



multikraft

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Impressive

The microbiome consists of a large number of microorganisms. In symbiosis with the microbiology surrounding them, plants form for example a strong immune system. Through the use of biostimulants such as beneficial microorganisms, plants can make better use of biological networks and thrive healthily. **Page 6**

Successful

What began as a small farm shop in the 1960s is now an impressive business. The Bursch organic farm in Germany has been committed to the Demeter quality of fruit and vegetables. The Multikraft system is a successful component of cultivation. **Page 10**

Robust

Macadamia nuts are produced for the world market in Queensland, Australia. Here too, agricultural enterprises are confronted with extreme weather conditions. Conor O'Brien and Tim O'Dea report on how farmers use fermented compost to strengthen soils and macadamia plantations and how the Multikraft system achieves very good harvest results. **Page 14**

Multikraft is climate neutral



"We offset our CO₂ balance with the corresponding number of certificates, thus making our company and our products climate-neutral",

Managing Director Lukas Hader

For example, let's walk through a day in the life of Multikraft. We are always thinking when and where can we act in a climate-friendly way? What possibilities for change do we notice? Which step is easy or immediate? Every little thing makes a difference. Some changes may require a slightly longer breath. We as a company have taken a very close look at the consumption of resources. CO₂ emissions have been saved in all areas, and the energy supply at the company location itself is climate-neutral.

As efficient and ecological as we have been for many years, we still emit CO₂. Through our traffic volume and through transports or purchases from external suppliers. We offset these unavoidable CO₂ emissions with certified climate protection certificates. We are thus supporting a VCS-certified forest reforestation project in Uruguay and a UN hydropower project in Mali and Senegal.

Multikraft is the first company in our industry to voluntarily offset its emissions under the Kyoto Protocol and offer climate-neutral beneficial microorganism products.

Have we sparked your curiosity? More information can be found in the cover story on page 4.



Multikraft products are climate neutral from 2020 on and carry the 'CO₂-neutral-logo'.

2020

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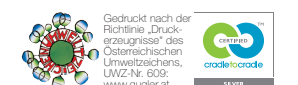
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Photos: Multikraft, Multikraft Probiotics Australia, Shutterstock, Cover: Shutterstock

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LOGICAL STEP

MULTIKRAFT IS CLIMATE NEUTRAL



What world do we want to leave our children? Are we going to continue as we are or will we take new steps? Progressive, forward-looking and based on partnership, Multikraft is leading the way and, as a climate-neutral company, is making a contribution to the world of tomorrow. Greenhouse gases are distributed evenly in the atmosphere and it is clear worldwide that man-made emissions must be reduced. According to calculations by the Intergovernmental Panel on Climate Change, this costs only 0.6 % of the annual value added. The elimination of damage caused by excessively high emissions cost much much more.

We are increasingly feeling what glaciologists, forest scientists, marine biologists and climate researchers have been observing for a long time. By the end of the century, if we do nothing, the earth will warm up by an average of 4 degrees Celsius. The consequences include heat waves and storms, melting glaciers, rising sea levels and floods. Warming must be limited to 2 degrees Celsius. Better still at 1.5 degrees Celsius. Sounds little, but makes a big difference. States, cities and municipalities are called upon to find solutions. In addition, there is a need for considerable commitment on the part of both citizens and companies.



LOW FOOTPRINT

"From the very beginning, we take care to keep our ecological footprint as low as possible", emphasizes Lukas Hader, Managing Director of Multikraft. "The company has been a Climate Alliance member for more than eight years. The CO₂ emissions have been reduced in all areas of our company and the energy supply is climate neutral." The family business covers the energy requirements for production and office operations with renewable raw materials and a 60 m² solar plant. The wood chips come from the region, electricity is obtained from eco-energy, printed matter and brochures are climate-positive. A heat exchanger was installed in the production area and in the new office building instead of an air conditioning system. This results in residual heat from the production processes being reused.

CO₂ BALANCE AND CLIMATE PROTECTION PROJECTS

The next logical step – Multikraft has been certified as a climate-neutral company since October 2019. What does that mean?

Well, emissions cannot be completely avoided in business. "As there is no train or bus station near our company location, employees have to rely on their cars to get to work. We buy plastic and cardboard for production and therefore are co-responsible for delivery traffic. We work with partners and dealers worldwide and know that aviation emits a lot of CO₂. We wish to compensate our CO₂-emissions, however at the moment there aren't any suitable alternatives", explains Lukas Hader.

With the support of Fokus Zukunft GmbH and using recognised calculation models, all emissions that Multikraft generates through business trips, the transport of external suppliers or the upstream chain of purchased goods were calculated. Our footprint amounted to around 3,995 tonnes of CO₂-equivalent pollutants per year. Based on the CO₂-balance, the amount for voluntary investment in certified climate protection projects is calculated. "For me it is logical to advance with consistent solutions. It is not just a question of showing a fig leaf. Everything we do as a company that causes emissions must be considered", says CEO Lukas Hader, who is committed to solutions. 'A modern indulgences trade to appease the conscience', as some critics think? Lukas Hader responds: "I see it as a solid thing that we contribute to climate protection worldwide with certified climate protection projects and are CO₂-neutral."

Photos: Shutterstock

POSITIVE IMPULSES ON SITE

For 2020–2022, Multikraft has offset the company's greenhouse gas emissions with a total of 12,000 climate protection certificates. These certificates support a reforestation project in Uruguay and a hydro-power project in Mali and Senegal under the auspices of the United Nations. "The projects are certified by the UN, for example, and are important drivers of environmental protection and new technologies in their respective regions. Instead of cheap coal-fired power plants, the climate protection certificates are used to build forward-looking projects", says Lukas Hader.

In emerging and developing countries, the potential for saving greenhouse gases is very high. For their commitment, the climate protection projects receive emission credits in the form of certificates. The amount is measured, for example, by a comparison with the emissions that would have resulted from the construction of a coal-fired power plant. The projects thus promote the transfer of clean technologies, promote sustainable economic development and contribute to improving the local social situation.

Lukas Hader concludes: "As a company, we can raise awareness and act in a climate-friendly manner. Our workforce can be proud that we are doing something meaningful. Our customers also appreciate our voluntary and active commitment to the climate."

UN-CER HYDROPOWER PROJECT SENEGAL

Mali, Mauritania and Senegal are supplied with clean energy. Fossil fuels have been replaced. The air quality in the surrounding area is improving and this in turn has a positive effect on the health of the population. (CER = Certified Emission Reduction)

VCS-CERTIFIED FORESTRY URUGUAY

A total of 21,000 ha of land is planted with trees instead of meat cattle. The forest plantations are used to produce high-quality, durable wood products and to store large quantities of carbon dioxide from the atmosphere. The forests consist mainly of Eucalyptus grandis plantations. They are cut and thinned so that they can then be used for sawing and veneering. They are managed in accordance with the FSC (Forest Stewardship Council) standard for sustainable forestry. (VCS = Verified Carbon Standard)



Herbal defence

Communication and networking for healthy growth

The saying "it's a jungle out there" conveys a dangerous even threatening environment, in which only the fittest are able to survive. Plants use both physics, chemistry and microbiology to adapt to their habitat and to protect themselves against pests and diseases. They develop thorns and spikes, hairiness or denticulated leaves to keep off herbivores or insects. Dermal tissue, like bark or epidermis, represents a barrier for pathogen microorganisms. The wax-like coating of leaves and trunks (Cuticula) are hydrophobic and prevent settling of plant pathogens.

