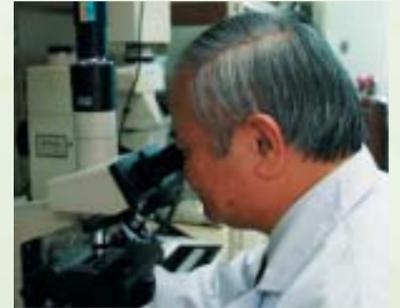


'I could attend every medical conference and present the theory, the research and the results. But if I spend my time trying to convince scientists, I will be wasting precious time that could otherwise be used to help people who are dying from their disease.'

Teruo Higa, lecturer in horticulture, inventor of EM-X, Okinawa, Japan



THE MIRACULOUS EFFECTS OF A
COCKTAIL
OF MICRO-ORGANISMS

EM-X

A unique mixture of bacteria and yeasts forms the basis for a natural medicine with remarkable healing properties. EM-X is a Japanese concept with an exceptionally powerful anti-oxidative effect. The medicine is amazingly effective in the treatment of a variety of diseases and can also be taken preventatively. Marco Visscher paid a visit to Japan, this magic potion's country of origin, in order to investigate the promising claims being made, not by enthusiastic amateurs, but by a group of experienced scientists. He talked to people who prescribe the remedy as well as to Teruo Higa, the one-of-a-kind inventor of EM-X.

BY MARCO VISSCHER

MAGIC POTION

What is EM-X?

EM-X is a curative, natural draught that has a powerful anti-oxidative effect. It is said that the potion, which is not registered as a medicine, could – possibly in combination with other treatments – play an important role in curing a variety of diseases, allergies and other disorders ranging from geriatric illnesses to cancer. It can also be used as a preventative to stop excess oxidation from taking place.

A daily dose of 5 to 10 milligrams is sufficient as a preventative supplement. In cases of disease, the recommended dose can go up to as much as 200 millilitres a day. EM-X is odourless and tasteless and has a pale brown transparent colour. In addition to micro-organisms from EM, other ingredients include rice bran, seaweed and papaya. Since EM-X appeared on the market in Japan in 1991, it has been introduced in dozens of countries on every continent in the world where it is sold for €70 per half litre and in Japan for €40.

Teruo Higa (1941) studied at the faculty of agriculture at the University of Ryukyus on the island of Okinawa, Japan. As a student he focused on fruit cultivation and fruit trees, an underdeveloped branch of agriculture on Okinawa. He also followed a graduate research program on the cultivation of mandarins at the University of Kyushu. In 1970, he was appointed lecturer at the University of Ryukyus, where he has been a senior lecturer in horticulture since 1982.

In 1981, Higa accidentally combined a mixture of micro-organisms that stimulated extraordinary success in the cultivation of crops. This formed the basis for EM technology, effective organisms, and the start of a series of products that can be used – see Ode March, 2003 – in agriculture, horticulture, cattle breeding, the fisheries, the treatment of waste, water treatment and in the construction industry. EM is a curious mixture of photosynthesising bacteria, lactic acid bacteria, fungi and yeast, all of which are characterised by their anti-oxidant and regenerative effect. EM technology is used in about 120 countries, namely in agriculture, the fisheries and water treatment.

Higa has (co-) authored a large number of publications, many of which have been printed in English. His most popular book is 'An Earth Saving Revolution'.

WHO IS TERUO HIGA?



The clinic of cancer specialist Khalida Usmani was regularly overflowing with patients. The waiting room was usually occupied by dozens of women surrounded by an even larger host of children. Most of them came from the city of Lahore, others from more remote areas of Pakistan; Usmani's reputation for treating breast cancer is wide spread. However, despite operations and therapy she could not always prevent women from dying. And the cases in which the cancer regressed after treatment remained large.

One day a Japanese lecturer, Teruo Higa, visited her clinic with a liquid remedy that he promised would significantly improve her treatment programmes. He called the concoction EM-X and claimed that it supported the body's natural ability to recover. He explained that EM-X was a special cocktail of micro-organisms that neutralised harmful substances and strengthened the immune system. According to Higa, Usmani's patients wouldn't need much of the 'magic potion': 5 millimetres on the morning of the operation followed by 10 millimetres twice a day thereafter.

