Manuel Schneider

Myths in Agriculture

Arguments for Organic Agriculture

Facts to counter prejudice, misconception and ignorance

2nd, extended edition

with an additional section on
"BSE and Organic Agriculture"

Translated by Helen Stork (IFOAM)

About the author:
Dr. Manuel Schneider, born in 1959, was Scientific Director of the Schweisfurth Foundation, Munich, until the end of 2001. He now works as a freelance project consultant for foundations and NGOs. He has published numerous books and articles on environmental and animal ethics, sustainable agriculture and time ecology.

Amongst others, he is author and co-publisher of the following books: "Die Natur ins Recht setzen" (Karlsruhe 1992), "Kommunen entdecken die Landwirtschaft" (Heidelberg 1995), "Zeit-Fraß. Zur Ökologie der Zeit in Landwirtschaft und Ernährung" (München 1995/ 2000), „Bodenlos – Zum nachhaltigen Umgang mit Böden" (München 1997), „Nachhaltiger Umgang mit Böden – Initiative für eine internationale Bodenkonvention" (München 1999), „Den Tieren gerecht werden – Zur Ethik und Kultur der Mensch-Tier-Beziehung" (Kassel 2001), „Genopoly – Das Wagnis Grüne Gentechnik (München 2003)

Address: Dr. Manuel Schneider, Projektbuero ! *make sense* !, Valleystr. 36 Rgb., D-81371 München, Germany, E-mail: manuel.schneider@make-sense.org

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Preface to the second edition

"The BSE-scandal marks the end of an old-fashioned agricultural politics. It lies before us in ruins" This is how the german Minister of Consumer Protection and Agriculture, Renate Künast, began her policy statement on 8 February 2001. It sparked a broad public discussion about a paradigm shift in agriculture. In this context organic agriculture, which was hardly perceived officially for years – is increasingly gaining recognition as the future model that is capable of making the agri- and food culture more ecological.

The sales figures of the first edition of this book exemplify such rising interest. It sold out within six months. This new edition has been revised, updated and extended with a postscript on the BSE-crisis.

Munich, Spring 2001 *Manuel Schneider*

Foreword

Agriculture concerns us all, as we all need the fruits of the earth. Nevertheless, it seems as if our modern urbanised society has lost contact with the countryside and the products it supplies us with. Although "essential" to life, most people are indifferent to agriculture. Time and again we witness how *few* people know about agriculture and the origin of their food – even those that are interested and educated.

Instead, it becomes apparent through discussions and conversations that society has certain pre-conceived opinions on conventional as well as on organic agriculture. Notions and claims that are most often the result of ignorance, prejudice and misconception infiltrate into the human mind like "myths". They hinder meaningful public discussions about the future of agriculture and our nutrition.

This booklet takes up ten such "myths" and examines their validity. While basing his main arguments on facts, the author has tried to be as objective as possible. At the same time we do not want to deny that this booklet is aimed not only at *informing* but also at *convincing* the reader; to convince with arguments for a fundamental and widespread greening of agriculture and food production that do justice to the meaning of this word. The Schweisfurth-Foundation as well as the Foundation for Ecology and Agriculture (Stiftung für Ökologie und Landbau) are determined to promote organic agriculture, which includes supporting an organic food culture. Their conviction stems from the firm belief that organic farmers, who treat their land, plants and animals with great care and produce food of high quality (from a health, ecological and ethical perspective), deserve the support of us all.

There is no doubt that organic agriculture is currently gaining in significance. On the one hand it is illustrated by the fact that the number of farms "in conversion" is growing rapidly each year, which propels it out of its market niche. On the other hand, we have witnessed a dramatic surge in nutrition-related illnesses in recent years and an increasing number of nutritional experts are proposing an organic agri- and food culture as an alternative to fast food and industrial food. This undoubtedly has helped to enhance peoples´ perceptions of organic agriculture.

. Organic agriculture is also gaining wider political acceptance in the context of 'sustainable agriculture'. This widely discussed concept was popularised at the UN

Conference on Environment and Development in Rio in 1992. As a concept it is just as indispensable as it is difficult to grasp. It implies a reshuffling of our current economy and lifestyles to such an extent that they become sustainable in the *long term* instead of impeding on the environment, future generations and developing countries. Hardly anyone who cares about politics or social issues can turn away from this problem. Many people talk about "sustainability" but hardly anyone knows what it means and whether it even exists.

Organic agriculture can fill this knowledge gap. Apart from organic agriculture there are few areas in which successful sustainable management has been in place for decades. Sustainability, a demand that our consumer society is only just beginning to grasp, intrinsically belongs to an organic agriculture system. Rather than being an alien concept, it is the basis of its productivity. Seen from this point of view, organic agriculture is not a "niche sector of the holy" but rather a movement that is ahead of its time. It stipulates a direction in which society still has to develop. The good thing about it is that anyone can be part of the solution by taking the decision to buy organic food.

We would be pleased if this booklet helps increase the number of people who make the conscious decision to do so.

Munich / Bad Dürkheim, Summer 2001

Karl Ludwig Schweisfurth
Chair of the Board of Trustees
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Immo Lünzer
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Acknowledgements

A booklet, such as this one, requires input and ideas from many people. I received critical comments and amendments to the first version of this text from various experts. I have tried to incorporate them as far as possible. For pointing out mistakes and misleading passages of text as well as gaps in my line of argument, I would like to thank Prof. Dr. Helmut Bartussek, Prof. Dr. Arnim Bechmann, Prof. Dr. Engelhard Boehncke, Oliver Emmes, Thomas Fisel, Dr. Anita Idel, Immo Lünzer, Dr. Günter Postler, Lutz Ribbe, Frieder Thomas, Dr. Helga Willer, Dr. Uli Zerger. I particularly wish to thank Dr. Karl von Koerber for his numerous suggestions for improvement as well as Michael Miersch for his journalistic advice on the first version of the text. The responsibility for the remaining "prejudice and misconceptions" remains solely with me.