Other plants produce biochemical substances, which are nettling, have a bitter taste or which are toxic. As wounds always are preferred targets for infections, these strategies, known as preformed defence, protect plants against being devoured and resulting lesions. If pathogens penetrate a plant an induced defence is triggered: cell walls are reinforced, biochemical metabolites are formed to interfere with development and spreading of pathogens or even kill them. Already infected cells can be isolated by apoptosis (programmed cell death) to prevent further spreading of the infection within the whole plant. Within the ecosystem soil, plants, soil life including bacteria and fungi are trading resources like water, nutrients, metabolites and space in an efficient network.



Mag. Robert Rotter
Ecologist, organic farmer
and pond specialist

Microbiology for plant health

With the research on the phytobiome (all microorganisms living in, on and around a plant), we gain more information about a complex and invisible network, which is the basis for healthy growth and development of plants.

In addition to gaining knowledge, the main goal of this research is to improve the growth and health of crops by altering the phytobiome. Microbiology can activate the plants own defense mechanisms, stimulate root growth, mobilise nutrients and, for example, promote dry resistance. These effects can be observed in the application of Multikraft technology.

The core microbiome of seeds

Already on the seed there is a microbiological basic equipment, the 'core microbiome'. Each plant species lives with a species-specific composition of this microbiome. The microbial society of the 'core microbiome' consists of a multitude of bacteria and fungi, which are mutualists (advantage for host and settler), but also of pathogens.

The germinating plant is already colonised by the microbiome on the seed, which then spreads to the roots, stem and leaves of the plant. It is the microbiology in the rhizosphere (the soil surrounding the root) that not only mobilizes nutrients such as phosphorus or nitrogen, which are difficult to obtain for plants, but also balances these nutrients. It also creates environmental conditions in which the development of plant pathogens is inhibited (Biocontrol). In return, the plant segregates nutrients in the form of root excretions (exudates), which feed this microbiology and promote its development.

Plant immune system

Other bacteria and fungi of the 'core microbiome' migrate into the plant and thus lead to an initial immunization and activation of the plant's own protective mechanisms. Similar to an immune response in humans or animals, the plant can now react to and protect itself against pathogens much more quickly and effectively.

Plants are not able to produce antibodies, but they can develop different defence mechanisms by producing biochemical substances that are toxic or growth-inhibiting to pathogens.

There are two types of this „pre-immunisation“ – the first, systemic acquired resistance (SAR) where the immune response is triggered by contact with pathogens. The second, induced systemic resistance (ISR), where the immune response is triggered by non-pathogenic microorganisms such as rhizobia. Rhizobia or nodule bacteria are soil bacteria that live in symbiosis with legumes (legumes such as clover, peas, soya). Root excretions chemotactically attract nodule bacteria, which are able to move in the soil to the host plant. Only after they have been recognised as suitable by the plant, the nodule bacteria begin to attach themselves to the root hairs and penetrate into the root hair cells. This infection then leads to the formation of the name-giving root nodules, in which the bacteria can develop protected by the plant. Elementary atmospheric nitrogen is now bound by the rhizobia and converted into plant available nitrogen. At the same time the infection with nodule bacteria also leads to an immune response that protects the plant against different pathogenic microorganisms.

Advantage for both sides

This well-researched symbiosis is a good example of how plants communicate and network with their environment and it's microbiology to their mutual advantage.

The use of biostimulants, including Multikraft technology, enables plants to adapt better to their environment, boosts biological networks and activates natural defence mechanisms. This enables plants to a healthier growth on their own.



Photos: Multikraft, Shutterstock



Mindful overall

Botrytis-free without chemicals

Botrytis cinerea is one of the most common plant-damaging fungi, causing much more damage in greenhouses. Horticultural company Woisetschläger, Vienna, shows us how to produce healthy herbs, vegetables and ornamental plants without the annoying fungus while being completely chemical-free. By using the correct climate control in greenhouses combined with the consistent use of the Multikraft system, this allows high-quality plants to thrive.

In the 5th generation Viennese family business Woisetschläger produces an all-round range of herbs, vegetables, bedding and balcony plants. The family and twenty employees work in the greenhouses and foil houses, with production area for potted crops of around 23,000 m². The Multikraft system is used throughout the entire production process. Firstly, the greenhouses are cleaned with Beneficial Microorganisms then the young plants are given a plant strengthening Multikraft cocktail. All crops are potted in Multikraft production soil and then treated weekly with the Multikraft components using various irrigation systems.

The substrate fits

High-quality substrate forms an important foundation for Elisabeth Woisetschläger, who swears by the Multikraft production soil. It dries evenly and has a very good water absorption capacity, "If the substrate fits, that's half the battle for production. You shouldn't save money in the wrong place. Good substrate is an essential component of our production and a basis which facilitates further applications."

Minimized infestation pressure

Multikraft's components are specifically adapted to each crop to assist with plant strengthening. 'Ornamental' plant have different Multikraft cocktails from vegetable plants. "The composition of the Multikraft components also depends on weather and light conditions varying from winter to summer", explains Elisabeth Woisetschläger. She also emphasizes: "The most important thing is the consistent use of the Multikraft system and that the climatic conditions in the greenhouse are suitable. This overall constellation with healthy microbiology strengthens the plants. Whether it's disease or pest pressure, there are no major problems right from the start."

Botrytis-free without chemistry

Botrytis spreads strongly under appropriate microbial conditions, especially in greenhouses. In the Woisetschläger nursery, the annoying fungus can no longer harm the plants. A dedicated gardener manages to produce her plants botrytis-free even in difficult weather conditions without any chemicals at all. "It is important to create good climatic conditions, shade the greenhouses if necessary, ventilate them regularly and dehumidify them. Together with the Multikraft system, we create an optimal overall constellation."

Elisabeth Woisetschläger links the correct climate control with the consistent application of the Multikraft system, thus ensuring that Botrytis has no chance. There are hardly any pests. "The consistent use of Multikraft components is the be-all and end-all. Sporadic applications make no sense and are a waste of money. The best thing about the Multikraft system, is that it can be used by anyone without hesitation and without any protective clothing. This is very important to me because it simplifies a lot for us." On top of that, new life in the greenhouse is stimulated. Bees and butterflies are around again, because the Multikraft system provides a completely natural environment in which beneficial insects feel comfortable. "Yes, healthy microbiology brings beneficial insects back into the greenhouse. You just notice that they like to be there."