Seven years later, Usmani looks back: 'I had my doubts. Breast cancer is a dramatic illness. How could such a small dose of the potion help? Especially in Pakistan where many women are extremely superstitious and afraid of being treated. They are not easily persuaded.' But her Japanese visitor had left a few litres of EM-X behind and Usmani soon noticed that the women that used it in combination with the conventional treatment – operation, chemo therapy and hormone therapy – recovered more quickly and had much less chance of the cancer regressing.

So how does it work? When the oxygen in our body combines with other molecules (oxidation) so-called free radicals are released (also see box 'Free radicals for the advanced'), which help the body kill pathogens. Too many free radicals can damage our cells, however, which in turn can impair the natural workings of the immune system. One way to counterbalance this unwanted effect is by ingesting anti-oxidants. Well-known examples include Vitamins C and E, and flavonoids, found in green tea, for example. According to anti-oxidant adherents, to achieve maximum results, you need to take a mixture of anti-oxidants. EM-X is such a mix. That makes it both a power-

ful healing agent as well as a means for healthy people to regulate their oxidation levels and thus prevent free radicals from becoming harmful.

Interestingly, EM-X's proponents are not limited to the non-academic ranks of practitioners attracted to many alternative medicine treatments. EM-X is being subjected to close academic scrutiny and has been commended by a wide range of reputable scientists. This support, and the spreading stories of its remarkable healing potential, make EM-X an unusual story.

Khalida Usmani is not the only specialist to have experienced EM-X's healing power. In November 2003, a group of doctors, therapists and researchers gathered in Okinawa, Japan, for a conference on EM-X. The Chinese doctor Huirong Tao, who is associated with the Toushi Clinic in Hokkaido Japan, narrated the success stories of four cancer patients treated with EM-X and a special diet. Their tumours, whether situated in the chest, the prostate or the liver, diminished significantly and in some cases disappeared.

Cancer is not the only disease that EM-X can combat, however. Yevgeni Konoplya, chairman of the institute for radiobiology at the National Science Academy in Byelorussia, presented his work with EM-X in the areas where the accident at the nuclear power station in Chernobyl had resulted in serious health problems. People who were



'Patients using EM-X experience less pain. Their appetite, energy levels and emotional stability improve.'
Khalida Usmani, cancer specialist, Lahore, Pakistan



'There is no scientific explanation for EM-X, but who cares if it helps people to get better?'
Ng Poh-Kok, head EM Research Organisation, Kuala Lumpur, Malaysia

afflicted with chronic fatigue, high body temperatures and serious defects in their DNA benefited greatly from EM-X and showed a remarkable improvement in their physical condition.

It was evident from the presentations that the doctors and therapists could only resort to anecdotes and their own experience rather than proper, but prohibitively expensive, clinical research. The conclusion of Shigeru Tanaka, head of the Asaka Kousei Hospital Wako City in Japan was unintentionally illustrative: 'I have no data with which to convince specialists. But how important is this when, in my many years of experience as a doctor, I have seen how, when treated with EM-X, patients in my clinic recover from cancer, diabetes, heart disease, asthma, Alzheimer's, high blood pressure and chronic rheumatism – and much more besides.'

Behind the scenes at the conference the lack of convincing scientific backing was a much-discussed topic. 'According to modern science, current beliefs are only considered proven if you have tested 100 people with identical responses. By definition this is not the case with EM-X.' The analysis comes from Ng Poh-Kok. The former top advisor of the United Nations' agricultural policy came into contact with EM-X quite by chance. At present, he is head of the modest Malaysian division of the EM Research Organisation, of which the small office in Kuala Lumpur unintentionally appears to have been transformed into a clinic for the most 'hopeless cases': patients who have tried almost everything to find a cure and finally come to him for help as a last resort.

'Everyone responds differently to EM-X,' Poh-Kok explains, 'because it adapts to the body. EM-X is based on micro-organisms and is therefore a living, dynamic and complex whole. The fact that the body itself seeks equilibrium and health is wonderful news for the

patient. But for the doctor this requires an open mind in order to understand the process as well as courage and experience to interpret it and apply it. Consequently, EM-X cannot be understood on the basis of current scientific methods. But surely this is not a problem when it is making people better?'

