



Multi kosmos

INTERNATIONAL EDITION 2017

Award-winning

The multiple award-winning KräuterGut Nürnberg produces potted herbs in a very grand style. Production manager Tanja Dworschak tells how she combines family tradition, organic farming, and state-of-the-art production methods. **Page 12**

Profitable

Alberto Cappa associates the welfare of the animals with economic profitability with the Italian consultancy firm „Evoluzione“. The regular use of FHE (Fermented Herbs Extract) improves the health status of the livestock and the farmers achieve very good yields. **Page 16**

Beneficial

Current studies prove that Manju supports vitality, health, and well-being. The ingredients of the popular dietary supplement strengthen the immune system and the intestine. Research from Japan provides new findings into diabetes and shows that taking Manju consistently is beneficial for blood levels and blood sugar levels. **Page 24**

We continue to grow!

Exactly 10 years ago, we moved our company to its new location at the Stumpflhof in Pichl, near Wels. Ever since, we have been very pleased to find that a growing number of people have come to rely on the technology of Multikraft microorganisms and that, due to this, we have been able to process an increasing amount of orders in recent years. To meet the demand, we need more space for the production and storage of our products, which is why the Stumpflhof is currently being expanded.

We already started with the expansion of our production facility and the logistics centre in May. The extension is already visible and construction will soon be concluded. A large 1,000 m² warehouse building has been completed in the meantime.

It has been equipped with high shelves and is already in full operation. We will therefore be able to deliver our products more efficiently starting 2018.

A completely new event centre with a timber frame construction has been built and has been in operation since mid-January 2018 - we were already able to welcome our conference guests there. The new event centre will allow us to organise a larger number of events in the future. Not only have we grown as a location, but our number of employees has been continuously growing, too. For this reason, we have provided our employees with additional office space and larger break rooms to take their breaks in. We are already looking forward to welcome you in our new buildings.



Construction of the sugar cane molasses tank and heating house.



Our new logistic centre.



Our new event centre.

2017



// 10

Tanja Dworschak in conversation –
„Award-winning herbst“



// 14

How to have a healthy pond –
Tips for maintenance in the spring

02_ MULTIKRAFT NEWS // We continue to grow
Expansion of our headquarters

04_ COVERSTORY // Lukas Hader – Think economically.
Act sustainably. How Multikraft grows beyond itself

08_ THE MICROBIOME // Latest scientific developments
in microbiology

10_ HORTICULTURE // Nice and compact – How Multikraft
microorganisms regulate plant growth

12_ IN CONVERSATION // Tanja Dworschak – Organic herb
production on a grand scale

14_ AGRICULTURE FARMING // Inventive – Machine _
conversion, optimal product application, sensational successes

16_ LIVESTOCK FARMING WITH FHE // Animal health and
good yields – Experiences from Italy

18_ WORLD OF PLANTS // Anne Lorch and Susanne Schütz
Plan the garden year with foresight

20_ HOUSE AND GARDEN // How to have a healthy pond
Tips for maintenance in the spring

22_ EMC® CLEANERS // Alpine hospitality
How Multikraft microorganisms work in hotels

24_ WELL-BEING MANJU //
Manju – The Power of Nature

26_ BIOEMSAN // The skin as microcosm – The power of herbs
is a well known fact

27_ TIPS & TRICKS // Helpful questions and answers about
Multikraft microorganisms

Photos: Multikraft, Pohlmann, Adelinde Andrae, Frank Kortling, Anne Lorch, Cover: Shutterstock



Legal information

PUBLISHER: Mag. Ulrike Hader, MEDIA OWNER: Multikraft Produktions- und HandelsgmbH, Sulzbach 17, 4632 Pichl/Wels, Austria,
Tel. +43 7247 50 250-100, info@multikraft.at, www.multikraft.com, CONTACT & CHIEF EDITOR: Christina Waldenberger, BA
LAYOUT: Michaela Schatzl, AUTHORS OF THIS ISSUE: Mag. Katja Haller, Mag. Robert Rotter, Mag. Dr. Erika Rokita, Anne Lorch,
TRANSLATION: translated.net, PUBLISHING HOUSE: gugler print*, PLACE OF PUBLICATION: Melk a. d. Donau

greenprint*
klimapositiv gedruckt



Gedruckt nach der
Richtlinie „Druck-
erzeugnisse“ des
Österreichischen
Umweltzeichens,
UWZ-Nr. 609;
www.gugler.at



Think economically. Act sustainably.

— HOW MULTIKRAFT GROWS BEYOND ITSELF

The tanks are just as full as the order books. The shelves of the warehouse are lined with freshly filled and labelled bottles. The forklift heaves the pallets with the bulk containers into the ready-to-go truck. For ten years the family-run Multikraft business has been based at the Stumpflhof in Pichl bei Wels. The order situation is very good and the demand for Multikraft products is steadily rising. So it's time to make some changes. And this year - the year of the company's fortieth anniversary - it will be rebuilt and another milestone marked in the history of Multikraft.

Forty years ago, Ulrike and Karl Hader started the business with special, antibiotic-free animal feed, and twenty years ago, they pioneered effective ways to use Multikraft microorganisms. Ever since the company was founded, the focus has been on ecological solutions that use the processes in nature as a model. Preventive, sustainable modes of behaviour are also a basic principle of working with Multikraft microorganisms. Here, the approaches dovetail beautifully into a corporate philosophy. Lukas Hader grew up with this credo in the family business and continues this commitment - without being a dogmatist - into the second generation.

The entire product range is based on Multikraft technology, which is undergoing a constant process of development together with domestic and international research institutes. The positive response of users is one of the best endorsements of the Upper Austrian family business. Whether it is the revitalisation of our soils in agriculture or the production of residue-free vegetables in horticultural businesses - the pioneering work of Multikraft has paid off. Today it is an internationally successful company. The special feature: the entire production process takes place locally at the company's premises in Pichl bei Wels.



Tour on the papaya plantation for the production of Manju in Okinawa, Japan.



At the fair in Wels, Upper Austria 1996

On excursion with Australians in Austria, 2015.



Interested conference participants from Egypt, Austria, France and Taiwan in October 1997



Visit at TPR, the manju producer in Japan, 2011



Compost control on a horse farm, Saudi Arabia, 2009.



High quality

"Since 2002 we have produced all Multikraft products ourselves from scratch. All production is based exclusively on our recipes," says Lukas Hader. The mixing ratio of the yeasts, lactobacilli and photosynthesis bacteria is applied so that they both mutually support each other and the processes in the environment. Ready-to-use Multikraft products are produced by a six-stage fermentation process, from the individual microbes to the various mixtures that Multikraft applies in the individual application areas. "Of course, our exact production process remains our secret," smiles Hader, who attaches the greatest importance to the quality assurance of the products: "All of our products are based on globally occurring microorganism strains that comply with Class 1, i.e. they are food grade and 100 % GMO-free."

The quality control takes place in the in-house laboratory, in which all individual microbes are tested. With the help of PCR technology, quality managers receive meaningful results within two hours. PCR (polymerase chain reaction) is a process applied in medical and biological laboratories and is one of the most important methods in molecular biology. At Multikraft, PCR technology is used as a two-part process for determining the DNA of microorganisms. Each batch is checked for the minimum number of different microorganisms and the absence of genetically engineered sugar-cane molasses and pathogenic germs.

"Through continuous development, research and improvement, Multikraft generates the stable quality that meets our requirements," emphasises Lukas Hader. In addition to the high technical standards in the laboratory and quality management, Multikraft has the greatest know-how in product development based on these microorganism mixtures through its collaboration with English agronomists and a Scottish institute.

Highly suitable products

"From the outset it has been my credo that we must develop Multikraft technology in such a way that it becomes a super-functional resource with long-term benefits for users." In the past, farmers or gardeners had become deeply involved in the application - preparing the original solution and molasses themselves. With Multikraft's professionalised product range, application is much easier. The finished products are easy to dose and straightforward to use. This makes them especially suitable for professional farms in agriculture and horticulture. For Lukas Hader, the swift introduction of large containers and the practical bag-in-box system was therefore also a concern.

