Organic agriculture worldwide
- A fast growing reality for 100 % pesticide risk reduction -

Bernward Geier[1], Dorota Metera[2]
[1] (Author) IFOAM (International Federation of Organic Agriculture Movements)
Ecocentre Imsbach, D - 66636 Tholey-Theley, Germany
Phone: +49 6853 91989 3, Fax: +49 6853 91989 9, Email: HeadOffice@ifoam.org
[2] (Presented by) Dorota Metera Consultancy
00-621 Warszawa, ul. Boya-Żeleńskiego 6 m. 34, Poland
Phone/Fax: +48 22 825 22 31, Email: dorota.metera@qdnet.pl

Pesticides - The problems are sufficiently known

Bookshelves with scientific studies are filled and the evidence cannot be argued that the introduction of chemically synthesised pesticides has caused serious environmental and social problems. To illustrate the problems: In my in home country Germany, despite all the IPM promotion and the serious attempts of scientists and farmers to really reduce pesticide spraying we still dump 30,000 tonnes of pesticides per year on our fields.

A very recent study in Germany has shown that the economic damage for our society caused by the use of synthetic pesticides is every year in the range of up to 300 million DM (and this does not include the new federal states of our republic). Even in our highly educated country with careful training of our farmers to handle pesticides, the costs for poisoning with pesticides alone amounts to almost 8 million DM per year! The costs for monitoring the pesticide level in drinking water, is the highest cost factor with 64 million DM (1).

I am not going to continue with more of these negative statistics. It's also better not to ask what numbers of scientists are kept busy and employed to study and monitor the negative impacts of pesticides. I don't think we need more monitoring of the "environmental catastrophe", but much more a shift to research for (real) environmentally sound solutions.

I do want to point out two aspects, which are often forgotten when the risk of pesticides are discussed. The problem doesn't start with residue contamination in food, or water or in the field. Much more the victims of pesticides are the farmers and farming families who are exposed too much higher doses of pesticides than the residue concerned consumers. Cancer research data of farmers using pesticides give us a frustrating idea of the danger. By the way, a great number of organic farmers converted to these methods because they literally got "sick" using pesticides.

The problem goes even beyond the farmers' fate. The production of pesticides is already not only a threat to the environment but also extremely risky. The chemical catastrophes of Seveso, Basel and Bhopal have all been factories producing pesticides. Have we forgotten the thousand of victims from Bhopal? The industrial production of pesticides is both polluting and dangerous.

The competition between integrated pest management and organic farming

I am reluctant to refer in this subtitle to competition because any comparison between IPM and organic farming is not fair. If you compare the resources that are going into IPM research with those going into organic farming, it seems that we are comparing a Ferrari with a bicycle. Organic farming certainly is neglected in research funding and IPM doesn't produce in my opinion sufficient results to for the necessary environmental changes.

But I don't want to be misunderstood. For me as an environmentalist every kilo of pesticide not produced and used contributes to an improved environment. Certainly the expansion of IPM into concepts of "integrated plant production" (IPP) has been an overdue move, but it has not shown a way out of the dilemma (2). Yet there could be value in IPP strategies if they "pave the way" and make it easier for farmers to convert towards real organic systems. But, it does not serve as a "middle of the road" strategy.

Without doubt those promoting IPM or IPP and organic farming can learn a lot from each other. I think we are allies in the field, if we agree the same goal - to reduce the environmental damage of pesticides.

But a problem we are confronted with in the food market is that IPM is trying to gain a share of the very attractive organic market by using very similar logos and references. Fortunately consumers are aware enough to distinguish between the "real thing" (certified organic products) and those foods that pretend to be "ecological". A number of "IPM Quality" marketing campaigns with a lot of investment have failed because people who know that there is organic food available don't see any reason to go for "IPM" or "green image food".

What does sustainable agriculture really mean?

Since the United Nation Conference on Environment and Development (UNCED) in Brazil in 1992 the term of sustainability has become rather meaningless. The phrase has been actually high-jacked by chemical companies showing nice advertisements with ladybugs and weeds flowering in the fields claiming that so-called modern agriculture with all its chemical/synthetic interference is sustainable. Politicians and organisations such as the Untied Nations have overused and overemphasised this phrase until it has become more or less meaningless.