During the conference, when logically speaking he should be the centre of attention, Teruo Higa, the inventor of EM-X, presents himself as an outsider. Calm and immovable he sits in his chair and listens to the presentations with his eyes half closed and a slight smile constantly playing on his lips as if his thoughts were elsewhere. It is not the self-satisfied smile of a know-it-all, but more the natural expression of a modest Buddhist lama. He constantly gives the impression of being preoccupied and deep in thought.

It is only when the coming and going of foreign doctors and therapists has subsided that Higa finally finds time for an interview in his office. And for a man whose discoveries some regard as the 'salvation of the world', Higa has a very modest office. It is housed in a small building, without a hall or reception room, in Ganeko, on the Japanese island of Okinawa. In a space of about 30m², 12 computers hum and various telephones ring. The employees are mostly young, nearly all of them ex-pupils, who have become interested in their professor's unorthodox work.

Higa worked, apparently unperturbed, for 20 long years on a promising technology he discovered by chance. Prior to his discovery, he spent years in his laboratory at Ryukyus University, in Okinawa, the island of his birth, experimenting with different micro-organisms, which he hoped to introduce in the cultivation of crops. He was convinced that nature had the means to drastically increase produc-

'I have no data to help me convince the specialists, but thanks to EM-X my patients recover from illnesses such as cancer, diabetes, heart disease, kidney disease, asthma, Alzheimer's, high blood pressure and chronic rheumatism – to mention but a few.'

Shigeru Tanaka, head of Asaka Kousei Hospital, Wako City, Japan



FREE RADICALS FOR THE ADVANCED

Free radicals are natural phenomena in our bodies. The generation of energy in our cells causes the release of free radicals, which our immune system then happily uses to eradicate invaders and pathogens. An overproduction of free radicals can have a harmful effect on our bodies, however. Cardiovascular diseases and diabetes are examples of sicknesses that are associated with the production of too many free radicals in the body.

Free radicals are produced during oxidation: the process during which electrons are extracted from molecules. Oxidation occurs through electromagnetic radiation or sunlight, for example, but the best known, and in this case the most relevant, process of oxidation occurs when oxygen in our bodies bonds with other molecules. This constantly happens when we breathe, for example, or when our body breaks down nutrients.

During the oxidation process a stable molecule can lose its natural equilibrium. When an electron is extracted, the amputated molecules – free radicals – attempt to replace the missing electron. They do this by stealing electrons from stable molecules, so that they in turn also become free radicals. During the process it is also possible for molecules to become burdened with an additional electron. They will then attempt to get rid of their superfluous electron elsewhere. In both instances a dangerous chain reaction takes place resulting in a succession of small injuries to the body.

The uncontrolled activities of free radicals – which have come into being through an excess of oxidation – can very rapidly cause a great deal of damage. For example, they can break down proteins in the cell wall thus causing the cell to lose its protective power. They can also perforate the cell wall thus making it easy for bacteria and viruses to enter. They can damage the protective layer around the nucleus of the cell, thereby damaging genetic material. They can undermine the immune system by causing damage to defence cells.

However, there are natural substances that are able to prevent the production of free radicals: anti-oxidants. In layman's terms they are described as being products and substances that stimulate the immune system, but the greatest use of anti-oxidants is their capacity to prevent oxidation from taking place, thus making it impossible for the production of free radicals to take place. We can also acquire anti-oxidants by way of food. Examples of this are vitamins C and E and flavonoids, which are present in green tea and wine, for example.

There are also a number of anti-oxidants that, to a limited extent, are able to snatch away free radicals once they have been produced. Enzymes such as SOD (superoxide dismutase) and glutathione remove most free radicals from our bodies. These anti-oxidants can provide the amputated molecule, which has consequently become a free radical, with the missing electron or remove the extra electron so that the molecule becomes stable once more.

tivity, but his ideas met with little success. At the end of every day he had to swallow his disappointment and pour what remained of his experiments down the sink, only to start the following day from scratch with a new, random compound of micro-organisms.