New marketing opportunities

In addition, the cultures are more durable and therefore the sales period is extended. There has been no loss of adult plants. All additional advantages! And with the naked eye the more intensive flower colours are visible. "Our bedding, balcony and vegetable plants are all more vital. If the plants feel well and are strengthened, little or no pests and diseases are present. The root picture is visible more quickly, the roots are more beautiful and pronounced. We also notice an early flowering which increases our yield and sales volumes."

For the end consumer, naturally produced plants are very appealing. "Our customers receive superb quality. People want to move away from conventional methods and are prepared to pay a fair price for it." According to Elisabeth Woisetschläger, vegetable plant seller, "Our special labels show which natural Multikraft components have been used to treat them. Perhaps this will give our customers new ideas and help them pursue this natural path in their private gardens."



The labels show which Multikraft products have been used.



A very pronounced root appearance thanks to the use of the Multikraft system.

Photos: Multikraft, Woisetschläger



Half a century

BIOHOF BURSCH



Fresh, seasonal and regional – you can taste it.

It all began in the 1960s, when Heinrich Bursch planted potatoes and allowed them to thrive without chemical agents. This was not an easy time for the family business from Bornheim-Waldorf in Germany, who founded their first farm shop in 1968. Over the years, traditional knowledge and alternative cultivation methods were further developed. Today, organic fruit and vegetables are produced in the best Demeter quality. The Multikraft system has been a fixed and successful component of vegetable cultivation for over four years.

The family business is located in Cologne-Bonn-Bay and is managed by fourth generation siblings Heinz and Renate Bursch. Over sixty varieties of fruit and vegetables are produced on an area of around 44 hectares of open land and 7,000 m² of foil tunnels. The assortment includes fresh Bornheimer asparagus, strawberries, tomatoes, cucumbers, various cabbages, herbs, salads and much more.

Mindfulness in cultivation

Cultivation and processing are carried out according to Demeter guidelines. Like organic farms, biodynamic agriculture also involves the continuous improvement of the soil and the consistent strengthening of plants. The preparation practice with minerals, medicinal herbs and manure also plays a special role. The principle is to strengthen the plants, increase the fertility of the soil and produce food of high quality.

Stable plants, higher yields

The Multikraft system is the perfect match. "It fits very well into the management of the farm", reports Orhan Güven, who has been working at Bio-Hof Bursch for over 20 years (in charge of the entire agricultural sector since 2008). "We are seeing very good results. The plants remain stable and healthy and after four years of regular use, we notice that yields are increasing."

The Multikraft system is used, for example, for cucumbers, tomatoes, peppers and salads. "We harvest around 600,000 lamb's lettuces per year. The harvest in mid-January 2019 was great, the lettuces were stable and hardly any yellow leaves were visible. The Multikraft system is very effective and works perfectly in the greenhouse and as a result powdery mildew and other fungal diseases are very rare. My goal is to carry out even more foliar treatments in the field by 2020", continues Orhan Güven.

Strong young plants

All young plants are watered with the Multikraft products BB Soil, Terrafer Soil and EM Ceramic Powder, promoting root formation and strengthening the young plants from the beginning. The leaves are also treated regularly with the components BB Foliar and Terrafer Foliar. The salads as well as the vegetable plants grow strong and healthy, completely without chemicals. They are very popular because of their high quality and intense taste. "We do not receive any complaints from the farm shop or the markets", Orhan Güven is pleased with the results and is taking further steps on the basis of his positive experience with the Multikraft system to date.



Wilfried Hennes, Vegetable Growing Consultant in Nordrhein-Westfalen, Germany and Orhan Güven, Agricultural Manager at Biohof Bursch

Rottel control

After harvesting cabbage vegetables, BB Soil is worked into the soil for rotting steering: "We did this for the first time in 2019 by spraying the remaining cabbage leaves with BB Soil after harvesting and worked them into the soil. The incorporation of Beneficial Microorganisms is very good for the soil, with each application supplying more and more humus into the soil and ensuring good fertility."

Demand for direct marketing

What began half a century ago with the cultivation of potatoes without chemicals, is today a company that stands for high quality and careful cultivation.

In 1968, the direct marketing of self-produced food began at Biohof Bursch. In the 1970s, the Bursch family gained professional and private customers with the first organic shops. In the mid-1980s, the organic farm expanded. Even then, the initial mockery had given way to astonishment, "the fact that farming which was respectful of people and the environment worked so well".

Today, the organic products are sold on 17 market stalls in the regions of Bonn, Cologne, Leverkusen and Bergisch-Gladbach. Many private customers from surrounding areas shop here alongside commercial customers, be they kindergartens and schools or retailers and restaurants.

What began as a small farm shop is now an impressive 600 m² shop with its own organic products and an extensive range of natural foods with lunch served in the popular bistro. A cosy café invites you to linger with homemade cakes and tarts. "We buy from the Bursch", is the local saying. Fresh, seasonal and regional – you can taste it.



Managing Director Heinz Bursch is delighted about the successful potato harvest

Photos: Multikraft, Biohof Bursch



The greater the diversity of plants, the better: Leguminous crops such as peas mixed with other catch crops are an important measure of humus formation.

The skin of the earth

Targeted humus formation makes the difference

The advantages are obvious: Healthy field crops thrive in healthy soils. Intact soils promote yields and are better protected against erosion. In light of increasing weather extremes, humus soils are an important factor for agriculture. Gentle soil cultivation, optimum organic fertilisation, consistent recirculation of harvest residues and catch crops or undersown seeds are among the effective measures of humus formation. Multikraft technology supports regenerative agriculture and promotes vital soils.

Humus, the skin of the earth, consists of nutrients that are available to soil organisms and plants. The decomposition and conversion of nutrients creates a cycle that is essential for healthy soils and plants. The many substances contained in humus give the soil structure and storage capacity. These properties enable humus to withstand heavy rainfall and storms, to store water and to bind carbon.

Carbon is mainly stored in humus and is known as carbon sink. If humus is lost, carbon escapes into the atmosphere as climate gas CO₂. The higher the humus content, the more carbon dioxide the soil can absorb from the air – a huge opportunity for climate protection. The reduction of CO₂ emissions by absorption and storage in soils can be improved with targeted humus formation.

Soils with a high carbon content are more fertile because they store more nutrients and water. Humus also sustains more life, such as microorganisms and earthworms and other soil organisms, which continuously decompose dead plant parts, aerate the soil and ensure good soil structure.

Organic fertilization with compost

"Humus is essential for the soil", says plant manager Franz Reidinger of Harmer KG. The 250-hectare organic farm in Lower Austria operates an organic composting plant and has been incorporating Beneficial Microorganisms into the compost material for more than 20 years. The well fermented material invigorates the soil.

Multikraft technology is also regularly used for soil treatment. "We drive three times across all soils with BB Soil and three times across all crops with BB Foliar and BB Multical", reports Franz Reidinger, who also incorporates all harvest residues into the soil. This benefit, which has been consistent for many years, is now measurable in the figures.