"We are well established in agriculture and horticulture. Over 90% of our customers are conventional businesses that use Multikraft technology to save on chemical resources. We are proud that Multikraft products are used on a large scale, while at the same time being economical," says Hader. Its ultimate goal is to provide farmers and gardeners with resources that they can use to reduce their use of chemicals and avoid residues. With the aid of Multikraft products, statutory residue values can be more easily achieved and complied with, as it has been determined by independent institutes that

Multikraft products do not cause residues, while having better effects, and even degrade residues of chemical preparations faster than without the use of microorganisms. The competitiveness of the, often traditional, rural family-run farms must be maintained. Hader sees this as one of the main tasks facing Multikraft in the coming years, as he emphasises in the interview on page 10.

"This year we held our sixth field day for farmers, again at Harmer KG, a large organic farm in Lower Austria. Fifty farmers attended the first field day. This time it was over two hundred, and at least half of them were new faces," says Lukas Hader happily. One example among many. Interested parties from a wide variety of fields try out Multikraft technology once, and often opt for the conversion of their businesses after seeing the positive results. With these long-term experiences, Multikraft is growing steadily. But Lukas Hader is also clear that, before successful market launches, experimental phases, which also lead to new ideas, are also necessary.

There are many ways in which Multikraft products can be interwoven into work. Multikraft microorganisms enrich microbial life in the soil and provide plants with nutrients without polluting the environment. They build a milieu that suppresses rot-forming germs. They support beneficial organisms, loosen the soil and make it more water-absorbent. They activate life in the soil. It becomes a playground for earthworms, enhancing the humus structure. In livestock farming, Multikraft products help suppress rot-forming processes throughout the entire barn, in slurry, manure and solid manure. These are just a few of the benefits that come with regular Multikraft application. So it's not a mysterious miracle cure, but solid biology and the support of it.

With Multikraft microorganisms, Multikraft is a company with strong roots in Upper Austria. Lukas Hader is aware of the responsibility to secure more and more jobs. "With Multikraft, I always live two or three years into the future. That way, I can act with foresight and think in advance about



the effects of decisions." The attractive family business is well-connected in Austria and internationally.

In addition to long-term trading partners in over 35 countries, it also has two independently operating subsidiaries in Italy and Australia. BIONRG srl. in Italy and Multikraft Probiotics Australia Ltd. are also successful in the agricultural sector. For Lukas Hader, international long-term partnerships are very important. "I visit our company in Australia two or three times a year. Otherwise, cooperation works very well over that distance. The presence of Multikraft in Central Europe is particularly close to my heart, so I devote 95 % of my time to the Multikraft parent company and its development."



Expanded production

In the last six years there has been a lot of investment in ongoing operations and production has been expanded. Planning for the expansion of the company headquarters has been underway for three years now. Last year we started the detailed planning, this year we waited for the main season, and in May of this year reconstruction started. This will expand the production facility and the logistics centre.

In 2010, the production volume was around 40,000 litres of tank volume. In the meantime this fermentation volume has quadrupled. Production is bursting at the seams, all tanks are full. With the reconstruction, the production and bottling capacity will be expanded - from the current 20,000 litres per day to 50,000 litres per day. In years to come there will be room for further expansion. As a result, the production can be internally extended if necessary by the installation of further fermentation tanks.

There is also an innovative events centre. "Passing on information about our technology is important to us, and so we decided to expand it," explains Hader, who counts around 200 prospective customers among his guests at Stumpflhof every day. Also, the significantly increased workforce has more space for office and break rooms. A biological lunch is on the agenda for Multikraft staff, because good food and breaks are important for keeping a clear head, for exchange and for refuelling. Hader has developed the decision to expand with a view to the next ten years: "This is our incentive, and again a great milestone in the company's history."



THE MICROBIOME

LATEST SCIENTIFIC DEVELOPMENTS IN MICROBIOLOGY

20 years ago, Multikraft technology was not taken seriously by the scientific community, continuously being criticised. Now however, our customers and their mindset are the focus of scientific interest. There has been a paradigm shift in the significance of microbiology for the health of humans, animals, and plants, combined with a public awareness in science.

MEANING FOR A HEALTHY LIFE

In the past, microbiology was viewed negatively, microbes were considered as pathogens and unhygienic. Now microbes within an organism or an environment are recognised as an essential requirement for healthy living. This is not surprising, as the latest scientific findings believe that microorganisms colonized this planet more than 4 billions of years (500 million years earlier as presumed). Within this time, all habitats (even the most extreme ones) have been colonized and formed by microbes. Therefore our atmosphere and our soils are the results of intense microbial activity. The genesis of all organisms like animals, humans, and plants are based on microbiology.

EFFECTIVE INTERACTION

Every organism serves as an ideal habitat for microorganisms and these exist in the tightest symbiosis with its microbial community. For instance: mammalian bodies consist of ten times more microbial cells compared with their body's own cells. Every surface inside and outside (guts and skin) is colonized with a high amount of bacteria and fungi. Although most of the microorganisms are unicellular, they communicate within their host, are sensitive to changes and play a significant role in metabolism and the immune system.

The whole microbiology within an organism is called a microbiome and scientists consider it as a distinct organ. Different diseases like metabolic disorders, diabetes, hypertension, Alzheimer's or even psychological disorders like depressions are attributed to changes in the microbiome. The importance of the microbial variety for health advances, is now the focus of scientific investigations.

SPECIES-RICH HABITANTS

The whole microbiology, living on, in and around a plant is called the phytobiom. In the rhizosphere – the area bordering the roots, 5 to 50 times higher amounts of microorganisms can be found compared with the microbe density in the surrounding soil. A high amount of sugars and amino acids are exudated by the plants to nourish the surrounding microbiology. In return, the plants receive nutrients and water from their rhizobiom.

Microbial metabolites can not only promote root growth and the efficiency of photosynthesis, but they also influence the plant's genetic potential. To activate different types of defence mechanisms, plants influence and "communicate" with the surrounding microbiology via plant hormones. i.e. salicylic acid promotes the growth of specific microbes in the rhizosphere, while it suppresses the development of others. Microorganisms are also able to produce phyto hormones, or their precursors and thus can influence plant health.

POTENTIAL IN AGRICULTURE

Knowledge acquired by microbiome research offers huge potential, especially in the field of agriculture. Changes in the phytobiom will increase yields and resistance against diseases or drought. New microbial technologies will help to secure future world food supplies and to reduce the use of agrochemicals. Scientists all over the world are looking for a holistic approach to an eco-friendly and sustainable agriculture.

TARGETED METHODS

New terms accompany these innovative areas of research: "Ecological engineering" changes in microbiology of the rhizosphere that promote plant growth, support soil development and increase soil fertility. It's focused on the rhizosphere feedback loop – the interaction between soil, microorganisms and plant roots. SAR (systemic acquired resistance) activation of plants distinct protective mechanisms, by confrontation with different pathogens an immune response can be induced in the plant. Next time the plant is in contact with these pathogens, it can react much faster to the new infection. ISR (induced systemic resistance) different bacteria, which live in symbiosis with the roots, i.e. rhizobium, can also cause an immune response. These can indirectly induce an immune reaction.

"Population engineering" uses the fact, that microorganisms – although single-celled organisms – can conclude their conspecific (cell density) by changing signal molecules. This "Quorum sensing" called ability can be observed in different types of bacteria. Specific pathogens in low cell densities are neutral and thus harmless for plants, exceeding a certain amount they become harmful. The use of microorganisms to control pathogens or pests is also called Biocontrol. "Quorum quenching" disturbing microbial communication by changing microbial signal molecules shall inhibit quorum sensing effects of pathogens.