However, one day in 1981, things changed. He noticed that a patch of grass in the indoor garden at the laboratory was growing unusually quickly. He asked around trying to find out which of his colleagues or students was experimenting with the grass, but nobody could tell him anything. Suddenly he remembered that not long before he himself had thrown the remains of his micro organisms into the garden. He turned to his logbook in an attempt to find out which mixture it had been and thus discovered a compound that had a surprisingly productive effect in soil. Twenty years later Higa's own EM Research Organisation announced that EM was being used in at least 120 countries in agriculture, horticulture, livestock breeding, fisheries, the processing of waste matter, water treatment as well as in the construction industry (see Ode, March 2003).

Since his chance discovery, Higa's work and life have been devoted to devising applications – such as EM-X for human consumption – and the development of theories that could explain the effect, which is the primary criticism of his work: his scientific reasoning is incorrect. It cannot be correct because it contradicts theories supported by the international scientific establishment.

Moreover, the manner in which new applications of EM technology are recommended and considered does not comply with the stringent methods of conventional science. EM-X provides a case in point. The two-day conference resulted in many hopeful anecdotes and success stories by doctors and therapists from different countries, but the research they presented was unconvincing and the



Photo: Fotostock





explanations controversial. For example, the Pakistani cancer specialist, Usmani, mentioned a control group: a group of people who had exactly the same ailment (breast cancer) treated in exactly the same way (operation, chemotherapy and hormone therapy), but then without the use of EM-X. 'Patients who use EM-X,' she concluded, 'experience less pain. Their appetite, vitality and 'emotional stability' improved compared to patients who had not taken the treatment.' However valuable these results may be, for a sceptical scientist they are not conclusive proof.

When I visited him in his room at the small office I started our discussion by confronting Higa with this criticism. 'I think it will be very difficult to convince conventional scientists,' he responded cautiously, looking back on a 20-year old controversy in which most of his Japanese colleagues had been involved at one point or another. 'They tend to divide everything into little pieces, each part of the human body. They can see we both have the same tumour but they refuse to acknowledge the fact that you and I are two different people. But because we are different it is quite logical that you and I will react differently to what the scientists have prepared for us. Current medical science is in the middle of an important age. There are new challenges, relatively new diseases for which there is no cure – and which cannot be prevented – because of the way we approach these problems today. To me it is therefore clear that we need to introduce a completely new concept.' And, in Higa's opinion, EM-technology is indeed an example of such a new concept. 'EM-X is based on prevention and on one's own responsibility. It is based on micro-organisms and therefore involves living material. It is based on the idea that each person reacts differently for the simple reason that every person is different. These are fundamental principles that modern scientists have lost sight of. I could constantly provide them with information

'I believe it is essential to stimulate preventative treatment. I am convinced that EM-X could play an important role here.'

Kazuo Minami, head of the Japanese division of the World Health Organisation

THE SECRET OF EM

EM technology greatest secret lies in the composition of the micro-organisms used in the elixir. Further explanation takes us back to the beginning of time. Millions of years ago, the earth was populated by what we now call anaerobic bacteria, minute organisms resistant to the extremely high temperatures that prevailed at the time, but vulnerable to oxygen. Initially oxygen tolerance was unnecessary as the earth's atmosphere consisted mainly of methane, ammonia and carbon dioxide. Oxygen, like nitrogen, was a waste product resulting from the activities of these first micro-organisms. In time, however, they had produced so much oxygen that they had in fact poisoned their own environment. The organisms were faced with the simple choice: adapt or die.

The anaerobic micro-organisms adapted. They reduced their activities and changed their genetic composition and thus acquired anti-oxidation capabilities, which allowed them to survive the increased oxygen levels and conserve their energy until conditions became more favourable. They abandoned the earth's surface and settled in the calm depths of the oceans where they were able to live comfortably without oxygen.