Manuel Schneider

1. Myth:

“ “Starvation exists because there is not enough food to feed the world”. Therefore, we need more agrochemicals, synthetic fertilizers and genetic engineering.”

What is true about this statement? Approximately 800 million people worldwide do not have enough food to eat and 30 million people starve each year.

However, this starvation is not caused by insufficient food production. If one divides the food available globally by the number of people currently alive, everyone would have enough to eat. Statistically, the amount of food per head available each day is 1 kg grains and pulses, 1 kg meat, milk and eggs as well as 500 grams of fruit and vegetables[1].

Never before have we had the surpluses of food that we have today[2]. This applies not only to rich industrialised countries, where the number of obese people has increased drastically in recent years (according to the World Health Organisation (WHO) standards, more than 50% of the US population is obese; globally there are just as many people who are overweight as underweight[3]). Developing countries may also achieve high yields, often in areas adjacent to starvation. Approximately 80% of all undernourished children under 5 years of age live in countries that produce food *surpluses*[4].

Why is it then that millions of people are still starving? According to the WHO, those who are suffering are hindered in either the production or the purchase of food for their own consumption[5]. The causes of starvation are plenty, but only seldom are they related to the rate of agricultural productivity. Rather, developing countries are highly in debt and must therefore export food, feed and other agricultural products (so called “cash crops”) to the wealthy countries of the northern hemisphere in order to generate income. This often occurs despite the fact that much of the population of the country in question goes hungry. In turn, the local population often does not have the money to buy the foods that are usually available in abundance[6]. Other causes of famine are governmental misconduct, land expulsion caused by large landowners, wars and political conflict as well as low levels of literacy and education throughout the population. *People are starving because they are poor and powerless*. The causes of the most severe famines in the past decades – such as in Ethiopia, Somalia, and Sudan - were of political origin.

Despite a critical food situation, enormous amounts of foodstuffs are fed *to animals*. Globally, approximately 40% of grain yields find their way into animal feed troughs. In Germany, over 50% of cereals grown are used for animal feed[7]. Of the *total* crop production in Germany, more than 80% goes to animal feed[8]. This illustrates that many conventional theories on food shortage are incorrect. The global count of agricultural livestock exceeds 20 billion. Over 1.3 billion cattle, nearly 1 billion pigs, 1.8 billion sheep and goats and 13 billion chickens – in addition to other livestock - currently inhabit our planet to serve humans as a source of food and to supply us with milk and eggs[9].

Animals were traditionally fed with grass, hay and food waste, which were unsuitable for human consumption (as is still common practice amongst small-scale farms in developing countries or in grass grazing systems, such as in our mountain regions). Feeding animals with grain or soya, however, puts them in direct competition for food with humans and amounts to an enormous waste of energy: approximately 9 kg of grain is fed to a cow to yield 1 kg of beef, and 12kg of grain is needed to produce 1kg of chicken meat. To produce the meat for one hamburger, a farmer has to feed about as much grain to his animals as a baker requires to bake three loaves of bread[10]. Grain fattening as applied in animal husbandry is an immense waste of calories and protein, a waste which is borne by the poor and hungry people of this planet.

Therefore, we do not need biotechnology or any further intensification of agriculture in order to combat worldwide famine. In fact, we need international political programs to target and prevent the *true* causes of hunger.

Conclusion: *There is enough food in the world. People are starving because they are poor, not because there is not enough food. The major proportion of global crop yields are fed to livestock instead of being used for human consumption.*

2. **Myth:**

"Organic farmers cannot produce enough food to feed everyone in the world."

What is true about this statement? On average, organic farmers produce less than farmers that use synthetic fertilisers and agrochemicals and who intensively feed their livestock with concentrated feed and so called growth promoters (e.g. hormones).

On average, the yields of organic farmers are up to one third lower than those of conventional agriculture (with large variations depending on location, animal species and cultivated crop). This is more or less equivalent to the amount of agricultural *surpluses* that are produced and partially destroyed in the EU – with the substantial use of subsidies (i.e. tax money).

Statistically speaking, the food supply in Germany and Europe as a whole would be secured, *despite* lower yields, through an overall conversion to organic agriculture[1]. A US-study discovered that even in North America, a total conversion to organic agriculture would not lead to a food shortage[2]. Therefore, Europe and North America could supply their population with sufficient amounts of food through widespread conversion to organic agriculture.

While for the world as a whole there are, as yet, no figures comparable to those quoted above, similar results have been found in some southern countries. According to a recently published study, organic farms in India, Tanzania and Senegal have achieved the same, if not higher yields than those of comparable conventional farms[3]. Mexican "campesinos" (small-scale farmers), that farm without the use of pesticides and synthetic fertilizers, can harvest 15 tonnes of foodstuffs per hectare through skilful mixed cropping and crop rotations. Yet, in the same region, chemical intensive corn plantations in monoculture achieve only six tonnes[4].