Spinach root plug trials - treatment applied at drilling:

① algae based plant strengthener 2 % | ② untreated | ③ untreated | ④ Terrafert Soil 2 %

TRANSFER TO PRACTICE

Whether it is the principal of dominance, or creating an environment for beneficial microbiology, scientific findings now confirm explanatory models we already have for the effects of our technology. Not only studies, but long-term experience with Multikraft microbe-technology shows that biocontrol and population engineering works very well. Professional gardeners, farmers, fruit and wine growers confirm that continuous use of Multikraft's products via irrigation and foliar application stimulates growth, plant health, yield and quality.

WORKING CIRCUITS

Everyone working with our microbes realises the importance of microbiology within the different cycles of matter, adapting to working within natural systems. In addition to the effects of the microbes, it is essential to know how these natural cycles work and how we can support microbiology. Organic instead of chemical fertilization, no agrochemicals, avoiding putrefaction, crop rotation and diversity.

These methods, which support soil life and humus building, will deliver the best results, in combination with Multikraft-technology. Despite our technical progress, we can't afford to ignore four billion years of experience. If homo sapiens are to remain as a part of this beautiful planet, it is up to us to respect, support and copy their natural systems as a guideline for our future, and how we think and act.

Nice and compact

How Multikraft Microorganisms Regulate Plant Growth



The saving of chemical resources in favour of near-natural methods is a popular topic in horticulture. Reliable alternatives are more in demand than ever before in vegetable production in particular, as well as in the production of ornamental plants. This includes Multikraft microorganism, and Frank Korting from the Rhineland-Palatinate Rural Area Service Centre in Germany has provided valuable results for their application.

During visits to horticultural businesses, he heard about Multikraft microorganisms again and again, and gardeners described how they could significantly reduce the use of pesticides. That made him curious and got his research juices flowing. Since 2014 he has used Multikraft products in numerous experiments in ornamental plants and vegetable production. Plant growth is a focus of his work. „You can see the differences in plots which have been treated with Plant Power technology. Plants are more stable, more intense in colour, more vital and much more compact than untreated plants. Multikraft microorganisms also increase resistance. Cuttings stay healthier and form better roots,“ says Korting.

Korting attaches great importance to the application of Multikraft microorganisms as growth-regulating plant additives. In professional gardening it is important to maintain compact and stable plants during the production and sales phases. On the one hand, optimal use can be made of greenhouse areas available to the gardener. On the other, compact plants have better transport properties. In professional gardening, growth regulators are primarily used to reduce plant height through growth regulation. This gives you compact plants. The plant should continue to grow well after being sold to the customer. „These effects are all natural with Multikraft products,“ confirms Korting.

Optimal quantity

Korting uses Terrafert Foliar in combination with BB Foliar to achieve growth-regulating effects across the entire range of ornamental plants. „We administer a larger dose of Terrafert Foliar than is necessary for plant strengthening. With an average value of a 3 % solution, we have achieved

good results. With weekly spraying, plants remain shorter and more stable over time. As soon as application is interrupted, they continue to grow. Therefore it is important to apply the Multikraft treatment in this form weekly until the sale date.“

The optimal application volume of Multikraft products for growth regulation depends on the plant. The different types and respective varieties - whether strong or weak growers - must be considered. Always take into account the temperature conditions in the greenhouse. „When it’s warm, plants grow faster and Terrafert Foliar has a slightly weaker effect than in crops that are produced in the autumn and winter. Even for spring bloomers, Terrafert Foliar is ideal.“

The highest application volume does not always have the strongest effect on growth. An application volume of 3-4 % Terrafert Foliar and 2 % BB Foliar is suitable for most crops.

„We have found that there is always an optimal concentration of Terrafert Foliar. If it’s less than this, plant growth is stronger, as it is if it’s more.“ Terrafert Foliar is therefore not comparable to synthetic regulators, because the latter increasingly inhibit plant growth with increasing quantities. With Terrafert Foliar it is really important to get the right quantity. „Basically, our combination consists of Terrafert Foliar and BB Foliar. We always use 2 % BB Foliar content. Terrafert Foliar content is varied according to crop and variety.“

In the experiments it was found that excessive amounts of Terrafert Foliar can cause damage to blossoms in flowering plants. From a dosage of 4 %, a slight leaf coating can occur after several applications. In order to avoid such blemishes, it is advisable to add a wetting agent such as whey powder to reduce the water tension and/or to optimally adjust the dosage to the plant.

Fewer chemicals

The different growth character of ornamental plants therefore plays a major role. Depending on the vigour of the variety, the cost of synthetic



inhibitors may be reduced or spared completely. According to previous results, weak and medium-growing varieties can be kept very compact with Terrafert Foliar alone. For strongly growing varieties, it makes sense to work with proven inhibitors and to use Multikraft products supportively. If, in this case, Terrafert Foliar and BB Foliar are used regularly, the application volumes of chemical growth regulators can be significantly reduced. The reduction of detectable residues is thus another advantage of Multikraft treatment. On the one hand, fewer chemical agents are used from the outset, and on the other, a series of experiments has shown that treatment with Terrafert Foliar and BB Foliar leads to lower residues than on untreated plants. „According to current findings, the use of Multikraft products can lead to accelerated degradation in many substances. If the inhibitory effect is sufficient with Multikraft microorganisms alone, you get plants that will continue to grow well immediately after sale. It is also very clear that the plants are more vital. I see all of this as a major advantage of Plant Power technology for both horticultural businesses and end customers,“ emphasises Korting. For him, Multikraft technology is a useful supplement for production in professional gardening: „Based on our previous results, savings can be made in advance on inhibitors and pesticides. If the impact of Multikraft microorganisms continues to prove itself in our studies, then their importance could be much greater and hugely important to us in horticulture.“

Useful transfer

The results of the study, together with valuable recommendations, are made available to practical users in horticulture by the Rhineland-Palatinate Rural Area Service Centre. The results of Korting's experiments are frequently published in trade journals, and he incorporates his experiences with Multikraft technology directly into his consultation activities for horticultural businesses. He gives many talks to practitioners and consultants, who can then use all the results themselves. And that's a good thing, because knowledge of Multikraft microorganisms gives horticultural companies a tool with which they can save chemical resources, thus sowing the seed for natural gardening.

Plant me!

Multikraft system in use for compact tomato seedlings

In several test series, Terrafert Foliar was used on its own and in combination with BB Foliar. „In one trial, we continually doubled the dose of Terrafert Foliar, from 1 % to 2 % to 4 % and to 8 %, and observed the impact. The best result was at 2 %, and the next best at 4 %. Then we repeated the experiment with the mean value of 3% Terrafert Foliar, with very good results,“ explains Korting. The young plants are sprayed weekly with the mixture and growth is significantly more compact and stable when using the optimal application volume in comparison to untreated plants.

Many advantages

Growth regulation with Multikraft products results in more compact, stable and shorter seedlings. Such plants benefit the professional horticultural business through the more profitable use of greenhouse surfaces and improved transport properties.

About 30% more tomato seedlings can be placed in pots on a surface area of one square metre.

In particular, it is already very warm in May, the sales season for tomato seedlings. The plants grow quickly and often become very long, meaning that they break easily and are difficult to transport. „To avoid all these factors, it is beneficial to have a biological product that keeps the plants shorter and more stable. If the plants are more compact, fewer shoots will break during transport. Multikraft technology is very well suited for growth regulation,“ confirms Korting.

The use of Plant Power technology as a growth-regulating plant additive has a further advantage: „It has been shown that tomato seedlings continue to grow well as soon as we discontinue this form of Multikraft treatment. That in turn is important for sales to end customers. You get more compact plants that immediately grow well at home. And, while it may not sound very scientific now,“ laughs Korting, „I also notice that, in any case, plants treated with Multikraft microorganisms look better, too.“



Korting uses experiments to find the optimal use for Multikraft technology as a growth-regulating plant additive in tomato seedlings.