Structure of permanent humus

"In our area, the humus content is between 1.4 % and 1.9 %. In 2018 we found a humus content of 3.8 % in the soil. The humus content has increased by 2.4 % in twenty years", says Franz Reidinger, who also cultivates the fields with the cultivator to protect the soil. With these measures, around 541,000 kg of CO₂ are retained annually on the farm. "Minimum tillage is one of our guiding principles. Flat, turning cultivation saves a lot of fuel and is therefore also more climate-relevant", explains Lukas Hader, Managing Director of Multikraft. There is a great untapped potential slumbering in our soils, which can be promoted through consistent use of Multikraft technology. Lukas Hader: "The right carbon-nitrogen ratio (CN ratio) in the soil is important for the humus structure. When spring fertilization is applied to the main crops, there is often a large overhang of N. This means that there is a risk that this nitrogen overhang will be washed out into the groundwater or migrate into the air. FHE (Fermented Herbal Extract) and plant charcoal can be used in animal husbandry to counteract this risk."

Organic fertilization with stable manure

Franz and Harald Tschiggerl, who run a chicken fattening and arable farm in Styria, know how effective this process can be. They work completely without antibiotics in chicken fattening and have been regularly adding FHE (Fermented Herbal Extract) and feed coal to chicken feed for around six years. Franz Tschiggerl is very satisfied: "This combination brings about a positive development in the intestines of the chickens. The ammonia content of the stable air has been reduced by two-thirds and the manure is of a better quality."

Vegetable charcoal is used as a feed aid, to build up humus and to preserve organic fertilizers. FHE (Fermented Herbal Extract) produces less climate-damaging gases such as methane, nitrous oxide or ammonia. A good combination for spreading the chicken manure as organic fertilizer on the fields.

"Our chicken manure is therefore of higher quality and we need less of it for spreading", reports Franz Tschiggerl, who, together with his son Harald, also spreads the chicken manure on crop residues in autumn so that they decompose more effectively. "We use chicken manure in every crop, whether it's pumpkin, corn or grain. The trace elements in the fermented chicken manure provide the plants with a balanced nutrient ratio and the organic fertilization is particularly beneficial for humus growth."



Franz Reidinger inspects a fermented onion in compost at the Harmer KG composting plant in Spillern, Germany

Straw and stubble treatment

The consistent recycling of harvest residues is an important measure for humus growth. Lukas Hader from Multikraft: "We can achieve a great deal with proper decomposition management through the treatment of straw and stubble with BB Soil. This increases the microbial activity in the soil." The straw remaining in the field is quickly converted into humus because Beneficial Microorganisms decompose the organic material more quickly. "BB Soil specifically contains bacterial cultures that are able to degrade very woody byproducts, such as those found in straw."

Humose soils promote good yields, better withstand extreme weather conditions and contribute to climate protection. There are a lot of advantages and targeted humus formation makes quite a difference.

Even 30–50 litres of BB Soil per hectare activates soil life and promotes humus growth.



Multikraft customer Hinkler Park Plantations is the largest macadamia farm in the world



Multikraft BACE (Bundaberg Australia Centre of Excellence). The Australian subsidiary has been operating this 50 hectare farm for three years as a test site (macadamias, blueberries, mangos) and produces bokashi and Multikraft products for the local market.

From the root to the crown

How Australian farmers defy weather extremes, strengthen nut trees and create record harvests

Macadamia nuts are produced on a global scale in Queensland, Australia. In this part of the world, increasing weather extremes are also a hard nut to crack for food producers. Conor O'Brien, CEO of Multikraft Probiotics Australia and Tim O'Dea, Director of Ag-Plus Consulting, explain how farmers deal with these stresses. They also report on successful composting using Multikraft technology, which strengthens soil and plant health and leads to very good harvest results.

Weather extremes and climate change are a concern for people around the world. What is the situation in Australia like?

Conor O'Brien: In Australia it is getting warmer overall and our weather extremes are becoming the norm. These include long periods of drought, followed by severe flooding, which are very damaging to our harvests. We also experience cyclones and forest fires from season to season.

The effects of such weather extremes are clearly noticeable. Agriculture is among the industries directly affected by these changes. How are farms in Australia responding?

Conor O'Brien: Farmers, for example, are installing irrigation systems

and moving more towards protected farming. Extensive research is being done into varieties that are more adaptable. Farmers are also becoming more aware of the importance of improving soil health so that soils can better withstand drought and flooding and store more CO₂.

Australia is getting warmer overall. The growing seasons are changing and so are the soil conditions. How do you deal with this?

Conor O'Brien: Yes, we are noticing that our plants bloom earlier in the year. We are countering the premature growing season by starting our Multikraft program earlier. Farmers need to be prepared and well organized to manage seasonal changes. We also irrigate more to compensate for declining rainfall.

Australia is known as the home for macadamia nuts.

What conditions do macadamia nuts need to achieve the best harvests?

Conor O'Brien: Macadamias are very robust, but compared to other tree crops they are still a relatively young industry.

Opinions and practices on how to get the best harvest vary from farm to farm, while Bundaberg probably has the most innovative macadamia farms. We see that farmers using the Multikraft system are achieving record harvests and their nut trees are much more resilient.



Conor O'Brien, CEO of Multikraft Probiotics Australia

Ag-Plus Consulting Pty Ltd was Multikraft's first and most important partner in Northern Queensland, advising local farmers on how to use the Multikraft system to achieve outstanding results. Tim O'Dea, you are the company's director and a consultant yourself. What does your company do?

Tim O'Dea: Ag-Plus Consulting Pty Ltd is based in Bundaberg, Mundubbera and Gayndah. We work very closely with farms, no matter how large or small. The company started in 2004 as a consultancy and fertiliser supplier. Since our approach differs significantly from conventional agriculture, we are strongly focused on biological measures.

We support the majority of Macadamia producers and develop nutrient programmes for millions of nut trees. We are also responsible for very large avocado and citrus growers.

Macadamia nuts are produced for worldwide trade. Hinkler Park Plantations is one of your largest customers. How large is this company?

Tim O'Dea: Hinkler Park Plantations has over a million trees spread over 4,000 hectares in Queensland and is constantly expanding, with hundreds of thousands of trees planted per year.

Photos: Multikraft Probiotics Australia

Hinkler Park Plantations produces compost that is spread under the macadamia trees. Tree pruning, macadamia nut shells and Multikraft products are used for composting. How is Multikraft technology used for composting?

Tim O'Dea: We produce compost by mixing all the raw material with the front loader. During mixing, we add one litre of MicroBalance per m³ of compost. Recently, we have added around 0.5 litres of 'SuPr-N', an Australian-exclusive product containing nitrogen and micro-organisms, to each cubic metre of compost.

The Beneficial Microorganisms are well distributed throughout the composting rent. The compost heap has a moisture content of 40-50 % and is left to rest for an average of six weeks before being spread on the ground under the trees.