Excessive meat consumption in wealthy nations is also a problem, and one associated with health, ecological, social and animal welfare concerns [5]. Considerable amounts of feed could be saved if excessive meat consumption were reduced, effectively compensating for the lower yields of organic agriculture. Additionally, a reduction in meat consumption would contribute substantially to alleviating famine worldwide [6]. For example, meat consumption in Germany would merely have to be lowered to the level of a country such as Italy (the intake of total calories derived from products of animal origin would have to be lowered from the current 39% to 24%). Consequently, an overall conversion to organic methods of food cultivation would become possible and food security for the population would be ensured[7].

Furthermore, when simply comparing agricultural yields, the fact that the excessive use of synthetic fertilizers and agrochemicals increases the financial dependence of farmers is often overlooked. Above all, this poses a problem to poor, small farmers in developing countries. The intensive application of these hazardous substances causes long-term destruction to the environment upon which agriculture as a whole is based. For example:

- Today, rivers, lakes, groundwater and coastal zones in agricultural regions are already polluted due to excessive fertilization.
- Over the past 40 years, approximately one third of the world's agriculturally cultivated land has been lost due to erosion[8].
- In regions with excessive fertilization and high pesticide use, the number of living organisms in the soil, which are of vital importance to soil fertility, is steadily declining (usually one can find as many micro-organisms in just one handful of healthy earth/soil as there are humans on this planet!). Additionally, birds and other beneficial wildlife migrate from intensively managed farmland[9].

Conclusion*: Organic agriculture can supply sufficient food for industrialised countries. Studies have shown that this is also possible for developing countries. The excessive use of agrochemicals and synthetic fertilisers destroys the environmental foundation for all types of agriculture.*

3. **Myth:**

"Farmers receive too many subsidies."

What is true about this statement? Half of the EU budget (at least 40 billion euro each year) flows into the agricultural sector.

However, farms do not receive all of these subsidies. A large part of the 40 billion Euro in agricultural subsidies goes towards other sectors of the agricultural industry. While the lion's share of the subsidies is allotted to product price support, considerable amounts also flow into the processing, storage and exports of foodstuffs. The EU even finances the destruction of food surpluses and the export of live cattle from the EU. Hence, profits are made through agriculture but not in agriculture.

The remainder of the subsidies that are not allocated to export and storage companies are supposed to benefit farmers. In fact, small and medium size farms hardly receive any payments. However, it is these farms that are generally less specialized, less technologically intensive and tend to utilize diverse methods of production. They are the farms most likely to produce crops in an organic, and thus sustainable manner and which sustain cultivated landscapes that are rich in biodiversity.

Organic agriculture, which is known for its environmentally friendly production methods, receives only a fraction of EU subsidies. Again, it is the large farms with vast amounts of land and intensive methods of production that profit from the direct payments from Brussels. It is no coincidence that the recipient of the largest amount of subsidy in Germany is a crop farm comprising some 9000 hectares[1] (in comparison, the average farm in Germany is "only" 33 hectares in size[2]). The same is true for livestock husbandry; most of the subsidies go to large and highly technical factory farms that are focused on milk production or beef fattening. The Brussels support system rewards quantity over quality. Those that have a lot receive a lot. In total, 4% of the farms receive 40% of the EU agricultural subsidies[3].

Despite the enormous amounts of annual subsidies, farming in Europe is rarely a rewarding business. Therefore, it is not surprising that each year numerous farmers give up their businesses. Over the past 50 years, 1 million of the former 1.65 million farms have gone out of business[4]. Today, over 40 farms per day cease production and in Europe as a whole, a farm is "set aside" every two minutes[5].

Many farmers depend on subsidies because producers´ prices for grain and other agricultural products are so low. Farmers receive as little as 2 Pfennigs of the price for a bread roll. The cost of brewer's barley needed to produce one bottle of beer is as low as that of a bottle top[6]. Today, farmers receive even less for wheat than they did 35 years ago. At the same time, bakers receive five times as much for a loaf of bread[7]. Not only European farmers, but also small farmers in developing countries suffer under such practices, which are known as "surplus-dumping". That is, food is exported from the EU to developing countries at below market prices. This causes the price for food in these countries to drop to such an extent that profitable domestic production becomes virtually impossible.

According to most experts on the issues of current world market prices for agricultural products, a complete abolition of agricultural subsidies in the EU (as, for example, was successfully carried out in New Zealand) seems neither feasible nor desired. If this were to occur, agriculture would barely prove economically feasible in Western Europe, which would then lead to a total dependency on food imports. The landscape would also change completely if farming were abolished. Without the constant input of numerous farmers, there would no longer be a cultivated landscape.

Alternatively, subsidies could be reduced and allocated differently. Farms that pollute soil and water with chemicals, or those farms that cultivate animals by the hundreds in extremely crowded and distressing conditions (so-called factory farms) should not be rewarded with tax-payers´ money. Those farms that produce crops in an environmentally friendly manner treat animals well and produce food in a responsible way deserve public support. To a certain extent, the EU´s agricultural reform ("Agenda 2000") is a step in the right direction, in that it further reduces guaranteed

prices for overproduction. Instead it introduces, as an example, direct payments to farmers for the upkeep of the countryside or for methods of organic production. Still, a change in trend seems unlikely, as only 5% of the total EU agriculture budget for 2000 is earmarked for environmental measures in agriculture[8]. This is only twice as much as the EU spends on supporting the cultivation of tobacco.