Award-winning herbs

Organic production on a grand scale

Basil, lavender, bay leaf, mint, oregano, rosemary, sage, thyme, hyssop. At the Bioland KräuterGut in Kraftshof near Nuremberg, it's flourishing with a wonderful scent. Wherever you look, potted herbs line up and production manager Tanja Dworschak enjoys this look. Tanja Dworschak flits back out of the nursery, returns to the office, and then energetically and humorously talks about how she manages the award-winning KräuterGut. It turns out that family tradition, organic farming, and the most modern production methods go hand in hand.

Together with her team, Tanja Dworschak produces around 250 wild, medicinal, and aromatic herbs all year round. As well as the variety of the range, the numbers are quite impressive. Around 5 million herb pots are sold every year. The organic production takes place on 13,000 square metres of production area in the greenhouse, in a 14,000 square metre coldstore, and on around 2.5 hectares of open land. Her customers include major customers from the food retail sector in Germany, Austria, and Switzerland. Consumers use the off-the-yard sales and above all shipping from the Internet.

Ms Dworschak, your family business has been around since 1928 and you are leading it into the fifth generation. Your grandfather's pioneering spirit focussed on the production of potted herbs in 1988. The economic breakthrough came a few years later when you converted to a biological mode of production. Since 1994, you have been producing exclusively according to the guidelines of organic farming. You began to specialise in pure herbal production from the beginning of the 90s.

Today, you and your team are cultivating herbs on a grand scale. What is your key to business success?

Our aim is to work for the benefit of people and nature. That is our motto and the reason for our organic focus. When working with our many different herbs, we focus on the benefits for both humans and nature. That's why it is also very important to me that our staff work well as a team. Twenty percent of our employees are people with disabilities who work in our company. It means a lot to me that we practice cooperation and do not just talk about it.

In your company, you also focus on environmentally friendly and resource-saving technology. In 2013, you won the energy award with a prototype for the double-decker method. The two-storey greenhouse is Europe's first production plant of this kind for potted herbs. How did you come up with this idea?

The double-decker approach was my father's idea. He is the innovative mind in the business and when it comes to technology, he's the one in charge. He devised and planned the double-decker system himself. The main reason was that we wanted to cut energy costs. Another reason was that the surfaces here in Nuremberg-Kraftshof are very scarce and so the nearest way to go was up.



Tanja Dworschak in conversation

BIOLAND
KräuterGUT 
 Dworschak - Fleischmann

My father made the prototype and built a production area of 7,000 m² with 13,000 m² of production area. This new greenhouse facility was awarded in 2016 as the best concept for environment and sustainability.

Would you please briefly explain the pot production with this approach. What is special about this greenhouse? What are its benefits?

Production is computer controlled and very energy efficient. Energy consumption is halved. Depending on the variety, the temperature, the lighting, and the irrigation is set for the respective needs of the plants, including for the beneficial organisms in them.

In nurseries, the departments are often very spacious. Our new system has the advantage that the work processes are short and easy to manage. Our employees can thus implement their work well. This also facilitates the care for our employees with disabilities. In addition, we create even better qualities in the herbs, because the larger airspace is good for them.

You also conserve resources during irrigation. How do you proceed?

The entire roof surface water is collected and used centrally. We have a closed loop system for this that works very well. We collect rainwater and irrigation water. Our own filter systems filter the water which is used to irrigate the herbs until the last drop.

In the old systems, we still have the ebb-tide system for the culture tables, while with the new double-decker operation we use flow tables. The plants are watered regularly and the effluent water is completely returned to reservoir. We use water-saving centre pivot sprinklers for the outdoor areas.

For over a year, you have been using the Multikraft system in your company. How do you use Multikraft products in pot production?

We work with the standard recipes from Multikraft and convert them according to the needs of our company. With master gardener Günther Soukup, we have a very good advisor on hand for the use of Multikraft products, who is available in person and on the phone with good tips when we have questions. We generally work with the Multikraft system in three steps. First, the young plants are generously watered with a welcome cocktail so that the pots are really well-moistened. This cocktail strengthens the plants and their defences from the beginning and is made up of EM Active and Terrafert Soil. Second, BB Soil and Terrafert Soil are consistently involved in the casting process and ensure a good environment in the substrate. Third, we use a blending process of BB Foliar, Terrafert Foliar, MK 5, FPE and EM Ceramic Powder at least once a week to increase leaf strength throughout the operation.

What are the benefits of the Multikraft system?

Plant health is always important. Generally, since using Multikraft products all our herbs have had a more vital radiance. In some types of mint, for example, you notice that the leaves are larger and grow more vigorously. One time we were quite surprised because mildew had suddenly appeared. I consulted with Günther Soukup and we found out that for two weeks a component of the Multikraft products had not been regularly used. We learn from our mistakes. That's how we saw that it works. Regular and consistent application is absolutely important. One principle in biological work is also proactive, preventive production. Mildew in the herbs is then no longer an issue.

Inventive

Machine conversion, optimal product application, sensational successes



Rebuilt deep loosener with 1,000 litre container on the tractor

The Multikraft Plant Power range is technology for agriculture, offering a wide range of applications to both organic and conventional farms. Multikraft microorganisms promote the regenerative powers of nature and therefore, above all, more fertile, healthier soils and more resistant plants. Many farmers have already achieved many years of positive results with Plant Power, which is why many are looking to expand its use. We introduce three farmers who have rolled up their sleeves and rebuilt their machines so that Multikraft products can be used in either soil loosening, Bokashi introduction, soil transplanting or sowing in a single work process.

„With the Multikraft soil treatment system, you control the conversion of organic material. Plant remains rot and are degraded more rapidly. The treatment creates an optimal environment for soil organisms and demonstrably repels pathogenic germs,“ says Multikraft CEO Lukas Hader, listing some major advantages.

Multikraft treatment with deep loosener

In areas with heavy soils in particular, earth must be loosened and lifted more often. Harald Tschiggerl from Styria has rebuilt his deep loosener so that BB Soil can be applied to deeper soil layers. The deep loosener is fitted with a 1,000 litre container, the tractor is fitted with a hydraulic pump and a hose is used to mount a nozzle behind the cultivator tines. In this way, 25 litres of BB Soil and 25 litres of water per hectare are sprayed into deeper layers (up to 50-60 cm) under the plough sole, and the other half at the surface.

Advantages of Multikraft soil treatment

„We have been working with Plant Power technology for many years. We have noted further improvements since we started introducing BB Soil into deeper layers. We have an enormous amount of earthworms in the topsoil and plant growth is even better,“ says Harald Tschiggerl. This Multikraft treatment leads to greater displacement of pathogenic germs (fungal cultures), which would otherwise feed on the remains of rotten plants, in the soil. Mycotoxins are

poisons that are produced by harmful soil-borne fungi. Plants absorb these toxins via the roots. In this way, toxins get into foodstuffs and feed - a cycle that is harmful to humans and animals. „Multikraft microorganisms significantly limit the spread of pathogens. A three-year trial by the Upper Austrian Chamber of Agriculture proves that, with Multikraft soil treatment, we can reduce mycotoxins by up to 50 %,“ explains Lukas Hader.

Ronny Reidinger also rebuilt the deep loosener at the organic farm of the Harmer KG estate: a hose from the front sprayer leads back to the deep loosener, where BB Soil is sprayed to a depth of approx. 45-50 cm every 3-4 years, depending on the compaction level of the soil. The organic farm in Spillern, Lower Austria, where his father works as operations manager, and he and another employee work, has sworn by Multikraft microorganisms since 1999.

„Furthermore, every time we work the soil we use the dual-heart turner and BB Soil and spray the crop residues with the front spray three times a year. I can see a much better effect through application in a single process. Since we started using Multikraft soil treatment, the water storage capacity has been much higher and the soils absorb more water. The soil environment is healthier. Our potatoes are lovely and have no diseases, while in other fields the potatoes suffer from fungal diseases. We work in a cycle, add Multikraft products to the manure, spray the plants with Multikraft products, and put them in the ground. The results are convincing and Plant Power technology has become an integral part of our work,“ says Ronny Reidinger.