Beneficial Microorganisms start a fermentation process and prevent rot. What are the advantages of this type of compost as a fertilizer for macadamia plantations?

Tim O'Dea: The fermentation process keeps nutrients in the compost. The nutrient content of enzymes, vitamins, minerals, fulvic and humic acids is higher. Once the compost has been spread on the nut plantations, the improvement in the trees is visible to the naked eye even in the first season. Nut trees are much more vibrant.

What are the general successes of the Multikraft system in Australian agriculture?

Tim O'Dea: Thanks to the overall significant improvement in soil and plant health, we can expect much more consistent harvests year after year. Thanks to better soils and healthy plants, we achieve higher quality harvests, which in turn increase the shelf life of the products.

Conor O'Brien: By working with environmentally friendly measures and using Multikraft technology, we are meeting the growing demand for healthy products, reduced pesticide use and careful consideration for nature.



Sicilian delicacies

Highest quality organic and increased yield

A journey through Sicily will impress you with its beautiful nature and charming towns. Ulrike Hader has visited the southeast of Sicily and gathered many beautiful impressions of organic farms. In the middle of picturesque hilly landscapes, the family farms produce apricots, peaches and oranges, seasonal vegetables and pulses, oregano, durum wheat and almonds. Through the regular use of Multikraft technology, they achieve better quality crops and up to 20% higher yields.

"Some of the organic farms use only Multikraft formulations. Others combine Multikraft's technology with other organic products for both fertilization and plant strengthening. The farms achieve excellent results with both approaches", says Dr. Alessandro Scrofani, an independent consultant for BioNRG, Multikraft's Italian partner company.



How do you cope with weather extremes?

Plants and fruit trees treated with the Multikraft system are generally more vibrant and more resistant. They are better equipped to withstand disease and pest pressures, as well as weather extremes, which are also increasing in this region.

Sicily's Mediterranean climate has been changing rapidly in recent years. Alessandro Scrofani: "The seasons are no longer so precisely defined and there are more and more extreme weather events, such as violent winds and heavy rain. We experience abnormal temperature fluctuations, both very cold and very hot. We also notice abnormal waves of insects, fungi and pathogenic bacteria, all of which have caused significant losses for farmers. Amazingly, crops treated with gentle agronomic techniques and the Multikraft system respond better and more robustly to these conditions."

High-yield harvests

Through regular soil and leaf treatments, plants are strengthened and show better responses to disease and pest pressure. Consistent use of the Multikraft system can be combined effectively with the use of beneficial insects. "Plants and fruit trees simply thrive in a more environmentally friendly way. For farmers, the use of Multikraft technology is definitely healthier", emphasises Alessandro Scrofani. Overall, the quality of the crops has improved and the farms are achieving up to 20% higher yields. It's inspiring to see how the organic farms in Southeast Sicily are flourishing.

Potpourri of the farms

The best quality almonds, olive oil and honey are produced by Giuseppe Lissandro's company Alkudia in Licodia Eubea and Ragusa. He cultivates his synergistic garden with biological and biodynamic techniques and has been using the Multikraft system for over two years. Nearby, in the municipalities of Modica and Ragusa, Sfoglia del Monte by Maria Lo Presti cultivates the old durum wheat variety Russello – from which, in addition to flour, numerous pasta varieties are produced – as well as legumes and oregano in controlled organic cultivation. Before sowing the wheat, she spreads BB Soil (EMa), Terrafert Soil and ZeoBas basal rock dust in the field. One month after sowing, the leaves are treated with EM Active, Terrafert Foliar and ZeoBas Ultra-fine basal rock dust.

Francesca Gugliotta and Denaro Angelo also of Modica and Ragusa, grow a colourful variety of seasonal vegetables. Picturesque, lush rows of flowers for insects are planted between the vegetable crops, while low stone walls store heat and protect against wind. Multikraft products are also a staple here. Every seven days, a mixture of BB Foliar, Terrafert Foliar, Nettle and Horsetail Extract Concentrate, Whey Powder, ZeoBas Ultra-fine basal rock dust and EM Ceramic Powder are applied to all crops. During the ripening phase, molasses is added to the Multikraft mixture.



Ulrike Hader during her visit to Sicily in spring 2019 under the almond trees of Paolo Falcone with Giuseppe Lissandro and Alessandro Scrofani.

Apricots and peaches

The brothers Michele and Antony Betta of M.A.B. Fruit, specialise in fruit growing (specifically tasty peaches and apricots) in the nearby municipality of Comiso. When looking after their fruit trees, they use organic techniques and regularly apply Multikraft technology. For soil treatment, a mixture of BB Soil (EMa), Terrafert Soil, molasses and ZeoBas basal rock dust is applied every 15 days. An additional mixture of BB Foliar, Terrafert Foliar, and ZeoBas ultra-fine, is also applied every 15 days to strengthen the leaves.

"The standard treatments are applied to all fruit crops for the entire cycle, with the exception of the period when the plant is dormant", explains Alessandro Scrofani.

Sicilian oranges at Stumpfthof

In Acate, Angelo, Gianna and Antonella Migliorisi have been producing certified organic oranges for over five years with Arance Bio Cava D'oro. For two years they have been carrying out soil and leaf treatments with the Multikraft program.

The fruits ripen to the highest quality, as Ulrike Hader confirms with great pleasure: "We had already obtained sensationally good oranges for our Advent market at Multikraft headquarters at Stumpfthof. When stored in a cool place, they have a pleasingly long shelf life and the homemade jam tastes excellent."

If you want to see for yourself and taste the juicy organic oranges, the best way is to visit the Advent market at Stumpfthof. Oranges from Sicily are offered again this year among many other delicacies.



Aubergines thrive splendidly with Multikraft technology on the farm of Michele and Antony Betta, M.A.B. Fruit.

Fotos: Multikraft, Alessandro Scrofani, Shutterstock



Recipe tip: Orange jam (for approx. 7 glasses)

Peel the rind of 4 organic oranges thinly with the zester. Chop the oranges. Important: remove the pith of the oranges, otherwise the jam will become bitter. Squeeze juice from 6-8 oranges. Finely grate 20 g ginger. Bring 800 ml orange juice, orange segments and rind, ginger, 7 star anise and 1 kg gelling sugar (1:1) to the boil and boil for at least 5 minutes. Then pour.



Mature perspective

Doing well without antibiotics

Thanks to the regular addition of FHE (Fermented Herbs Extract) in the feed, piglets and sows are in very good health. There is no need for antibiotics for prophylaxis while coccidia and diarrhea are rarely an issue. For many years, the Hinterholzer family from Upper Austria has had consistently good results with FHE in piglet production. Beate Hinterholzer, a young and courageous farmer, tells the story. She grew up with her three siblings in Tumeltsham near Ried im Innkreis in Upper Austria and will take over the farm one day. Together with her parents Sieglinde and Josef she runs the family business, which specialises in piglet production with around 150 breeding sows. The family regularly uses FHE from 1,000-litre containers in the practical Multikraft bag-in-box system for feeding and stable hygiene. Piglets and sows are healthy and especially stable during weaning.