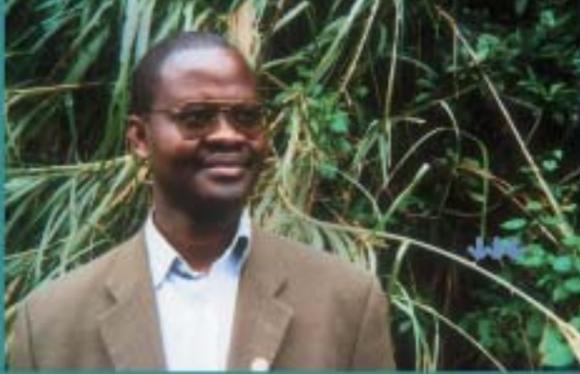
According to microbiologists it is absolutely impossible for anaerobic and micro-organisms to cohabit. In fact, it was – and still is – regarded as a natural fact that one species will triumph over the other. By chance Higa discovered that, contrary to popular belief, it is possible to combine these organisms. By using a liquid concentrate in the soil, the mixture is able to neutralise harmful substances and stimulate micro life into production. These characteristics are found in all products based on EM technology, including EM-X.

on EM-X. I could attend every medical conference and present them with the theory, the research and the results. But if I spent my time trying to convince scientists, I would be losing good time otherwise spent on saving the lives of sick patients who are dying from disease. I have made my choice. I would rather focus my attention on people that have an open mind and really need EM-X, and not on those that are suspicious of it from the very start.'

EM-X is not a medicine. The costs of getting it officially recognised as a medicine would be high. Expensive research into evidence of its effect and side effects would need to be done. In practice, such processes can only be afforded by powerful companies and not by the smaller operations such as the EM Research Organisation, which is largely dependent on kind benefactors for its funding. At present EM-X is sold in the form of a 'soft drink' in countries ranging from the United States to Kenya and from Indonesia to Brazil. However, in view of the price – \$70 per half litre – and the powerful effect it has on the body, nobody is likely to simply gulp it down.

There is another reason why EM-X is not a medicine and never will be: Higa does not wish to make it a medicine out of principle. 'If EM-X is a medicine,' Higa reasons, 'you would only be able to get it on prescription. And the only time you go to a doctor is when you are sick. I don't think that you should allow things to get that far. I see health as something you are personally responsible for. It is not your doctor, but you who are responsible for staying healthy. This means that – if you are in a position to do so – you should eat healthily and even take preventative supplements whenever you deem it necessary. If we worked on making EM-X a recognised medicine, it would be in contradiction to my philosophy.'

There are more rules and laws of the established order that Higa refuses to conform to. His attitude is typical of the ideas of a scientist that has always considered the result to be more important



'On the basis of my research on rats, I can only say that a treatment of EM-X could benefit people suffering from Alzheimer's, MS, epilepsy, Parkinson's, dementia and other diseases.'

Okezie Aruoma, faculty of chemistry, Queen Mary University, London, Great Britain

'If EM-X is a medicine,' Higa reasons, 'you would only be able to get it on prescription. And the only time you go to a doctor is when you are sick. I don't think that you should allow things to get that far. I see health as something you are personally responsible for.'



than the theory. In 'An Earth-Saving Revolution' – the most popular book he has written on EM so far, and which has now been published in several languages including English, German, Korean and Chinese – he tells us that his approach has made him an outsider at the agricultural university of Okinawa. 'I am afraid that I have harped rather too much on the practical application of a fact, theory or technology,' he writes when describing the atmosphere at the university. 'It did not take me long to discover that I had built up a somewhat unfortunate reputation for myself. Because I was not interested in theoretical discussions my colleagues regularly gave me the brush-off. But then again, I found that they did not understand the essential nature of an academic study.'

However, the conclusions being drawn on the effect of EM-X are not entirely without foundation. Indeed, thorough research has been done. Study by Mamdooh Ghoneum, an immunologist at the university of medicine and science in Drew, California, have shown that EM-X stimulates activity in NK-cells: an essential factor in the attempt to control cancer. There is also increased activity of the immune system cells.

And then there is the work of Okezie Aruoma, an associate of the faculty of chemistry at the Queen Mary University in London, who describes himself as the first person to 'do fundamental research into EM-X'. His studies have been published in European scientific magazines. His most recent study has shown that anti-oxidants protect the central nervous system. 'On the basis of my research on rats,' Aruoma concludes, 'I can say that treatment with EM-X could have a beneficial effect on people suffering from illnesses such as Alzheimer's, MS, epilepsy, Parkinson's disease and dementia.'