***Conclusion**: The majority of farmers see only a fraction of the billions of Euros that are distributed in subsidies. Producer prices in Europe are so low that farming has become barely profitable. At present, those that profit from the subsidies tend to be factory farms.*

4. **Myth:**

Today, farm animals grow well and provide high milk yields and farm poultry produce large numbers of eggs. Therefore, they cannot really be suffering

What is true about this statement? Factory farmed animals give larger amounts of milk, lay more eggs and reach slaughter weight more quickly than those from organic farms.

Factory farms achieve amazing results: battery hens lay almost one egg a day. Fattened bulls seem like living mountains of muscle. Pigs reach their slaughter weight after only half a year. Although the pigs still have milk teeth and their skeleton is not completely developed, they carry the fattened weight of a fully-grown pig (100kg). Similarly, rapid fattening of broiler chickens to “maturity” takes only 33 days, and dairy cows produce 6000 litres of milk each year, twice as much as 40 years ago.

However, increased production comes at a high price. To a large extent, the life of these animals is “running on empty”. [1] If a hen manages to lay just another egg before it dies of exhaustion, or if a fever-stricken cow still produces 20 litres of milk, it does not mean they are healthy. In fact, they are producing despite the fact that they are ill and under stress. Hence, an animals´ performance is no longer a sign of good health. Evidence suggests, through long-term evaluations undertaken by the University of Bonn, that the performance of German dairy cows was increased by 30% between 1960 and the mid-nineties. At the same time, udder illnesses drastically increased by 600% and claw and limb diseases surged by 300%.[2] In other words, although animals are producing more, they are dis-proportionally often ill.

Specialised, selective breeding converts certain livestock into grotesque muscular forms. 25 years ago, a fattened turkey reached a weight of 11kg. Today, it can weigh nearly twice as much. Often, the birds fall over forwards and are no longer capable of breeding naturally[3]. Comparable figures for pigs and poultry prove that the gap between an increase in performance and the frequency of illness is constantly widening in regards to intensive animal husbandry practices.

Rapid growth and high performance are not achieved only through highly selective breeding and intensive feeding. Legal and illegal aids, so called growth promoters, are also often part of the equation. Vets, the police and journalists are continuously uncovering criminal practices, such as the use of hormones or hormone like substances (e.g. Clenbuterol). Until recently, it was legal to use antibiotics as growth promoters. However, at least some of these substances were banned in 1999.[4]

Increased performance has been proven to be directly linked to a strong decrease in life expectancy. While cows that are kept on farms that do not practice high performance breeding and intensive feeding often live beyond the age of 10, the average life expectancy of a dairy cow in Germany is only three years. In the USA, a cow produces milk for only 2.2 years on average. Problems related to calving, fertility disorders and other ailments often lead to premature death in the abattoir. Despite leading to the production of enormous quantities of milk, concentrates and other supplements have caused the total performance of a German dairy cow (i.e. the amount of milk a cow produces in its lifetime) to remain the same over the past 40 years![5]

Scientific tests reveal the extent to which animals suffer in cramped factory farms. Behavioural scientists provided animals with the possibility of obtaining better housing conditions through their own initiative, by fulfilling specific tasks. In an ethological test, pigs pushed a button up to 80 times in order to obtain straw and other useful materials. Hens squeezed through a narrow gap of 9cm, which they utterly disliked, in order to access litter in which they could scratch.[6] The animals demonstrated what their needs are and what housing conditions they find to be the most appropriate.

***Conclusion**: The enormous increase in the production capabilities of livestock comes at a high cost: specialised breeding, the use of pharmaceuticals to increase production and poor systems of livestock husbandry and housing destroys the health of an animal in the long term. In scientific tests, animals chose the living conditions that are commonly found on organic farms.*

5. **Myth:**

"Organic food is too expensive. Only the wealthy can afford it."

What is true about this statement? Organic food is more expensive than conventionally produced food.

Conventional products, produced with the aid of synthetic fertilisers, agrochemicals, animal pharmaceuticals and so called growth promoters used to fatten animals, appear to be cheaper, which they are not. Consumers may believe that they are saving at the till, when in reality, taxpayer's money is used to clean up the mess industrial agriculture leaves behind. And this in addition to the cost of the subsidies which benefit large, chemical intensive farms far more than most organic farms. Conventional agriculture causes a variety of environmental problems, which is either paid for with tax money or is left for future generations.

For example, even before the outbreak of the cattle disease BSE ("mad-cow disease") in Germany, BSE cost the EU, or rather the taxpayer, 12 billion DM. This figure does not include the national expenses of the member states. [1] The total economic cost of the BSE-crisis has not yet been determined. BSE was caused through contaminated feed, which contained remains from dead or diseased animals. The epidemic would never have occurred on organic farms, as animal remains are not fed to cattle and other herbivores *(see annex "BSE and organic farming").*

Organic farmers usually have lower crop yields because they do not apply synthetic fertilizers, pesticides or herbicides. They fatten their animals more slowly, give them space to roam and provide appropriate housing. Organic farmers have higher labour costs because they look after their animals better and do considerable amounts of manual work, such as weeding. The higher diversity of organic farms also causes an increase in working hours. In addition, organic farms have to undergo an extensive system of control, thus incurring additional costs. Therefore, organic farms must charge higher prices for their products.

However, purchasing organic products is not nearly as expensive as many believe. The Eco-Institute in Freiburg (Germany) calculated that the average additional cost of buying staple foods of organic quality amounts to only 40 Euro more per month for a middle-income family of four (515 DM instead of 475 DM). The model calculation included milk, butter, eggs, potatoes, wheat flour, rice, pasta, bread and even coffee and bananas. If at the same time the consumption of meat, meat products, sugar, sweets and jam are reduced, the total costs are nearly the same. [2]

The main cause for certain undesirable developments in agriculture often lies in low consumer prices. Those farmers that have to produce meat as cheaply as possible are forced to treat animals as insentient objects. The direct consequences of food that is made artificially cheap are mad cow disease, swine fever epidemics, hormone treated meat, factory farms, gruesome live animal transports and polluted drinking water.