Carefree weaning phase

At the age of four weeks the piglets are weaned by the mother sow. This is a delicate time for the sows and piglets. The Hinterholzer family knows how to approach this process with sensitivity and ease. In the farrowing area, the piglets receive on the second or third day of iron administration approximately 2 ml FHE. "My mother sprays a pump of FHE directly into the piglets mouths, just like on the fifth or sixth day, when the piglets are vaccinated and castrated", reports Beate Hinterholzer.

Strengthened digestion

"We always use the same weaning feed which we are very satisfied with. Feed coal is also added, as well as FHE and piglet peat in a highly diluted form delivered in bowls. This combination strengthens the digestion and we rarely have problems with diarrhea amongst the piglets", the young farmer is pleased with the wellbeing of the animals.

Coccidia well under control

Coccidia are parasites that predominantly infest the gastrointestinal tract of animals and can often cause diarrhea, depending on the severity of the infestation. "If coccidia occurs in a bay, we give the piglets a bowl of piglet peat and a bowl of diluted FHE. This will give us good control over coccidia. We only use drugs against coccidia specifically for the animals that are affected", says Beate Hinterholzer, who sees the use of drugs as an emergency solution and does not want to use antibiotics prophylactically.

It works without antibiotics

The graduate of the Burgkirchen Agricultural School and the Rottalmünster Higher Agricultural School has worked in several companies in the course of her agricultural internships. The young farmer moved to Denmark via a Rural Youth exchange program. There she cultivated her unique approach to agriculture, learning a lot allowing her views to mature.

"I have seen that in many farms medicines and especially antibiotics are used purely prophylactically. I do not believe that this leads to the desired success or increases the long-term wellbeing of the animals. My impression is rather that the more antibiotics you administer, the weaker the intestine becomes. I notice that our feed combination and the regular addition of FHE are very beneficial. Our animals are consistently in very good health".

Whether carrying, suckling, weaning or fattening feed, the Hinterholzer family mixes 0.5 to 1 % FHE daily in all feed rations. Rapeseed, maize, wheat, barley and soya thrive on our own farmland. Rapeseed is sold, and the other field crops are used as pig feed. Beate Hinterholzer: "It is also amazing that by consistently adding FHE to the feed, the floating cover in the slurry pit has been massively reduced".

What the animals like

The pens are washed and sprayed with FHE before the animals are placed in the pens. The sows are washed with soft soap and sprayed with FHE. "The animals really like this", laughs Beate Hinterholzer. In addition, the animals have been free of mange (a skin disease caused by mites) for years.

The animals also like something else: "If time permits, we go through the stable with a spray bottle and spray FHE. As soon as the sows see the spray bottle, they open their mouths because FHE simply tastes so good to them".



Photos: Multikraft



Dynamism in agriculture ...

... and a big plus for simple feed additives

The Unterweglehner-Hof lies in the middle of the hilly Mühlviertler landscape in Neumarkt, Upper Austria. Here, three generations of the Reinhard Prammer family live. Parents and also wife Regina with children Julia, Johannes and Veronika, who run the 79-hectare farm.

The structural change in agriculture has also made itself felt here in recent decades, leading the Prammer family to diversify their agricultural business. In addition to cattle farming they introduced two additional pillars. One of which is the foil trade for the complete silo requirement. Reinhard Prammer has nets, wrapping and flat films as well as films for ice rinks in winter in stock.

Wide-ranging agricultural service

The other is an extensive agricultural service as a contractor with three employees. "We started small by working for other farmers, which in time grew, and in 2005 we founded Agrarservice as a company." From tillage to sowing, mowing, silage harvesting, chopping and winter service, the services provided use the most modern machinery. "Our customers come from a radius of around sixty kilometres. In 2018,

for example, we mowed 2,000 hectares and cultivated 600 hectares of maize. Agricultural service is a very important pillar for the sustainability of our family business. The farm is just the right size and we don't want to get any bigger", says Reinhard Prammer.

Operational development

The farm with its typical Mühlviertler Steinbloß facade, developed from a classic dairy farm over the years to three main pillars. More than fifteen years ago, the family gave up dairy farming and hired breeding bulls from the Upper Austrian Breeding Association. A few years ago, Reinhard Prammer and his family decided to invest a lot of money into renovating and extending the farm building and its old structure. In 2016, a silo and a stable with 2,000 m² were built for cattle fattening, followed by another silo in 2017. Today about 250 cattle for fattening and 35 breeding bulls are cared for on the farm.

Feeding of fattening cattle

Reinhard Prammer regularly uses Fermented Herbs Extract (FHE) in the feeding of fattening cattle. For each feed of 2 to 3.5 tons of TMR concentrated feed (dry corn ration concentrated feed), about 10 Litres of FHE are added per mixture. "Multikraft's thousand litre container is very practical for storage and dosage. The addition of FHE is completely straightforward", reports Reinhard Prammer, who is enthusiastic about how this simple measure changed the liquid manure.

Efficient manure

Multikraft technology has a positive effect on the entire cycle. The liquid manure forms fewer floating layers. "Since we have been using FHE in our feed, we have stirred the slurry less often. As a result, the emission of ammonia is significantly lower, which is good for the animals as they inhale less ammonia." Reinhard Prammer also notices very positive changes when he spreads ammonia on the field. The slurry smells neutral, so it is not a nuisance to neighbours and is more tolerable for soils and plants." A big plus is that it is less sharp and therefore does not corrode the turf. More nitrogen is bound to the field", says the chemist in Reinhard Prammer.

So, the farm's own manure is more efficient which significantly reduces costs, since Reinhard Prammer needs less commercial manure on the fields. "With FHE this is an environmentally friendly story as we also save on electricity costs by stirring the slurry less often. The stable

climate is noticeably better since the use of FHE, the animals breathe in better air quality, are healthy and digestive problems are not an issue.

Work that is appreciated

Reinhard Prammer is satisfied with his company. At the age of seven, he learned to milk and always wanted to be a farmer: "For me, agriculture is the most correct and important profession in the world. The diversity makes me very happy. I'm in nature, managing my own time and meeting different people. You need to have a broad knowledge and be an animal keeper, mechanic and chemist at the same time." Agriculture continues to be challenged by major changes and global dynamics.

What is important to Reinhard Prammer for the future as a farmer? "Agriculture is a large open-air workshop where we have to adapt to the weather. I would like to see more understanding surrounding this. If family businesses are to survive in the face of large corporations and retail chains, agriculture also needs more appreciation. It is important that our work is appreciated."



Good news

for the environmentally friendly household

With the eMC® Dishwashing Detergent, eMC® Washing Concentrate and eMC® Oxygen bleach, Multikraft have developed new ecological products. Dr. Erika Rokita has tested them and is convinced that environmentally friendly cleaners and detergents are needed to treat nature with care.