All the research actually boils down to the same thing: EM-X appeals to the forces the body naturally possesses. This explains Higa's answer to the cases where EM-X has no effect: more EM-X. He

feels that in such cases the oxidation levels in the body are apparently high, so more anti-oxidants are necessary. People in developing countries will need less to realise an effect, according to Higa's line of reasoning. Their living conditions have left their internal 'micro-life' reasonably intact. They have not grown accustomed to conventional medicines, and also have fewer chemical residues in their bodies. For these people, one or two millilitres of EM-X would be sufficient to realise a considerable effect in the treatment of an illness.

Things are very different in rich countries say the doctors gathered at the conference in Okinawa. Chemical medicines, artificial fertilisers, pesticide residues, stress and tobacco stimulate the production of free radicals. At the same time, because of highly improved hygienic circumstances, Westerners have become more prone to hospital infections and allergic reactions, for example, ailments that used to occur on a small scale. In other words, anti-oxidants will play an increasingly important role in modern life.

Nevertheless, EM-X is not always effective. In his presentation Shigeru Tanaka talked about patients with very high levels of cholesterol in their blood. Tanaka did a small-scale study in his clinic and discovered that only about half of the people with this disorder responded. Could this be a placebo effect? Tanaka shakes his head. 'There can be no question of a placebo effect for one very decisive reason: EM-X works in animals – and as you know, animals have no notion of which medicine they are being administered.'

In his book 'Life Saving EM-X', Tanaka writes that it was through the animal kingdom that he actually came into contact with EM-X. More than 10 years ago Tanaka heard about EM-X and started experimenting with dogs, birds, pigs and cows. The doctor mixed the expensive potion in their feed and observed a rapid improvement in their health. 'Even animals suffering from swine fever or udder infections made an excellent recovery,' he says.

Only then did Tanaka take it himself. 'In my former position as mayor of Wako I would have to race from one banquet to the next, and was therefore unable to stick to the requisite diet, so I started taking EM-X. And what happened? My diabetes was reduced. And even today I am able to maintain the blood level values of a healthy person. Moreover, it enabled me to do with less sleep, which suited me very well as everyday political affairs caused me permanent stress. In fact I consider it a positive sign that after taking EM-X I am able to tolerate alcohol better. The use of alcohol causes more strain on the liver.'

However therapeutic EM-X may be for modern man, Higa has sworn not to promote it. While pharmaceutical companies spend huge sums of money on promoting their medicines, Higa refuses to focus attention on his products by the same means. 'Even if I had enough money to promote EM-X, I would not use it for that purpose,' he says. 'People would be attracted by a beautiful poster or a lively commercial. They would then try a bottle, but then stop taking it if they saw no immediate effect. They would then change to another supplement that is being advertised or on offer. I don't think that this is how it should work. People have to understand the concept of EM technology for it to be of use. This is why I would never put EM-X on the market by way of aggressive campaigns and never force it on people. The best approach is to talk about it so that the news spreads. This sounds very logical, but modern society works in the opposite way. The primary reaction to a useful discovery is precisely to ensure that as few people as possible know about it, until you have ensured that it will earn you as much money as possible. I do not wish to be a part of this.'

In an age when every inventor appears to attach primary importance to his patent, Higa has decided not to apply for a patent to EM technology or the products that result from it, such as EM-X. He would consider this very strange: after all, the technology is based on micro-organisms, on nature. In his opinion, everything that exists in



'In my opinion, EM-X is the very best thing that could happen to people's health.'
Kazuhiko Atsumi, professor emeritus, university of Tokyo, Japan

RECIPE: BE HEALTHY WITH EM-X

Although everyone reacts differently to EM-X, each person's response follows the same pattern. Based on his experience using the remedy to treat sufferers of allergies, asthma, cancer, diabetes, high or low blood pressure, osteoporosis and skin diseases, Ng Poh-Kok, head of *EM Research Organisation* in Kuala Lumpur, Malaysia describes the three stages:

1. The body must first be purified. Drink lots of water and take 10 millilitres of EM-X per day. Well-known detoxification symptoms include extreme transpiration, headaches, flatulence, shivering and eye problems.
2. After one or two weeks the dose may be increased to 30 to 200 millilitres for a period of six months. During this period of time there will be two or three periods of regression – with possible attacks of severe transpiration, an increase in body temperature and even palpitations – so that the dose will have to be reduced slightly.
3. After six months a state of 'rejuvenation' will manifest itself. People will then only need between 10 and 40 millilitres of EM-X, which will act like an engine and continue to stimulate the person's health.