Multikraft furrow treatment

Even with rebuilt machines for cultivation, i.e. furrow treatment, great achievements are recorded. Harald Tschiggerl and the farmer Franz Kargl, who works in Lower Austria, recently sprayed an mixture of BB Soil, MK 5, Terrafert Soil and ultrafine rock flour (ZeoBas) into the furrow when sowing corn. The 1,000 litre container is located on the tractor's front hydraulics. As with the deep loosener, the product mixture is channelled backwards via a hose. Before the seed is covered with soil, it is sprayed with this mixture through a nozzle, with around 50 litres of BB Soil being spread on one hectare.

Through this treatment the seed comes into direct contact with Multikraft products. The furrow treatment helps the seed to root better already in the cotyledon stage. All farmers who perform the furrow treatment record roots that are twice as large - a sensational success. „From case studies we know that the treatment is important in problematic cases such as corn rootworm, because the plants can still absorb enough nutrients and water due to their stronger and better rooting,“ says Lukas Hader. Franz Kargl confirms: „The root mass of the corn plants is a lot more robust and resistant. If you protect plants with sprays, you destroy both pests and beneficial organisms. In the case of Plant Power technology, beneficial organisms are preserved and pests, such as the corn rootworm, have problems. The corn is fundamentally more resistant.“

Franz Kargl also applies this method to the cultivation of sugar beets. Here, the container with the Multikraft microorganism mixture is also located on the front hydraulics of the tractor, and is channelled directly to the back for sowing. „Once you have adjusted to this mode of working, everything is easy.“ The sugar beet roots are also larger and more powerful. Overall, the plants are more resistant to fungal diseases such as Cercospora. „In the fields that I've treated with Multikraft products, the beets are healthy, and even store more sugar. Compared to conventional spraying agents, the Multikraft treatment is more cost-effective and delivers better results,“ concludes Franz Kargl.



Multikraft furrow treatment for sugar beet production

This is how Harmer KG works. The container, filled with Multikraft microorganisms, is located at the front of the tractor, and BB Soil is sprayed out and buried directly.





Animal health and good yields

Experiences from Italy

It's bitter. For the first time in sixty years, the Football World Cup will not include Italy. The good news is that in other fields of activity there are very pleasing developments. For example, with Evoluzione. The specialist consultancy firm from the north of Italy advises over five hundred farmers and works with near-natural methods in animal husbandry. By regularly using FHE (fermented herbs extract), the health condition of the livestock shows considerable improvement. Evoluzione is convinced that by focussing on animal welfare, farmers can produce good yields and be economically viable.

In 2005, the Hader and Contardi families kicked off the Multikraft activities in Italy at a meeting in South Tyrol. In the same year, the company was founded by the joint venture. BIONRG S.R.L. operates in Piacenza as

a partner company and wholesaler of Multikraft products for Italy. One of BIONRG's most important partners is Alberto Cappa with his company Evoluzione. The specialist consultancy firm supports farmers especially in the field of animal husbandry, in particular in the breeding and keeping of cattle, pigs, and fish.

"Our company was founded in 2009 by three experts who brought with them 25 years of experience working for the National Federation of Breeders - the Associazione Italiana Allevatori. We gained a lot of knowledge about the breeding and keeping of dairy cows here. Today, all three of us work as a partner in the company with nine employees. Five of them work as sales force," says Alberto Cappa. Over five hundred farmers are regularly advised and assisted by „Evoluzione“ in their work.



Company founder Alberto Cappa



Company headquarters of Evoluzione in Villaga, province of Vicenza in Veneto

Economical & natural

In terms of orientation, the company, together with Multikraft partner BIONRG, pulls together. „We want to promote the health of the animals. Our goal is to use resource efficient products. This means we work with technologies that reduce chemical products.“ Alberto Cappa describes his approach and Chiara Contardi from BIONRG adds: „Nature provides us with the right balance for life and we want to pass this balance on to future generations. We are convinced that economic thinking and natural cycles can get along well and not have to work against each other. Evoluzione is always searching for new methods and making biological decisions. This avoids measures that cause stress for animals and the environment.“

Evoluzione focuses its animal breeding and animal husbandry on animal welfare. This includes the quality of the food as well as the hygiene and the climate in the barn. „We try to get the best from the animals, so we respect them.“ said Alberto Cappa, who became aware of Multikraft’s FHE (Fermented Herbs Extract) by BIONRG.

Consistent with FHE

„We regularly mix FHE (Fermented Herbs Extract) with the feed for the cows and the milk for the calves during the first thirty days to avoid diarrhea. For this, we dilute 150 ml daily for the cows and 10 ml for the calves.“ Alberto Cappa reports on the consistent application with which very good experiences have been recorded.

Advantages with FHE

„The animals’ digestion is significantly better and the consistency of their faeces is optimal. We regularly use FHE (Fermented Herbs Extract) for litter and in manure tanks or manure pits. A bad smell in the barn is no longer an issue.“

Overall, Alberto Cappa observes that with the regular use of FHE (Fermented Herbs Extract), diseases occur much less often and the animals are much more vital and healthy. „We were able to significantly reduce digestive problems and hoof diseases with these treatments, and generally find better milk production in cows. Our best results are in the manure. Implementing it is faster and the quality improves significantly thanks to the FHE.“

Economically profitable

„It is important to us to build a dominance of regenerative microorganisms in the intestine of the animals with FHE (Fermented Herbs Extract) and thus keep the animals healthy. Breeders often have great benefits, but at the same time some lose sight of the health of their animals. We want to give the animals the best and we succeed with FHE (Fermented Herbs Extract) very well.“ Alberto Cappa is certain of this and comes back to what he puts the focus in in his work: namely to combine well animal welfare and economics:

„When we treat animals with respect, we receive good benefits from them and can thus work profitably and economically. Despite many market pressures, we can use products and technologies in a natural way and at the same time achieve good yields for our farms. An important topic today and for the future. The companies Evoluzione, BIONRG, and Multikraft are pioneers in their diverse fields of activity. Successful ones, as you can see.“



Employees of Evoluzione advising farmers in Italy

Plan the garden year with foresight

Up until recently it was downright chic to be able to buy all fruits and vegetables at any time of the year, no matter how high the price or from what part of the world. Global trade makes it possible. Gourmet chefs had raised it to a trend. Now, this fad seems to be reversing. Now, what's new and modern is what sounds seasonal and local.

In the tropical countries, there's always something for the palate and the stomach in all seasons, from the harvesting hand to the mouth. Stockpiling is almost a foreign word – even, for a few decades, in our country. Fresh strawberries and asparagus are available in the middle of winter, as are new apples and peaches in May, and red cabbage and chicory in summer. It was different in our grandmothers' time. Back then, autumn's garden treasures were put in the cellar, or a natural cellar, freshly prepared, or were lovingly made into long-lasting preserves. In the dead of winter, the wife of the house proudly served hearty meals made from the stored gifts of the garden.

It was a guarantee of getting through the cold season, and, especially in our latitudes, a form of life insurance across all periods of civilisation (until the middle of the last century). How eagerly awaited was the spring, with the first fresh lettuce, the asparagus, and then the berry season!

