lavender-cleaner; diluted 1: 100) before making their way

into storage for the summer. Thus treated, the footwear will be ready to go next winter without the musty smells you've probably noticed without treatment. Your bedroom will also enjoy an EM treatment as much as your wardrobe and shoe cupboards. To remove winter's stuffy air and those pesky, allergy-causing dust mites from your mattresses and bedding, spray everything with EM Clear or eMC Textile Cleaner spray (diluted 1:100), put it out and let it dry out in the fresh air, followed by a thorough vacuuming.

eMC[®] cleaners are particularly effective not just for the indoor environment, but any other kind of pollution. The microorganisms possess an exceptional cleaning power, which is increased many times over by the addition of certain essential oils. The high dilution rates also make these cleaners very economical. Especially since they also reduce the subsequent build-up of grime and odours and keep mould at a distance if used on a regular basis. Spring cleaning throug-

hout the house will be a cinch, because these GMO-free cleaners are especially gentle to the skin and practically do all the work by themselves. You can either spray the diluted solution or use it in your cleaning bucket. It is important that you give it 3-5 minutes to penetrate the surface you're cleaning so that the microorganisms can unleash their full power. The applications are as varied as the range of products, including bathrooms, kitchen, any living space... They are actually suitable for all surfaces. With the lasting side effect that there is virtually no dirty water to dispose of. Deposits are prevented from building up in the drain pipes or you can use the water to water your plants. Speaking of watering: cut flowers stay fresh longer if you place 15 EM ceramic grey pipes in the water. The water becomes softer and the bad smell that usually begins to come off the water after about 5 days stays away. The EM ceramic pipes have already convinced many users in the water treatment industry, because they revitalise drinking water and increase its quality.

What's good for us humans is also good for the plant world, that's why the pipes are also being used by EM users when they water their gardens. Because spring is the right time to take your first EM steps in the garden, on the terrace or on the balcony as the days get longer and we start moving life out-of-doors again. Garden furniture will look new again when cleaned with eMC diluted in water (1: 100). eMC Power Cleaner removes terrace surfaces of the dirt built up over winter and any algae formations. The more resistant the stains, the more concentrated the solution should be. In particularly serious cases, use a 1:10 solution; normal grime can be cleaned with a 1:100 solution. By the way, the power cleaner also works in swimming pools. Using EM in the pool means you can do without those chemicals that are harmful to the environment and irritating to your skin! It's also important to avoid these chemicals because they can harm the many beneficial insects we need to control plant pests in our gardens.

Finally, you should also do something good for yourself and treat yourself to an EM foot bath. Because the feet has reflex zones that connect to all of your organs. As the moon is waxing, introduce important minerals and valuable antioxidants to your body's system through the soles of your feet. As the moon wanes, the toxic and dangerous metabolic waste is released from your body. Recipe: 1 tablespoon Manju sea salt, 50 ml EM Active and 1-2 tablespoons Manju in three to five litres of pleasantly warm water (recommended soaking time: 20 minutes).



EM-Ceramic Pipes provide your irrigation water with a clearly higher quality.



eMC Cleaner for Textiles ensures gently soft and clean laundry.



An electrochemical analysis of Manju

Prof. Dr. Manfred Hoffmann

There are several reasons to electrochemically analyse Manju, a Japanese fermentation beverage which has been successfully offered in German-speaking countries for 17 years. The name translates as „10,000 years old life“ and gives the impression of offering a revitalizing effect. In fact, there exists, in addition to many long-term positive experiences in Japan, a stable German-speaking fan base which attributes many health benefits to the drink. Because in addition to the chemical ingredients, the redox potential of a food allows a good estimation of its health value, the study described here is at this point only a rough approximation, since precise statements are so far not available (1).

Manju consists of 65% water, 12% rice bran, 10% brown rice, green papaya 8% and 5% seaweed. These figures are certainly not reason enough to specially import a drink from Japan. What is so particular here? These raw materials are subjected, in connection with specific microorganisms, to a prolonged and careful fermentation process - similar to Sauerkraut production - in which over several microbial transformation processes a yellowish liquid is produced. This liquid, neutral in taste when drunk, has been ascribed with antioxidant properties. The special factor in Manju appears to come from the young green papaya fruit, which in contrast to the old, mature fruit retains much of the enzymes papain, carpain, acetogenin, chymopapain, lysozyme, amylase and lipase and the microbiological fermentation process. Rice is not prominent as an active ingredient and serves mainly as fodder base for the specially selected microorganisms (2).

Contents	papaya	seaweed
potassium	211 mg	50 mg
calcium	21 mg	150 mg
magnesium	41 mg	107 mg
vitamin C	80 mg	3 mg
vitamin A	550 i. u.	360 i. u.

Table 1: Health-related ingredients in 100 mg

While the main health valuable constituents (Tab. 1) remain available in Manju and are likely to have a high bioavailability because they are still naturally allied with the whole fermented papaya and sea kelp, the carbohydrates and proteins from the food rice are rebuilt by the microorganisms into a variety of microbial metabolites, so melanoidins may be detected at the end of the processes. These melanoidins, readily integrated into the blood stream, are also said to have an antioxidant effect.