With mindfulness, we can change our behaviour and pay attention to how we can be climate and environmentally friendly in our households. Why are ecological cleaners and detergents preferable? We must not pollute nature, the environment or our personal health! Each and every one of us can make an immensely valuable contribution. The question is: Do we treat the environment carelessly or is it important to us to relieve nature with our own daily actions? I think it is high time we think about it and take the necessary steps! There are good alternatives to the conventional aggressive cleaning agents and with the right knowledge about the relevant household hygiene measures, one will soon notice that 'less is very often more'. Classical disinfectants or strong chemicals are not needed (except for emergencies like infectious diseases etc.) In terms of climate friendliness, products that are produced locally are of course preferable!

All eMC® Cleaners from Multikraft contain Beneficial Microorganisms, lactic acid bacteria, yeasts and photosynthetic bacteria. What does probiotic cleaning mean? Probiotic cleaning is carried out with the help of probiotic microorganisms. Microorganisms are not only found in the soil, water and air, but they also colonise all the surfaces in our living environment. This is why our household also has a microbiome. By using probiotic cleaning, on one hand we are able to destroy dirt through degrading fermentative activity and on the other hand, all surfaces are covered with a regenerative microbiology. Therefore, the pathogenic germs that cause illness are deprived of their habitat and their basis for life. This is called 'colonisation resistance' in technical jargon. In addition to the cleaning effect, this also creates a healthy microclimate and a very pleasant room climate, offering no chance of survival to unhealthy germs and results in significantly less subsequent dust formation. Through this kind of cleaning we can get rid of 'bad' bacteria and support 'good' microorganisms in our living area. The often-prevailing opinion 'only sterile is clean' has long been obsolete, at least in our own homes, and has often been refuted by scientific studies.



Mag. Dr. Erika Rokita
Biologist, herbalist, kinesiologist
and Jin-Shin-Jyutsu practitioner

What about the cleaning power of probiotic cleaners?

The Beneficial Microorganisms it contains – together with the splitting power of essential oils – ensure deep-pore cleanliness and great dirt dissolving power. Due to their ability to break down organic soiling thoroughly and efficiently, all surfaces become gently clean, shiny and remain free of dust and dirt for longer due to the sustained activity of the microorganisms. Stubborn dirt and heavy incrustations can be removed by letting the cleaning solution work for longer or by slightly increasing the concentration of the solution. The probiotic eMC® Cleaners with their many other advantages (e.g. no more clogged drains, cleaning water used for watering the garden, less to no house dust mites, gentle on the skin, sewage is clarified, no bad odours, etc.) are a great natural alternative to chemical cleaning agents.

What are the advantages of the three new eMC® products?

The new products enrich our range of washing and cleaning products enormously!

eMC® Dishwashing Detergent

The new ecological eMC® Dishwashing Detergent was specially developed for hand washing. It cleans dishes efficiently, gives glasses a streak-free shine and is very gentle on our skin (suitable for allergy sufferers and sensitive people). Due to its mild and fresh scent it can also be used as hand soap. In combination with the eMC® Oxygen Bleach it is fantastically suitable for the dishwasher.



eMC® Washing Concentrate

I am particularly pleased that we can now completely dispense with chemical detergents when washing laundry at 60° or 90° C. The ecological eMC® Washing Concentrate contains neither optical brighteners nor any synthetic fragrances. This great washing power is based exclusively on the combination of mild washing raw materials with natural essential oils and Beneficial Microorganisms. This makes this product ideal for allergy sufferers and babies.



eMC® Oxygen Bleach

If white laundry turns yellow or grey or coloured laundry loses its colour, we recommend eMC® Oxygen Bleach as an additive to the eMC® Washing Concentrate. It gently removes organic stains such as those from tea, fruit, kernel oil, grass or red wine. It can also be used in combination with a limescale remover as a machine or drain cleaner.



Photos: Multikraft, Shutterstock



bioemsan Toothpaste Plus

especially alkaline, vegan, fruity fresh

The big plus: it is vegan and tastes fruity and fresh. The taste of spearmint and orange is particularly popular among children. Just like the proven bioemsan toothpastes, the new addition to the range is cell regenerating, anti-inflammatory and gentle to tooth enamel. A fundamental benefit for teeth, gums and the entire oral flora.

"We have built on our previous experience with the proven bioemsan toothpastes for perfectly clean teeth, healthy gums and effective prophylaxis. With the new bioemsan Toothpaste Plus, we have developed and tested a specially designed vegan variant that is particularly tasty for children", says Dr. med. dent. Gerhard Schneider.

Ideal for children

The demand for a vegan product without propolis was very strong and bioemsan product manager Katharina Krebs decided to work with experts to develop another toothpaste that is specially designed for children. "We use high-quality natural raw materials that are not harmful to adults, children or babies. All of our toothpastes are very suitable for children and many parents are relieved to have a biological alternative. With its fresh, fruity taste, bioemsan Toothpaste Plus is particularly popular among children. My two little daughters love our toothpastes and are very fond of brushing their teeth with it", says Katharina Krebs.

Healthy ingredients

A finely balanced mixture of spearmint, orange and other essential oils rounds off the taste of bioemsan Toothpaste Plus. The essential oils come from plants sourced through controlled organic cultivation, as do all herbal extracts of bioemsan toothpastes.

Herbal extracts such as ratanhia root, neem bark, myrrh resin, sage leaves and roman camomile blossoms form a highly effective active ingredient complex through fermentation with Beneficial Microorganisms. Manju Sea Salt enriches bioemsan Toothpaste Plus with minerals and trace elements such as calcium, magnesium, iron, zinc, selenium and iodine. EM Ceramic Powder, finely ground chalk and sun-dried yellow clay clean tooth enamel gently and achieve the optimum alkaline pH value.

Caries is out

"The plus is certainly that it's even more alkaline. This makes bioemsan Toothpaste Plus even more effective in preventing tooth decay – such as in the case of teeth inflammation or caries", Katharina Krebs emphasizes. Caries in children's mouths is a pressing issue. Frequent sugar consumption and poor oral hygiene promote the development of tooth decay. This is triggered by acid-forming bacteria.

Regular dental care with the alkaline bioemsan Toothpaste Plus is an excellent prophylaxis, as the dentist Dr. Gerhard Schneider explains: "The development of a children's toothpaste addresses the issue of caries susceptibility. The consumption of sweets, fruit juices, soft drinks and other foods with a high sugar content results in a very strong acid attack in the mouth, which damages the teeth. The alkaline basis of bioemsan Toothpaste Plus directly neutralises the negative effects of acids."

The oral flora embodies the variety of all microorganisms located in the oral cavity. Through regular application of the bioemsan Toothpaste Plus, healthy balance of microorganisms can be maintained. Thus, regular tooth brushing supports the healthy balance of the oral flora.

Brushing teeth with children

How can parents best introduce their young children to morning and evening tooth brushing so that it becomes a natural healthy routine?