Yet today, the average German household spends only about 15% of its income on food*).*[3] This is equivalent to the amount of money spent on leisure and holidays. In 1950, a family spent about half of its income on food and drink, whereas today the price for food has fallen relative to incomes. In order to buy a 1 kg broiler chicken, the average wage-earner had to work for more than two hours in 1960, whereas in 1994 it was only 14 minutes *(see table).*[4] It is not surprising, that valuing food as a provider of life has been lost. While we are content to spend about 10 Euro / liter on motor oil, oil for human consumption may cost no more than 2 Euro. Some supermarkets sell "exquisite" cat food that is twice as expensive as a pork chop (in terms of the per kilo price of meat).[5] Therefore, the willingness to spend more money on good food depends more on attitude rather than on income.

Conclusion: *Any person in Germany earning an average wage can afford to purchase organic food. It is not too expensive. On the contrary, conventional products are too inexpensive. The cheap food offered in supermarkets comes at a high economic price, incurred through subsidies and environmental costs.*

6. **Myth:**

"Organic agriculture is more concerned about nature than about people."

What is true about this statement? Nature and environmental protection are of huge importance in organic agriculture.

The publication of Rachel Carson´s famous book "Silent Spring" in 1962 initiated a turning point in agricultural practices. The book focussed on the harmful effects of the pesticide DDT, which was then in widespread use, on birds and other wildlife. Scientists, farmers and consumers began to rethink the conventional use of pesticides and agro-chemicals, thus providing an immense boost to organic agriculture, which was at the time still in its infancy.

Many organic farmers take environmental protection very seriously.[1] They do not use agrochemicals; they plant hedges and do not drain ponds and only begin mowing once young field birds have fledged. Therefore, there are up to five times more species of wild plants, insects and microorganisms on organically cultivated farmland than on comparable conventional farmland. The population density of endangered birds, such as the skylark and the Yellowhammer, is clearly higher[2]. The criticism from certain agriculturalists that organic farmers care more about "ecosystems, White Wagtails and wetland habitats than about people" is possibly the most foolish objection ever made against organic agriculture. No living beings profit more from organic agriculture than humans.

Turning from monotony and monoculture to diverse methods of cultivation and animal husbandry that are appropriate to meadows and farmland, leads to the development of a cultivated landscape that is aesthetically pleasing, something we all appreciate. The diversity of species on fields is increased and the unhealthy nitrate pollution of water is reduced by the non-application of artificial fertilizers and the sparing use of organic fertilizers from farmyard manure. In addition, consumers´ wallets are spared, given that the price for water that every citizen pays reflects the expensive treatment required to clean nitrates and pesticides out of contaminated drinking water. Ammonia fumes and methane gas that are emitted from factory farms pollute the air and climate. In certain areas with intensive animal husbandry, the fumes have even caused trees to die. Organic agriculture avoids these threats, thereby sparing human health and nature simultaneously.

According to the World Health Organization (WHO), three million people worldwide are harmed through the improper use of pesticides each year, of which 220.000 die[3]. In the USA alone, 300.000 farm workers and farmers fall sick each year due to pesticide poisoning[4]. Organic agriculture deliberately opposes the use of these dangerous substances, to the benefit of those that work in the countryside.

Many doctors warn about the intensive and widespread use of antibiotics, which factory farms use not only as a health prophylaxis, but also as a growth promoter, posing a considerable threat to human health. The danger with this practice is that viruses that are also dangerous to humans become accustomed to the antibiotics,

and thus develop effective resistance. Life-saving antibiotics lose their effectiveness. Each year, 1, 600 tonnes (!) of antibiotics are fed to livestock in the EU, approximately one fifth of the total production of antibiotics[5].

Organic farmers do not use antibiotics routinely on their animals. They only use them when they are ill and when homeopathic or herbal medications are inappropriate. Additionally, the animals may not be slaughtered until such time as the body has broken down the medication. To be certain, the withdrawal period after use of such medication is *twice* as long in organic agriculture as it is in conventional agriculture.

For the consumer, if produced competently, organic food not only tastes better, but is proven to promote good health and physical well-being. Comparative quality research between organic and conventional food shows that organically produced fruit and vegetables contain noticeably *lower* levels of pesticide residues and nitrate content. At the same time *higher* levels of vitamin C, minerals and desirable proteins were detected[6].

Organic agriculture is a benefit to people not only from the point of view of health. While the number of full time jobs in conventional agriculture has decreased continuously and drastically since the 50s, organic farmers create new jobs – not only in agriculture itself, but also through on-farm food processing and marketing of organic products. According to a survey by the Schweisfurth-Foundation[7], on average almost one third more workers are required after conversion to organic farming methods. A separate investigation[8] revealed an increase of up to 60%. in the number of workers employed.

It is not surprising that organic agriculture has led the way in situations where people have to be specially protected and cared for: two thirds of agricultural workshops for physically and mentally challenged people in Germany practice organic agriculture[9].

Conclusion: Organic agriculture does not only protect nature and preserve the environment, but also safeguards human health and creates valuable new jobs.

7. **Myth:**

"Organic farmers are opposed to technology and are green idealists."