Healthy people should take a daily maintenance dose of 5 millilitres as a preventative measure.

nature should be the common property of every man, woman and child on the planet. How could anyone claim that for himself?

This has not made Higa a rich man. It is said that he has not earned one penny with EM. He is satisfied with his salary as a university lecturer. His associates are only too glad to tell you that he and his wife have lived in the same modest house for the last 20 years. EM technology's high price is related to the expensive and time consuming production process. Higa has often promised not to raise the price, but to reduce it, and he has kept his promise on a number of occasions.

Medical science will eventually have to focus on prevention. This is the opinion of Kazuo Minami, head of the Japanese division of the World Health Organisation. 'In Japan the costs of medical care continues to rise,' says Minami. 'The situation has become intolerable. The costs will become far too high if we continue in this way. We cannot reduce disease if we continue to be dependent on Western medicine. I believe it is essential to stimulate preventative treatments. I am convinced that EM-X can play an important role here.'

Kazuhiko Atsumi, professor emeritus of the University of Tokyo shares this opinion. The 75-year-old Nestor of Japanese medical science and former pioneer in technological breakthroughs such as the artificial heart and laser treatment, predicts that the end of Western medicine is near. 'We find ourselves at a breaking point in medical history,' Atsumi claims. 'We realise that in the treatment of many disorders Western medicine is not always as effective as it claims to be, that the effect of alternative medicines cannot be explained by conventional science and that the costs of our medical care are becoming too high. This leaves us with only one solution: prevention. Current supplements – in the form of vitamins and minerals – will continue to exist. However, the effect of EM-X will always be greater simply because it contains more bio-active substances. In my opinion this is the very best thing that could happen to people's health.'

Higa does not consider himself a revolutionary. More of a 'revolutionary' he remarks smilingly, referring to anaerobic micro-

organisms, which developed their capacity for anti-oxidation in the past (see box 'The secret of EM'). Nevertheless, he is convinced that EM technology is the ideal means of realising sustainable, environment-friendly agriculture, which will not only produce enough to feed the growing world population, but will also produce healthy nutritional products that could alleviate most of our present diseases and disorders.

However, says Higa, EM-X will only play a temporary, modest role in this dream. 'The use of EM technology in agriculture is very cheap for farmers, certainly if one compares it to the high cost of pesticides and artificial fertiliser, which would then become superfluous. If you consume food that has been grown using EM you will have food that is so healthy that you will no longer need EM-X. Consequently, I prefer to focus attention on the applications of EM in agriculture and horticulture, cattle breeding, and the fisheries, so that it will help us to create a cleaner environment in which we cultivate our food. If the surrounding environment is no good, how then can you determine your own physical health?'

'If more and more people use EM-technology in their lives, the health of the population and the environment will improve enormously,' Higa continues. 'Moreover, more food will be available for consumption because the yield per hectare increases when you use EM in agriculture and horticulture. Many people in the world worry about whether they have enough food. They see the harmful effects of pollution around them, and this is certainly true of slum areas where waste matter and water are important problems. EM technology also offers solutions to these problems.'

When does he think that his technology will be in general use? 'According to my most optimistic prognosis,' Higa predicts, 'this could already be the case in 10 years' time. I am an optimist, but it is really true: during the last year alone I have seen more happen in the field of EM than in the preceding 19 years.'

For more information visit www.emtechnologynetwork.org, www.emtech.org and www.emro.co.jp/english. Please e-mail overseas@emro.co.jp to find out where you can obtain EM-X.



'If more and more people use EM-technology in their lives, the health of the population and the environment will improve enormously.'