Stockpiling in winter is "in"

Recently, something very decisive has changed with garden lovers. Long transport routes and months-long cold storage with the associated loss of life and plant ingredients are frowned upon. What's in demand is garden freshness. The lost aspect of meaningful stockpiling is again an issue. The trailblazers are again the gourmet cooks, who bring special culinary delights from grandma's garden and kitchen from the archives into the public domain. One thinks again of the good things of the "good old days" – because seeds from genetically engineered plants and hybrid breeds are unsuitable for later generations. Old types of fruit and vegetables are already missing from the usual range and fall into oblivion. There is increasing recognition that these industrial methods are very short-sighted. Classic varieties of fruit and vegetables are now experiencing a renaissance. They are especially suitable for producing your own seeds and promise exciting variety in one's diet. So, many fruit and vegetable lovers have reclaimed these rarities, either in protest or for the joy of doing it.



from Susanne Schütz and Anne Lorch

"The one who has vision knows how to steer things"

This subtitle is a quote from the Franciscan, Peter Amendt. In the long run, gardening without chemicals and in harmony with natural cycles makes absolute sense and motivates you to do a good deed for empty soil through low soil cultivation and humus-promoting methods. Multikraft microorganisms and biochar make work in organic farming safer. Multikraft products ensure resilient and stable plants and improve shelf life. Many vegetables remain in the ground and defy the frosty temperatures on the bed due to the warming work of the Multikraft microorganisms. So you can harvest from the garden directly to the table – even in winter. All life-building phytochemicals are preserved. Preservation methods such as gentle drying below 40° Celsius or fruit and vegetables pickled and lactofermented using Multikraft technology enhance the repertoire. The personal benefit of this process of rethinking is as follows: by eating our own harvest, we have first-hand experience of increased health and vitality.

Planning is part of the ongoing harvest: harvested bedding rows should be rearranged after the spring and summer harvest so that the topsoil is always covered with greenery. In the case of crop management with Multikraft technology, complicated crop rotation is unnecessary because the Multikraft microorganisms in the soil convert root-hostile excretions from previous cultures into life-building dominance. They rapidly prepare the nutrient supply from organic fertilisers for plants (Bokashi plus biochar, vegetable fumigations) and ensure continued fertility. How easy it is, even in the small environment of a garden, to ensure that the soil recovers. That means foresight, even in our immediate vicinity.

From Susanne's Wealth of Experience

1. Prudent

Carefully shake off heavy snow loads on ornamental and fruit trees, preventing wood breakage.



2. Pre-germinate potatoes

When inspecting the potato store, pick out small to medium-sized potatoes as seed potatoes now and carefully sprinkle them with EM Ceramic Powder. The life-building vibrations of the powder prevent rot and help you get the new season off to a good start.



From the end of February/beginning of March, place the small potatoes side by side in a shallow box in a bright location for pre-germination.

3. Careful harvest in frost

Beneath the brown, protective canopy hides a fresh, green head. Harvest at lunchtime or in mild weather, not during heavy frosts, to avoid damage to leaves. Cabbage is not only good for eating, but also for healing poultices if there's a nip in your bones.



4. Where to go with the Bokashi store?

If space is at a premium, store the kitchen Bokashi on a harvested bed until spring. Sprinkle some soil over the Bokashi after every 15 cm of material. Carefully cover the clamp with a stable tarpaulin so that it is airtight and rainproof.



5. Upright tomato seedlings

Cover the hole in the pot plates with a 2 cm thick layer of damp kitchen Bokashi, and only then fill with soil. This nourishing Bokashi store ensures extra-sturdy, resilient plants that hold up until autumn without infestation.

6. Outdoor plot preparation

When sowing in the open, thoroughly wet the sowing furrow before sowing with an EM Active solution. Plant the seeds powdered with EM Ceramic Powder. The dry seeds immediately bond with the moist soil groove (ground connection). Only then should the dry, well-ventilated soil be moved over the edge onto the seed, guaranteeing safe, fast germination.

7. Think ahead to anti-snail protection

Snails are already active on warm, early spring days. A snail collar should therefore be employed already when planting the first salads or early kohlrabi. This saves a lot of trouble and stops unwelcome guests having a feast. After a few years of consistent Multikraft microorganism use, this measure is no longer necessary because snails do not find weakened plants.

1 Cautious: Frees fruit and ornamental shrubs from heavy loads, avoids snow breakage. | **2 Looking ahead:** After the harvest, gently powder the potatoes with EM Ceramic Powder. | **3 Wisdom of nature:** A fresh head of cabbage hides under browned, frozen leaves. | **4 Good idea:** If you're short of space, store the Bokashi airtight on the harvested bed. | **5 Looking far ahead:** Particularly stable tomato seedlings develop with a Bokashi store in the perforated plates. | **6 Thoughtful bed preparation:** Moisten the seeding furrows well before sowing. | **7 Purposeful observation:** Snails only feast on unprotected seedlings outside the plastic rings.



How to have a healthy pond

Tips for maintenance in the spring

In order to enjoy a beautiful pond with clear water, experienced pond owners will start the pond season in the spring - at a time long before people are considering swimming. In addition to the necessary maintenance measures, the pond can also be perfectly prepared by using Multikraft microorganisms in a simple and natural way. Here are some tips for a clear pond season.

To start off

The condition of a body of water is always a matter of nutrient balance. It is therefore necessary to remove nutrients that are in the form of old biomass. Above all, dead water plants as well as foliage should be removed by March to April, because otherwise the plant parts decompose and the nutrients bound in it dissolve in the water body and are available for future algae growth.

By cutting back the water plants, growth is stimulated and dead plant parts are easier to remove. This time can also be used to separate aquatic plants that developed well in the last season and replenish areas where aquatic plants have died with new plants.

Next steps

In the spring old sediments - especially in the swimming area - can also be suctioned away. This also reduces the nutrient content in the pond. Due to the sediments, the suctioned water is very nutrient-rich and can be used in the garden to fertilise it. Some pond owners wrap the head of the sludge suction cleaner with a net. This prevents it from suctioning newts, dragon-fly larvae, and other pond inhabitants that are in the sediment. To prevent damage to the young shoots of aquatic plants, these maintenance measures should be carried out by the beginning of May at the latest.

As part of these measures, the pond liner should be checked around the edges for whether ice formation has caused damage. If the pond does not have a capillary barrier, the gravel fill around the edges should be checked once a year to check that it has not grown together with moss or other plants. This can cause nutrients from the environment to enter the pond when there is precipitation or humid conditions. In the case of ponds with filter material, the filter should be cleaned or backwashed at the beginning in order to prevent the nutrients from redissolving.



Spring treatment: EM Active, Zeo Bas ultra-fine, EM Ceramic Powder and water are spread with a water can

Multikraft spring treatment

After these first steps, the spring treatment can be carried out with Multikraft microorganisms, ZeoBas ultra-fine, and EM Ceramic Powder. These three products are mixed and diluted with a little pond water and spread using a watering can with a hole attachment over the entire regeneration area.

The spring treatment promotes the development of aquatic plants and prevents decay from forming. If decay occurs in the sediment or substrate of the aquatic plants, nutrients are released into the body of water and provided to the algae for future growth. EM Ceramic is best placed in flow-through areas such as watercourses or skimmers. It supports the effect of the Multikraft microorganisms and additionally provides pleasantly soft water by reducing the surface tension. Since bee pollen is very nutrient-rich, intense atmospheric input can pollute a pond. This can be remedied by using a skimmer that runs over a fine filter.

What to do with pond inhabitants?

For ponds with a fish population, work on the pond should start only when the water temperature is above 10°C and the fish are active again. The fish should only be fed at a constant water temperature from 12°C, otherwise the fish cannot utilise the feed. In the worst case, this could even lead to illness or death. If the water is too cold, the food is not accepted by the animals, sinks to the bottom, and begins to rot. This again promotes conditions under which algae as well as fish diseases can develop more easily. In fish ponds, the use of the Multikraft microorganisms creates a milieu that promotes animal health and the balance of the pond.

Focus on the pond

With these maintenance measures in the spring, pond owners lay the foundation for a perfect pond season with clear water. Since each pond has its own character due to its location and circumstances, it should always be considered individually. Multikraft consultants are happy to provide further tips for the respective requirements or for specific questions about pond care.

Advantages of Multikraft treatment

Natural and man-made ponds that exhibit excessive algae growth, severe cloudiness, or odour can be restored to their natural balance by using Multikraft technology. Multikraft microorganisms prevent rot from developing. As a result, fewer nutrients are released into the water body and algae growth is reduced.

A spring treatment with EM Active, ZeoBas ultra-fine, and EM Ceramic Powder creates an environment in which aquatic plants can develop better and thus extract more nutrients from the water body. Furthermore, by using Multikraft microorganisms sludge and sediment can be reduced. These are ideal conditions for clear water and a smooth pond season.