What is true about this statement? Organic farmers do not welcome every example of technology the agro-industry puts on the market. It is also correct to say that organic farmers are often idealists.

The figures demonstrating the success of organic agriculture have convinced even the most sceptical critics. There were only a handful of organic farms in Germany in the 1960´s. Today, Germany has around 10 000 registered organic farms, which work according to the EU regulation for organic farming. Approximately two and a half per cent of the total agricultural land is farmed organically, and this number is set to increase.[1] Contrary to popular misconceptions, organic agriculture is not a "hobby for idealistic hippies". More and larger farms, notably in Eastern Germany, including former cooperative farms (LPGs) that extend over thousands of hectares, are converting to organic farming methods.

Other countries in Europe have already progressed further. For example, in Italy, the country with the highest current annual rates of growth for organic agriculture, the percentage of organically farmed land is above 5%. Austria has the highest proportion of organically farmed land in Europe with 8.4%. Throughout Europe, more than 3 million hectares of land are currently farmed organically. According to the estimates of market experts, the turnover in organic products in North America, Europe and Japan is currently around US$ 20 billion annually – with an increasing share of the market [2].

These success stories are not due to a romantic aversion to technology. Organic farmers also work with modern machinery, and certain machines have been developed specifically for use on organic farms. For example, there are exceptionally sophisticated machines that can remove pests (such as the Colorado beetle in potatoes) from plants mechanically, making the use of chemicals unnecessary. Moreover, organic farmers are often experts in the field of biological (instead of chemical) pest management, making use of scientific knowledge on soil and optimising crop rotation. Many organic farmers work in close cooperation with research institutes and universities, as it is crucial that the use of technology is not only "efficient" and profitable, but also ecologically sound.

Organic agriculture can also offer a great deal from an economic point of view: as the German governments´ annual agricultural reports state, organic farmers earned up to 8% more than their colleagues in conventional farming [3]. A recent European-wide study has similarly concluded that organic farms tend to make higher profits - in relation to the number of people employed - than conventional farms[4].

Conclusion: *Organic farmers use modern technology and farming methods that are profitable. The number of organic farms and the sales figures for organic foods are rapidly increasing throughout the world.*

8. **Myth:**

"Organic food is for vegetarians and ' wholefood-freaks'."

What is true about this statement? In the past, health food stores/organic stores seemed to be geared towards "vegetarian fundamentalists". At times, strong convictions were more important than good taste.

Roast pork with dumplings and sauerkraut served with a foaming beer – can this be organic? Of course it can! Organically produced Jelly babies, exquisite wines and instant meals can be found. Organic farmers do not instruct anyone on what to eat. Today just about every type of food is available organically produced – even frozen pizza.

As such, organic agriculture does not require a particular kind of nutrition. While the percentage of vegetarian customers may be higher in organic food shops than in conventional supermarkets, organic agriculture is not geared exclusively towards strict vegetarians. On the contrary - animals play an important role in organic

agriculture. In areas where arable farming is impossible, cattle and sheep graze on plants that are unsuitable for human consumption, while at the same time producing valuable organic manure. Therefore, products of animal origin (such as milk and meat products) also belong to the organic agro- and food- economy.

In organic agriculture, the number of animals is restricted to the amount of available land. This ensures that the absorption capacities of soil and plants are not exceeded through over-fertilization. This prevents the intensive nitrate pollution of water that is directly linked to industrial agriculture - most commonly in areas where factory farming predominates. Keeping the number of animals in balance with the amount of available land is necessary from an ecological perspective. It is not possible to keep the 15 million cattle, 25 million pigs, nor the countless millions of battery-caged hens and broiler chickens that currently inhabit German factory farms [1] in a manner that complies with organic agriculture standards and which will ensure the responsible treatment of animals. Therefore, a conversion to organic agriculture methods implies a reduction in the numbers of livestock and consequently, a reduction in meat consumption.

Irrespective of these facts, nutritional experts suggest a reduction in meat consumption, highlighting that people who care about their health should consume more vegetables, potatoes and fruit and cut down on products derived from animals. Meat, sausage and eggs are delicacies that should be consumed in moderation. The German Society for Nutrition recommends the consumption of no more than an average of 85-grams/ day[2] of meat and sausages – about half the amount the average German consumes today.

Conclusion: *organic agriculture provides delicacies to suit every taste and diet. Those who prefer to maintain a health conscious diet should consume less meat and more fruit and vegetables, and above all, eat organic quality food.*

9. **Myth:**

"Organic food does not look very appetising."

What is true about this statement? Organic fruit and vegetables have a less standardised appearance than their conventional counterparts. Organic meat products often look pale and grey and have a higher fat content.

Food and human beings have one thing in common: appearance is not all that matters. While the shiny red, immaculate apple or the full, bright-green pea and a fat-free steak may look appetizing; their quality is often poor. If plants and animals are bred specifically for appearance, it is often at the cost of other, often more important characteristics.

In conventional agriculture, certain chemicals are used specifically for the purpose of enhancing appearance. In order to make apples, oranges and other kinds of fruit look attractive they are treated with shine enhancers and anti-rot substances. A US-study reveals: the effect of 60-80% of pesticides used on oranges and 40-60% of the chemicals used on tomatoes are solely for the purpose of enhancing appearance, and have nothing to do with possible yield losses incurred by pests[1]. If consumers

were ready to accept small and natural irregularities in fruit and vegetables, this could prevent the application of huge amounts of chemicals – without a loss in yield.