Dr. med. dent. Gerhard Schneider: "I recommend that children and parents brush their teeth together. Children tend to imitate and copy role models – their parents. You create a habit and a basic education in dental hygiene similar to eating with a knife and fork."

Product manager Katharina Krebs can confirm from her everyday experience with her two young daughters that the good taste of bioemsan toothpaste Plus encourages tooth brushing: "The most important thing is to get the children used to brushing their teeth. If they like the taste, then they like to brush their teeth. We often brush our teeth together. Sometimes my daughter brushes my teeth and I brush her teeth – then each their own. You can play lovely games with the kids to make brushing their teeth more fun."



Tip from Katharina Krebs

One can put the bioemsan toothpaste in a night splint once in a while in order to let the toothpaste act overnight on the teeth and gums. This is very good for inflammation or to naturally dissolve tartar. The teeth become whiter in a natural way. This also works with regular tooth brushing with bioemsan toothpaste. Practice has shown that bioemsan toothpastes works even better if it remain in the mouth and gums for as long as possible.

Manju in action for the cure of childhood illnesses

Werner Pichler lives with his wife Christine and their children Elena and Hannes in Wals near Salzburg. Both children grew up completely without antibiotics. The children's illnesses were cured with natural home remedies and Manju.



How did you get to know the dietary supplement Manju?
My mother-in-law Liselotte Mitteregger has been a Multikraft consultant for many years and she gave us the idea. Since our children were young, we have been using Manju, Elena is now 17 and Hannes 12 years old.

Your use of Manju is quite unusual. Especially with flu infections and high fever you have had very good experiences with it. What can you tell us about it?

We were looking for alternatives and household remedies such as vinegar patches or curd cheese wraps. Our children are not vaccinated against the flu and we did not want to give them antipyretic medication. Fever has a purpose for the body, generally we wait and let our children have a fever. When Elena was three years old, she had a flu infection with high fever for the first time when my mother-in-law suggested using Manju. Since then this has worked very well.

How do you use Manju for influenza?

When the fever was high, starting at about 40.5 degrees Celsius, I gave the children half a bottle or a whole bottle of Manju to drink. It quenches thirst and is drunk quickly, not in small sips and not distributed throughout the day. After an hour, the fever dropped to a slightly elevated temperature of 37 to 37.5 degrees. After one or two days, the children were fever-free again and completely healthy.

Which infections and childhood illnesses have you managed well without antibiotics?

Both children have never received antibiotics. We used Manju for flu infections, chickenpox, stomach upset. We also cured Hannes' middle ear inflammation with the help of Manju.

Instead of antibiotics we use Manju and colloidal silver. Both are completely free of side effects. Colloidal silver (silver water) is a natural antibiotic that does not harm the intestinal flora. We drink around 1/4 to 1/2 bottle of Manju with amazing results.

What do you appreciate about Manju?

What I like about Manju is that it is something natural and free of side effects. For us Manju is our first choice because we've seen how well it works. We still have the option to take medication later if it becomes necessary. The combination of Manju and colloidal silver avoids the need for antibiotics. With this natural combination, the intestinal flora is not attacked, but remains healthy. Our children are completely unaffected by antibiotics. We have always managed all the childhood illnesses in a natural way and handled them well.

Manju in action as an 'elixir of life' for all ages

"Hello", says a cheerful greeting over the phone. You can't tell from her voice, but Erna Weber celebrated her eightieth birthday in 2019. Her voice sounds surprisingly youthful and full of verve. Erna enjoys very good health and her secret is Manju, the 'elixir of life'.

Mrs. Weber was introduced to Manju, a dietary supplement and fermentation drink, through the 'EM community' in Switzerland. She tried it for the first time more than fifteen years ago and has been using it regularly every day since.

We asked why Manju has become so important to her?

I live a healthy life and try to keep my body fit using natural products. For example, I stay on top of small ailments in my knees by using good ointments from the monastery pharmacy in Appenzellerland. I have been taking two caps full of Manju every morning for a long time, initially using it to support my stomach health, however since I discovered the Manju Spray, the small bottle has been my constant companion.

Why do you always carry a small Manju spray bottle in your handbag?

When I go out in the sun, my allergies make my eyes red and very inflamed, especially in summer. When I spray two or three pumps of Manju directly into my eyes it brings me great instant relief. I have also noticed that Manju is very helpful for all kinds of skin irritations. It relieves insect bites, burns, minor injuries and wounds. The Manju spray bottle is very practical and fits in virtually every size handbag.

For many years Manju has been part of your morning routine. How do you use it??

Every day in the morning I spray two or three pumps of Manju into my eyes and mouth. Manju has a wonderful effect on the skin, both internally and externally. I think it's just good for the mucous membranes. I also notice it on my teeth, significantly reducing problems..

What do you appreciate most about Manju?

It is a completely natural good all-purpose product which is easy to use and brings great relief. I really appreciate the Beneficial Microorganism products. Since I was a teenager, I've had psoriasis in my hair and Manju brings me great relief with this also. Sometimes there were three or four



weeks when I felt no effects of the psoriasis, but still always used 2-3 sprays of Manju on my scalp, to keep the benefits going. I also use the bioemanshampoo and together with the Manju it is wonderful for my hair. I have never dyed my hair before and my natural hair colour is well preserved with grey hair hardly visible. Manju gives me a good feeling overall and has supported me for many years.

Photos: Werner Pichler, Erna Weber, Shutterstock



eMC®

CLEANER

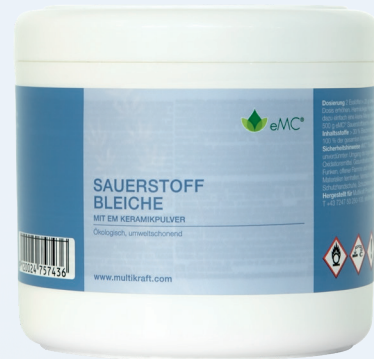
Probiotic • Ecological • Compatible with foodstuffs



eMC® Dishwashing Detergent



eMC® Washing Concentrate



eMC® Oxygen bleach

ADVANTAGES



Probiotic

eMC® cleaners promote positive bacteria, which provide natural protection for our skin and our living environment. Pathogens have no way to survive because the Multikraft Microorganisms dominate their micro-climate.



"Compatible with foodstuffs"

Compared with conventional cleaners, eMC® cleaners offer significant advantages in controlling microbiological contamination and are especially advantageous when used in food preparation settings.*

**Excerpt from a report prepared by Professor Dr Werner Pfannhauser*



Health

The natural ingredients and positive microorganisms make the products particularly risk-free and gentle on the skin, working against irritation and skin allergies.



Ecologically friendly & saves water, too

eMC® cleaners are the natural alternative to chemical cleaning agents. They also continue to do their magic in pipes long after application and conserve water use.



Quality

eMC® cleaners are manufactured in a multi-stage quality process at the company's location in Pichl, Austria.