Alpine hospitality

How Multikraft microorganisms work in hotels

Guests move into their rooms, open the balcony doors and let their eyes wander relaxed over the meadows and surrounding mountain peaks. Later, a delicious menu from natural cuisine awaits.

Healthy enjoyment and ecological orientation go hand in hand at the nature hotel Chesa Valisa. Located in the midst of the Kleinwalsertal valley in Vorarlberg, since 2007 the nature hotel has been a certified organic farm, whose simple wooden construction blends wonderfully into the landscape. How many ways Multikraft technology has proven itself in large-scale operation, says Sieglinde Kessler.



Sieglinde and Klaus Kessler, owners of the nature hotel Chesa Valisa

Alpine roots

The house can look back on a long history: in 1507, while Christopher Columbus was sailing to America for the third time, wood was cut in Vorarlberg and the Walserhaus was built at an altitude of 1,200 metres. The farmhouse became a guest house in the 1930s, and a restaurant in the 1950s. In 1985 the house, taken over by Klaus and Sieglinde Kessler, the fourth generation of the family to do so. Today their family business combines tradition and modernity. Nature is an important asset to them. It was with this attitude that they formed their corporate philosophy, which rests on four pillars: the intact countryside around the building, healthy living, options for vitality, fitness and health, and conscious nutrition. Chesa Valisa has won the „Green Cap“ award for his delicious natural cuisine. „Healthy nutrition with Walser natural cuisine has always been important to us and we want to offer it to our guests. There are now 17 organic farmers in the Walser Valley, and nowadays it is much easier to procure ingredients to organic quality,“ explains Sieglinde Kessler, who always uses Multikraft microorganisms when cleaning in the large kitchen.

Powerful cleaning

„We heard about Multikraft technology at a lecture by Katharina Krebs here on the premises and were immediately hooked. I am really impressed with the probiotic eMC® Cleaners because they do no harm to the environment and no gloves are needed for our employees. At the same time, the cleaning effect is ideal.“

So spray bottles with diluted eMC® Power Cleaner are everywhere in the kitchen as a matter of course. Work surfaces are regularly cleaned with a 1:10 mixture of eMC® Power Cleaner and water. Likewise, the eMC® Power Cleaner is used to clean floors. „We don't have any greasy film in the kitchen at all, either on the work surfaces or on the floors,“ says Sieglinde Kessler with satisfaction.

The drain directly at the stove of a hotel kitchen leads into the grease separator. eMC® Power Cleaner is put into all mopping water, and this goes into the drain. „This is very noticeable when emptying the grease separator. Hotels of similar size empty the grease trap 3-4 times more often than we do. The Multikraft microorganisms are the best at decomposition work here.“

Fresh indoor climate

The spray solution with the eMC® Power Cleaner is also effective in cleaning rooms and windows. „We add a few drops of cleaner to five litres of water, spray on the mixture, let it work for a short time and then wipe it with a microfibre wiper. That’s all it takes. What’s noticeable is that afterwards the windows don’t get dirty so quickly.“

In addition, the Multi Fresh Room sprays ensure a pleasant indoor climate. „Especially in the high season, when the rooms are occupied again immediately after being vacated, it is important that odours are absorbed quickly. With the Multi Fresh Room spray Lemongras we get an optimal indoor climate and the Lemongrass fragrance brings freshness to the rooms,“ says Kessler, who swears by the all-round use of Multikraft microorganism in the house and garden. The eMC® Scale Cleaner also proves its worth in bathrooms and wellness areas, and the maids regularly sprinkle the red-flowering geraniums on the balconies with EM Active.



Stronger plants

Roses bloom wonderfully around the building thanks to Multikraft products. The four raised beds cultivated by permaculture gardener Andreas Haller grow vegetables such as cabbage, courgette, rocket and other salads, as well as herbs such as parsley, basil, sage, lemon balm and lemon verbena, which are sprayed with Terrafert Foliar and watered with EM Active at regular intervals to strengthen the plants.

Enthusiastic about the Bokashi household bucket, Sieglinde Kessler wondered how to use the system on a larger scale. Without further ado, she got two 500-litre rain barrels and made grille out of a steel sheet, which she placed half a metre above the bottom of the barrels. With these large Bokashi buckets, she gets the best fertiliser. „Our dishwashers, for example, empty the raw vegetable waste into these barrels and sprinkle them with a mixture of Organic Bokashi terra, ZeoBas basal rock dust, RoPro Streu (fermented charcoal grit) and EM Ceramic Powder. The barrels have an outlet, so that the fertiliser can be filled into canisters. The mixture is diluted and sprinkled on plants and borders, which then they thrive superbly, and even pests are kept within limits. Even at an altitude of 1,200 metres, Multikraft microorganisms are outstanding,“ explains Kessler, adding: „Multikraft technology is a wonderful solution for ecological business, not only in private households, but also in large companies. When it comes to ecological cleaning or plant strengthening, Multikraft products are the icing on the cake.“





Manju

The Power of Nature

Blocked nose? No thanks. Many regular takers of manju say that it supports the immune system and helps them stay healthy through the winter. It gives you strength. Studies from Japan reaffirm that the ingredients of this dietary supplement have a positive effect on our vitality and health. For around twenty years the fermented manju drink has been produced using state-of-the-art technologies at the Tropical Plant Resources Institute (TPR) on the island of Okinawa. Green papayas - known as "manju-i" - are fermented together with brown rice, rice bran, brown algae and special microorganisms in a year-long process.



Easily digestible

Fermented products have always been considered valuable foodstuffs. Due to the microbial and enzymatic conversion of organic substances, food is better preserved and more easily digestible by the body. The Ancient Greeks and Romans knew this as far back as Antiquity. They preserved white cabbage in airless conditions through fermentation with natural lactic acid, and were among the first to properly enjoy sauerkraut.

In the Asian region, soy sauce was known up to 2,000 years ago. This spicy sauce is traditionally made by fermentation in lactic acid and is now popular in kitchens around the world.

About 30 % of our foodstuffs are fermented. The fermentation process produces bioactive compounds that have a positive effect on our wellbeing.

Positive for blood values

This is especially true for manju, with its carefully selected, purely organic ingredients. During the fermentation process with special microorganisms, an essence with high antioxidant content is produced. This essence - also known as PAC - contains minerals (potassium, calcium, phosphorus, magnesium), trace elements and trace amounts of organic acids, oligosaccharides and peptides - i.e. many valuable ingredients that support vitality and health.

"Studies have shown that PAC has a positive impact on blood levels," confirmed Masato Miyajima, Laboratory Manager of the TPR on Okinawa in 2014. High blood lipid levels are responsible for conditions such as atherosclerosis, cerebral sclerosis, high blood pressure and heart attacks. Further studies conducted by the TPR indicate that PAC improves blood cholesterol levels.



New findings in diabetes

Currently, adiponectin is attracting the focus of scientific attention. Adiponectin is a peptide hormone. It is produced in human fat cells and, together with other hormones and insulin, regulates, for example, the sense of hunger and food intake. Low adiponectin levels in combination with genetic factors increase the risk of diabetes mellitus. High adiponectin levels help to regenerate damaged blood vessels, lower blood pressure and promote the decomposition of sugar.

Professor Matsuzawa and his colleagues at the Graduate School of Medicine at the University of Osaka are convinced that adiponectin is the key to curing lifestyle diseases resulting from too much stress, too little exercise and an unhealthy diet.

In clinical trials, participants took PAC (manju) three times a day. After a month of regular intake, both healthy people and diabetics showed increased adiponectin levels in the body. This new insight is of great significance. It shows that, with increased adiponectin values, positive effects on blood sugar levels can be achieved and blood sugar fluctuations can be contained.