Organic farmers do not use such agrochemicals. Instead, they focus on biodiversity. For example, they often cultivate traditional varieties of fruit that appear smaller and less perfect. However, these varieties can hardly be beaten by the glamour-fruit when it comes to taste and vitamin content[2]. Besides, one can tell by the look of the apples and pears that they are not standardised products of industry, but are products of *nature, as* each piece of fruit is slightly different in appearance, colour, taste and consistency.

The growing standardisation and uniformity of natural products, which consumers misconceive as a sign of "quality", inevitably leads to an increasing industrialisation of production methods. For example, the specialised methods of vegetable cultivation are close to perfection, as technicians manage to produce vegetables without the use of soil (from which plants usually extract nutrients and in which they grow) - so called soil-less cultivation. The efforts that go into cultivating organic vegetables, such as ensuring that the quality and fertility of the soil is sustained by skilful crop rotation and careful soil cultivation, are no longer necessary in modern, fully air-conditioned greenhouses. Rather than growing in soil, plants are now grown in hydro cultures of rock wool or polyurethane, and other similar substances, while being artificially fed with scientifically designed liquid fertilisers. It is not surprising that the products of such laboratory-"agri"culture can hardly be beaten for symmetrical appearance and tastelessness. In the Netherlands, over 90% of tomatoes, cucumbers and peppers are produced in such a "soil-less" way[3].

The differences in quality between organic and conventional meat products are equally evident. Consumers falsely believe that a "good" piece of meat must be as lean as possible. Low-fat Schnitzel, however, are often waterlogged and shrivel in the frying pan. Meat that is too lean tastes bland and dull, as it is the fat that contains the natural flavour. In addition, extremely lean pigs are prone to stress and suffer damages to their immune system, which subsequently weakens their natural resistance. Organic farmers tend to fatten their animals over a longer period of time than is common in factory farms. When animals gain muscles gradually, they tend to stay healthy and develop meat that contains fine fat veins – a sign of excellent quality, at least to gourmet chefs.

Conclusion: *Occasionally organic food may not have an appearance that is as impeccable as chemically treated fruit and vegetables that are produced hydroponically. However, it is usually more nutritious and tastes better than standardised, uniform fruit and vegetables or low fat meat from factory farms.*

10. **Myth:**

"Organic? It's a con!"

<u>What is true about this statement</u>? There have been very few cases of fraud in the organic sector.

No products are safe from fraud - take watches, perfume and jeans as examples. Organic products are more expensive than their conventional competitors. Therefore it should come as no surprise that the organic market occasionally falls victim to fraud. Some consumers react with total resignation to such disclosures, along the lines of “Then it doesn’t matter what I buy anyway”. This is the wrong reaction! In particular, information will make fraud much more difficult to perpetrate in the future, while those people who go on purchasing cheap food products will continue to support cruel factory farms and chemically intensive crop farming. It would be unfortunate if consumers refrained from buying organic products solely in order to avoid the insignificant percentage of attempted fraud.

Today, consumers can be as certain as ever that they will not be subjected to such false products. Since the EU-regulation on organic crop farming came into force, life has become more difficult for organic fraudsters[1]. For example, products that are labelled “organic” have been subjected to extensive government control systems for years[2]. At the European level, independent inspection and certification bodies ensure that products that are labelled “organic” are truly organic. In addition to mountains of documentation on the organic production process, organic farms are controlled by both regular and spot farm inspections. Major violations, such as the use of pesticides or synthetic fertilizers, leads to the farms´ immediate expulsion from the respective organic certification system.

The few organic farmers that disregard organic regulations are not the main problem. In fact, the main problem lies with those producers and processors that want to take advantage of the current bio-boom by giving the impression that their conventional products are of organic quality. One has to be cautious with labels that resemble legally protected terms (e.g.”organics”, “eco” or “bio”). Vague phrases, such as “farm fresh eggs ” or “produced naturally”, as well as idyllic pictures of the countryside on packaging, deliberately try to mislead consumers and deflect from the products´ origin, which is very likely the factory farm. Vague terms such as “integrated cultivation”, “controlled cultivation” or “extensive cultivation” simply refer to the various forms of conventional agriculture. They do not guarantee the rigorous methods of organic production!

Various organic farming organisations and certification bodies in Germany, such as Bioland, Naturland and Demeter have even more stringent quality standards than the EU-Regulation on organic farming *(*this is also true of UK certification bodies such as the Soil Association). At the international level, organic production standards are set and controlled by the International Federation of Organic Agriculture Movements (IFOAM).[4] For over 25 years, this umbrella organisation has been working for a harmonisation of quality standards for organic products and organic methods of production. It now unites approximately 750 organisations and institutions in over a hundred countries.

Conclusion: *A certain amount of attempted fraud with organic products is unavoidable, as is the case in any sphere of business. However, official certification symbols , legally binding standards, approved trademarks and independent inspection and certification bodies ensure that organic farmers and processors comply with the rules.*

Postscript

“BSE and Organic Agriculture”

The *structural* problems of conventional agriculture (and the subsequent costs to the general public) were highlighted by the BSE-crisis. Therefore, organic agriculture is increasingly seen as a model for “greening” the agricultural sector. Organic agriculture, due to its alternative production methods, gives consumers who want to eat high quality meat from healthy animals the highest assurance.