The starting point for the feasibility study was an investigation of this antioxidant effect. A redox potential measure (oxidation reduction potential, ORP) was used, whereby the oxidative stress of a subject through a drop of capillary blood from the fingertip was measured, first with an empty stomach and then after ingestion of 2 cl Manju and again after 30 and 60 minutes.

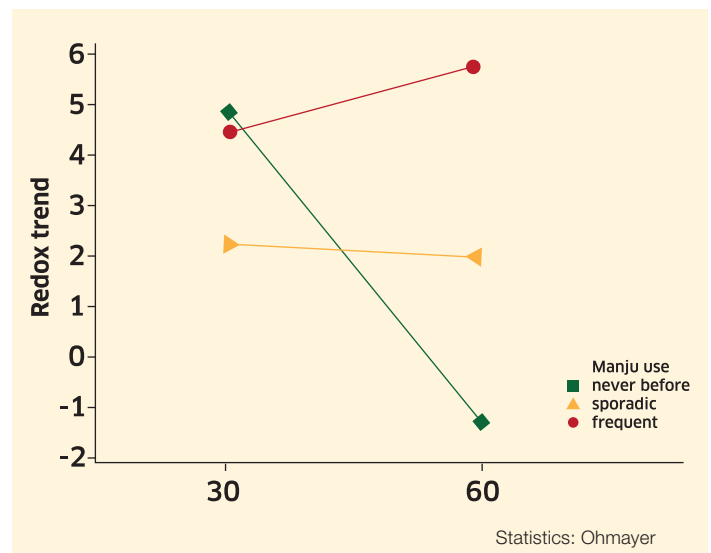


Figure 1: Trend during the redox potential 30 and 60 minutes after Manju consumption. The more negative the value, the greater the antioxidant effectiveness of the sample.

A statistical analysis showed the following correlations (Figure 1), which, unfortunately, because of the large heterogeneity (age, consumption of medicines) and small number of subjects (35) fail in statistical validity. But the measurements do show three tendencies of practical importance. Manju prompted a unique antioxidant response in the majority of subjects who had previously not drunk Manju. A minor antioxidant effect resulted in subjects who had sporadically drunk Manju; these are likely to have a lower pent-up electron energy demand. Larger problems were caused by the interpretation of the results from subjects who regularly, that is daily, drink Manju. These subjects either had an electron-energy oversupply and thus a certain „reaction rigidity“, or their electrochemical energy cascade (Figure 2) ran at such a time offset to the temporal measurement points that 30 and 60 minutes after Manju consumption the true situation could not be measured. **In summary, the feasibility study be interpreted as follows:**

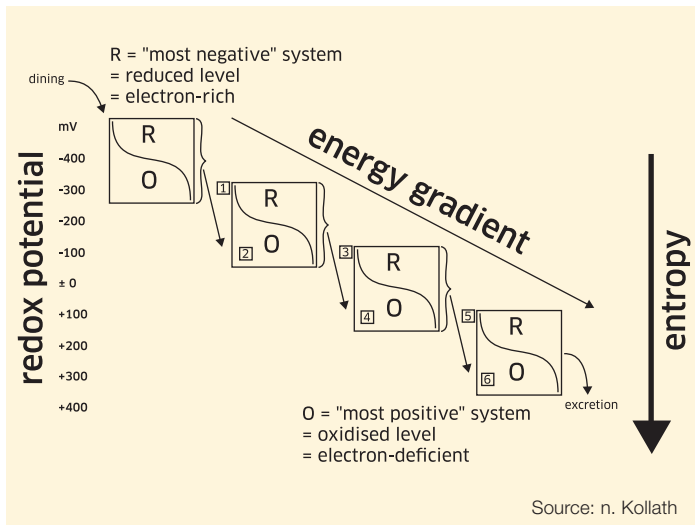


Figure 2: Energy cascade
 An energy cascade means that we include energy electrons in our nutritional plans, and that the body uses these in a very complicated chain which breaks them down. (= break down) in electron-poor feces and urine excrete.

1. Manju has an antioxidant effect, which means that the body provides electrons to neutralize free radicals, i.e. make them ineffective. Free radicals are produced during metabolic processes and stress loads of various kinds (environmental chemicals, unbalanced diet, excessive sports, etc.) and lead to excess so-called „radical diseases“, which include most of civilization diseases and premature aging.

2. Adjusted consumption demand supports the neutralization of free radicals, habitual uncontrolled consumption of Manju possibly results in a surfeit of electrons in healthy individuals, which can lead to a „reaction rigidity“. To eliminate this problem, a cyclic use of Manju would be a useful measure, which coincides also with experience in the medical field according to which medications should be discontinued after certain periods in order to restore their optimal effectiveness.