Strength for the whole body

What is scientifically proven by numerous studies is shown by the experiences of people who regularly take manju, as in the case of the diabetic whose sugar levels have been very constant since they started taking manju regularly. As a dietary supplement with valuable ingredients, manju supports the body in many ways. It also strengthens the intestines and the immune system. Many users get through the cold season without suffering from colds or influenza. Overall, manju contributes significantly to one's wellbeing. Not for nothing is the natural power drink also referred to as drops of long life.

Sheep cheese cake



Ingredients in organic quality

(measured in 250-ml-cups)

- 2,5 cups wheat or spealt flour
- 1 sachet baking powder
- ¾ cup sliced sheep, goat or cow's milk cheese greek style
- 1 pinch of salt
- 2 eggs
- 1 ½ cups of natural whole-milk yoghurt
- ¾ cups of olive or sunflower oil
- 1 teaspoon summer savory (*Satureja hortensis*)
- 1 teaspoon finely sliced dried red pepper
- 5 slices of finely sliced salami or prosciutto
- a few pumpkin and sesame seeds to sprinkle on the top

Mix the flour with the baking powder and sieve (this will give the flour air and the cake will not be fatty). Then add the cheese, salami, salt, sliced pepper and summer savory, and mix everything well. In a separate bowl, beat the eggs with a fork, add the olive oil and continue stirring, then add the yoghurt. Add this mixture to the flour mixture and stir only slightly until everything is moist. Butter the cake tin and dust with flour, pour in the dough, sprinkle with sesame and pumpkin seeds and bake in preheated oven at approx. 200°C for 30 min.

Original recipe from Bulgaria

The skin as microcosm

The power of herbs is a well known fact.



In bioemsan organic cosmetics, herbs and Multikraft microorganisms form an extraordinary combination. The substances of the herbs supply each product with its distinctive characteristics. The microorganisms help balance skin flora and therefore benefit the protective functions of the skin.

Focus on microorganisms

Our focus and point of view keeps changing as scientists come to new conclusions. Today, it is common knowledge that the intestinal microbiome consists of 100 trillion different microorganisms and that these microorganisms are good for our health.

Like the intestine, our skin is a microcosm of the most diverging types of bacteria. About 100 to 10,000 microorganisms live on each cm² of our skin. This residential community fulfills important protective functions as skin flora.

Intact skin flora

In a skin that is healthy, microorganisms with regenerating functions predominate, giving it a fresh complexion. If the skin flora loses its balance, the skin becomes irritable and its health and appearance also suffer. However, when the skin flora is intact, pathogenic germs will have a hard time spreading. Skin care products that meet the requirements of the natural skin flora are therefore of great importance.

"We ferment specially selected herbs with Effective Microorganisms. In addition to the properties of the microorganisms, we also extract an optimum of substances present in the herbs.,,"

Bioemsan organic cosmetics

- Are based on a symbiosis of biological raw materials and Multikraft microorganisms
- Have balancing, cell-regenerating, cell renewal and anti-inflammatory properties; these have been scientifically proven (Dartsch Scientific GmbH 2010)
- Provide natural protection against free radicals; the antioxidants contained in bioemsan products are radical scavengers
- Prevent aging of the skin thanks to their antioxidant effect
- Protect the skin and promote its regeneration
- Bioemsan organic cosmetics are also ideal for problematic skin, atopic dermatitis or immunodeficiencies of the skin

Sophisticated formulas

Bioemsan organic cosmetics flatters the skin with its natural ingredients and improves skin flora using Multikraft microorganisms. This is what makes bioemsan organic cosmetics really special and unique.

All these microorganisms occur in nature and are obtained from soils and herbs. They are individually cultivated under sterile conditions. They are grown on vegan plates. The microorganisms used by bioemsan organic cosmetics are exclusively vegan. They are grown in a nutritive, watery solution. Essentially, 25 to 35 different species of lactic acid bacteria and yeasts are used. Depending on the product, they are used as auxiliary bacteria and mixed alive. Finally, regional and organic herbs are also added to the mixture. These mixtures are subsequently fermented with sugar obtained from natural sources.

Versatile effects

These high quality herbal extracts are incorporated into all bioemsan organic cosmetics products. With respect to the herbs used, we focus on organic and regional or fair-trade raw materials from around the world.

The bioemsan cosmetics line therefore also supports social projects by supporting fair production methods.

Tips & Tricks

How can Multikraft Microorganisms be used for pre-treatment of seeds?

Our tip from Dr Erika Rokita

The ultrafine EM Ceramic Powder is often used in the garden as a soil additive and soil activator as a support for the microorganisms living there. Due to its stabilising and antioxidant effect, it is also ideal for pre-treating seeds. It protects and strengthens seeds from the very beginning. For this purpose, the dried seeds are rolled in EM Ceramic Powder before sowing in the spring and allowed to rest there for a few hours or days (the longer the better).

A good alternative for stressed gardeners: open the seed bag and add ½ teaspoon EM Ceramic Powder, give the bag with the seeds a good shake, then sow.



How can the lawn be treated in spring for a better growth with Multikraft Microorganisms?

Our tip from Robert Rotter, Master in Ecology

When you use an organic fertilizer, it is advisable to additionally sprinkle the grass with a Multikraft microorganism mixture in spring. For a lawn surface of 100 m², mix 1 liter of EM Active, 100 ml of Terrafert Soil and 100 g of EM Ceramic Powder and spread the mixture evenly on the lawn.

This treatment promotes the availability of nutrients from the organic fertilizer and will strengthen the lawn. It will also help patchy and undernourished lawns to regenerate more easily.



What must be observed when sowing seeds and how do Multikraft Microorganisms play a supporting role?

Our tip from Dr Erika Rokita

The seeds sown in pots or in the field are usually covered with sowing soil (you can also mix black soil with a little sand) 1 to 2 times the thickness of the seeds and are watered, or better still, sprayed with a solution (50 ml EM Active and 10 ml of Terrafert Soil to 10 l of water).

This procedure and the previous pre-treatment of the seeds have a positive effect on seed growth, and encourage faster germination and a better rooting in the soil. The seeds are sure to develop well and sprout vigorously after sowing. According to our experience, they will sprout one to two days earlier. This treatment and the further regular application of 10 ml EM Active, 5 ml Terrafert Soil to 10 l water, will also successfully prevent pest infestation.



Using eMC® Power Cleaner in the treatment of floors

Our tip from Multikraft customer Elisabeth Hoffmann, Vienna

Unfortunately, a wrong formula was used when my brick floor was treated with wax. The wax turned into a really hard layer and became discoloured. After some unsuccessful attempts to remove the wax layer with cleaning agents and solvents, I was introduced to the eMC® Power Cleaner from Multikraft during a visit at the Stumpflhof. One evening, I dripped some pure eMC® Power Cleaner onto the brick floor and was extremely surprised the next morning. I wiped the floor and in those places the brick floor shone.

For several weeks I treated the floor regularly with eMC® Power Cleaner, rubbing it in with a wire brush and then washing off the floor. In this way I was able to remove all the hard wax without sanding the brick floor and without having to use chemical agents.

It's astounding how Multikraft microorganisms work!

Note: The eMC® Power Cleaner can be used undiluted on brick floors. For floors made of natural stone, the eMC® Power Cleaner should by all means be diluted.

Dosage for a cleaning bucket: 10-50 ml eMC® Power Cleaner (1-5 caps) for 10 litres of water. Use this cleaning water to clean normally soiled surfaces. Floors will be clean, obtain a particularly beautiful shine and the cleaning effect lasts longer than with conventional cleaners.



Before treatment



Result after treatment

Manju – The drop of long life

Manju 500 ml & Manju Fresh Packs

The fermented drink from Okinawa is available in 500 ml bottles and in practical 10 ml Fresh Packs for when on the go.

Manju Coral Calcium

Made from the unique Okinawa corals with a natural calcium-magnesium balance. Naturally rich in minerals, trace elements and vitamin B complex due to its natural yeast. As a daily food supplement.

Manju Sea Salt

The salt of life from the ocean's depths - a mineral-rich, high-quality sea salt, which is produced using a special process based on Multikraft technology with an addition of Manju.