Although the disease was first diagnosed in the mid-eighties, in England, , we still do not know how BSE *developed* initially. We know more about how the disease was able to *spread* like an epidemic. In this instance, two ways of infection can be distinguished. They are both related to the feeding methods in intensive agriculture - and which were never methods applied in organic agriculture:

Feeding of animal remains
Cattle are herbivores by nature. In order to increase their productivity, it is common in conventional agriculture to feed them with concentrated feed, which, in direct relation to the price, could also contain animal remains. This animal meal is made from bones, skin and intestines from abattoirs as well as from dead animals. BSE-infected cattle were also shredded into animal meal and fed to their fellow species. As a direct consequence of the BSE-crisis, feeding ruminants with animal remains was prohibited throughout Europe in 1994. Still, feed contaminated with animal remains continued to be identified - in Germany too.

The feeding of animal remains is prohibited in organic agriculture. It has always been so, not just since the occurrence of BSE. Ethical grounds play as much a role as do consumer and animal welfare considerations: farm animals should not feed on the dead of their own species. Instead of giving them carcass remains, organic farmers feed their animals with the following: predominantly hay, grass, silage as well as concentrated feed, which is composed of organic grains (wheat, barley) maize and protein-rich substances (such as peas and beans) as well as different minerals. Predominantly, feed is produced on the farm , which leads to a more or less closed farm cycle. Brought in feed has to come from other organic farms. In times of feed-scarcity, and only after having been inspected, a small proportion (no more than 10%) of the feed may be bought in from conventional production. As is the case of the farm’s own feed, the brought-in feed may not contain substances of animal origin. This makes infection through BSE- infected material impossible.

Milk substitutes
Animal remains are not the only substance that is known to transmit BSE. Milk replacer, a cheap full milk substitute widely used to feed calves on conventional farms, also poses a high risk of infection. The powder contains animal fats extracted from the by-products and remains of slaughtered animals. This is how fats from BSE-infected cattle found their way into the gut of young calves, leading to an early infection.

On organic farms calves are usually fed with natural milk instead of cheap milk substitute. It is only under exceptional circumstances that calves are fed with a specially prepared organic milk substitute, which is made from organic milk powder,

pure vegetable-based fats, vitamins and minerals. The use of conventional milk substitute was, and is, prohibited in organic agriculture.

Risk of Infection on Organic Farms
For the reasons mentioned above organic agriculture resolutely avoids the most well known infection methods of BSE. Although to date there has not been a single case of BSE on an organic farm in Germany, it cannot provide a 100% protection against the disease. Why is it then that organic agriculture cannot provide a 100% protection against BSE? The following paths of infection are possible:

- Prior to conversion, most organic farms would have been conventional farms. The animals on the farms do not have to be sold during conversion. After keeping and feeding the animals according to organic standards for a certain period of time, the cattle can be marketed as organic. Due to the long incubation period of BSE, it is possible that an animal may have contracted the disease prior to conversion. Meanwhile three large German organic associations, Bioland, Demeter and Naturland, have reacted to this loophole. Since January 2001 these federations only grant their organic symbol to cattle that have been born and reared (without interruption) on an organic farm. The remaining organic associations will follow suit, if only for competitive reasons. (In the UK, the national organic authority UKROFS, set a standard that only animals born and reared on an organic farm can be sold as organic. Only the progeny of the original animals on the farm prior to conversion can be sold as organic.)

- Calves on an organic farm are usually replacements bred from the herd. Brought-in animals are usually from organic farms. To extend the genetic diversity of a herd and to avoid inbreeding it is possible, under exceptional circumstances, to acquire animals for breeding (though not for fattening!) from elsewhere. The origin and lineage of the animal has to be clearly documented. As BSE-tests have not yet been carried out on live animals, the possibility cannot be excluded that infected animals could get onto organic farms.

These examples show that organic agriculture has reacted rapidly to the threat of BSE posed by conventional agriculture. At the same time organic farms cannot exclude the possibility of a BSE-case. This is not due to the principles which organic agriculture is based on, but rather that it has not yet managed fully to decouple its production system from conventional agriculture. Organic agriculture is not an autarkic island in the sea of conventional agriculture. It is in contact and exchange with conventional agriculture due to its current small size and economic significance. The situation will only change once the farming area under organic management in Germany has extended from the current 2-3% to 20% or more in the foreseeable future.

***Conclusions**: BSE is a genuine problem inherent in conventional agriculture- the exaggerated, unnatural demands it poses on the performance of animals and its entanglement with the agro-industrial system. BSE is only indirectly a problem for organic agriculture. Although it cannot claim to give 100% protection against the disease, it poses the highest possible form of security to consumers. And for all those that have not taken organic agriculture seriously in the past: had animal husbandry followed the standards of organic agriculture exclusively, BSE (the biggest crisis in the history of European agriculture) would never have occurred.*

Notes

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Internet

http://www.agoel.de
Homepage of the working group for organic agriculture ("Arbeitsgemeinschaft Ökologischer Landbau" (AGÖL)) with links to approved certification bodies.

http://www.allesbio.de
Information on purchase opportunities for organic products throughout Germany, grouped by region and post code.

http://www.ifoam.org
Homepage of the "International Federation of Organic Agriculture Movements" (IFOAM), the worldwide umbrella organisation of organic agriculture.

http://www.organic-europe.net
Constantly up-dated information and statistics on organic agriculture in Europe. Includes country reports and numerous links.

http://www.schweisfurth.de
Homepage of the Schweisfurth Foundation. Includes information on the foundation's projects and agricultural awards and prizes.

http://www.soel.de
Homepage of the Foundation for Ecology and Farming ("Stiftung für Ökologie und Landbau" (SÖL)). Includes information on the foundation's projects, an extensive, European wide address database and numerous links on organic agriculture.