3. Today it is possible, with a drop of blood in a test lasting 2 minutes and costing EUR 4, to determine the actual stress state of a person and thus to optimize the consumption of Manju and the entire nutritional process. This would at a minimum avoid premature aging, in order to earn the claim of „ten thousand years of life“.

Of course, it would be desirable that the results of the presented feasibility study be strengthened and expanded by more extensive and detailed investigations!

“ Manju has an antioxidant effect, which means that the body provides electrons to neutralize free radicals, i.e. make them ineffective.

1 Prof. Dr. Manfred Hoffmann // 2, 3, 4 Dr. med. Heidi Öllinger and Prof. Dr. Manfred Hoffmann during the ORP measurement: Carried out by with a drop of capillary blood from the fingertip



Further reading:

- (1): Hoffmann, M. et al: „Lebensmittelqualität u. Gesundheit – Bio-Testmethoden auf dem Prüfstand“ [Food Quality and Health - Bio-assay methods tested.] Ökologische Konzepte Nr. 103; baerens & fuss, Schwerin (2007); out of print; Remaining copies: www.multikraft.com
- (2): Ehrenberg, D.: „Papayablatt – die wertvollen Enzyme der Tropenpflanze“ [Papaya leaf - the valuable enzymes of the tropical plant]; raum & zeit H 191/2014, from page 16.

Beauty lies in our Nature

Fortunately, there is a growing interest in diets of organic food. More and more people are looking for a balanced diet to improve their quality of life and they appreciate the richness and diversity of nature. Little by little, awareness is growing about cosmetics and skin care products that strengthen our skin with all the power of nature in its natural function, completely without chemicals - because the preservatives, stabilizers and fragrances contained in conventional cosmetic products can cause contact allergies. Bioemsan Natural Cosmetics is made entirely from certified organic raw materials and thus protects our skin and the environment. We refrain completely from animal testing.



7 Tips from Katharina Krebs for Effective Natural Cosmetics

Care and Protection

With conventional cosmetic products, we apply mineral oil products such as silicones, parabens and paraffins to the skin, which seal and dry out our pores. Paraffins are inexpensive and therefore frequently used in the cosmetics industry as a substitute for truly sustainable nourishing oils. Those looking for cosmetics without paraffins, are on the safe side with certified, natural cosmetics from bioemsan. bioemsan contains all-natural ingredients such as herbal extracts, essential oils and herbal water. These nourish the skin, let it breathe and provide it with moisture. Bioemsan products win you over the moment you apply them to the skin through their smooth texture and natural, stimulating fragrances.

Holistic Skin Care

Fresh air, a balanced diet and plenty of water - these things are always right. Those who drink two liters of water or tea prevent the skin from dehydrating. Regular ventilation and placing a bowl full of water and ceramic pipes on the stove or heater help to counteract dry, indoor air. A balanced diet rich in vitamins completes the sense of well-being.

Unique and Effective

The effective microorganisms present in the bioemsan products boost the effectiveness of the ingredients. They have regenerative and antioxidant effect. In this way they build up the natural, protective layer of the skin, refine the pores and slow down the aging process.

List of Ingredients

All ingredients in cosmetic products must be listed with the international INCI names (International Nomenclature of Cosmetics Ingredients). The ingredients can be found in the ingredients list under „Ingredients“ on the packaging of the bioemsan product with the botanical name in English and German. The order in which the ingredients are listed shows which substances are present in the highest concentration.

Not Tested on Animals

All European producers of cosmetics are responsible for ensuring that their products meet safety standards. Animal testing was long considered the safest method for testing chemical ingredients and products. While animal testing for beauty and skin care products has been banned in the European Union since 2013, cosmetic raw materials are still being tested on animals for authorisation under the provisions of legislation on chemicals.

- bioemsan works in harmony with humans, animals and nature and does not use any synthetic ingredients and thus no animal testing.



Fairness for Beauty

Fair wages, social commitment, organic farming - bioemsan relies on fairly traded materials.

Certifications

Organic seal of approval used to identify products from organic production. How are organic cosmetics recognisable and what differences are there? The chapter „Organic Cosmetics“ from the Austrian Codex Alimentarius provides one of the strictest standards for organic cosmetics, which are regularly reviewed through checks.

- At least 95% of the agricultural components used come from organic farming
- The products are GMO-free
- Raw materials are handled gently and in a way that is environmentally friendly
- Fair trade with producers, support and establishment of appropriate social projects
- No animal testing
- We aim for 100% natural ingredients. Use of chemically modified preservatives up to a maximum of 5% only



The bioemsan product range



New bioemsan Products

We develop our bioemsan product range continuous. Suitable for trends and market requirements, there are regularly new bioemsan products. In addition, 2 times a year there are special spring and Christmas packages.





Australia **Germany** Sweden Netherlands **Austria**
USA Indonesia Slovenia **Croatia** New Zealand **Japan** Turkey
Portugal **Hungary** Finland **Italy** Czech Republic Switzerland
Spain Great Britain Singapore **France** Malaysia **Poland**