The organic movement may claim the parenthood of introducing the term sustainability into agriculture. Already 20 years ago the first IFOAM International Organic Scientific Conference 1977 in Switzerland was titled "Towards Sustainable Agriculture". One of our earliest and most fascinating pioneers in the organic movement, Lady Eve Balfour from the United Kingdom, has given there the best definition of sustainability I have ever come across: "The criteria for a sustainable agriculture can be summed up in one word ***permanence***, which means adopting techniques that maintain soil fertility indefinitely; that utilise as far as possible only renewable resources; that do not grossly pollute the environment and that foster life energy (or if preferred biological activity) within the soil and throughout the cycles of all the involved food chains"(3). That is what organic farming is all about.

There is no other farming method so clearly defined and regulated by standards and rules as organic agriculture. The organic movement has four decades of experience in not only defining our way of practising agriculture but also in establishing inspection and certification schemes to give the consumer both a guarantee and confidence in the prime quality of our products and especially in the environmentally sound methods by which they are produced.

The rapidly growing importance of organic agriculture may be seen in the development of organic regulations within "Codex Alimentarius" (FAO/WHO) as well as in the fact that many nations such as the EU, Argentina, Israel, Australia and recently the USA are enacting legislation in this field. Also many Central European countries prepared legislation on the base of IFOAM Basic Standards and EU regulations as Hungary, Czech Republic, Lithuania, Croatia, Bulgaria and Estonia. On 16 March the Polish Parliament accepted the act on organic farming, the act was signed by the President on 4 April 2001 and will be implemented six months after. The first draft for the USA regulation had been heavily criticised and attracted more than 280,000 comments from around the world concluding that these agro-industry biased regulations would destroy the organic movement and its market opportunities.

There are much less problems with the regulations in other countries since they draw their inspiration from the IFOAM Basic Standards, which have been translated into 19 languages from Chinese to Swahili. Comparable clarity and definitions cannot be found for integrated farming methods, much less for so-called "sustainable" agriculture. There are lots of reasons and evidence to claim that ***"organic agriculture is sustainability put into practise"***(4).

Pest control in organic farming

Organic farmers are certainly not living up to the image created among others by the chemical industry of going back to the extensive methods of our grandfathers. You will find not only tractors but also the most modern technology on organic farms (especially for pest control) and it can be a very (bio)-intensive method. Instead of replacing nature's capacity to create balanced eco systems by synthetic and chemicals means and "quick fix" solution approaches, our organic farmers actually implement a lot of strategies that intensify the regulating power of nature in a natural way.

The first approach is to establish a system as closed as possible with cycles that allow nature to take care of its own affairs. Seven or nine year crop rotations, using the disease suppressive potential of compost, planting hedge rows, integrating forestry into agriculture, mulching and so are our strong weapons to establish healthy soils for healthy plants and animals.

Without doubt organic farmers do have problems with weeds and pests because they can't completely duplicate nature. Any farming activity interferes with natural processes and therefore organic farmers also rely on direct means to deal with pest problems (5&6).

In the area of weed control we have, meanwhile, a great diversity of mechanised technology (hoes, spring tine harrows, brushes etc.). The use of thermal energy and heat to kill weeds is also a prominent feature in organic farming. Most fascinating are the successful trials of controlling weeds in rice with ducks (Japan) or to control couch grass (Agropyron repens) in potato fields with a flock of geese. Obviously there is not much profit for the chemical industry if ducks or geese take over the job of weed control - as a matter of facts this actually means extra income for the farmers. Marketing the poultry instead of buying herbicides, thus making money while saving money, is doubtless a clever strategy.

For insect control organic farmers use colour or pheromone traps or release predators. I assume I don't have to go into details here of all the biological control methods available.

There is considerable evidence that organic farmers have fewer problems with fungus diseases since we do not push the plants (especially with synthetic fertilisers) to the "limits" which make them much more susceptible e.g. to fungus attacks. Exact list of plant protection products for organic agriculture is published in Annex B of the regulation of European Council 2092/91.

I have worked 5 years in research on non-chemical weed control and organised a number of international conferences on this subject. There is no way that I can share with you even a glimpse of the enormous knowledge and scientifically sound data gathered and the development of creative inventions for organic farming. The proceedings of the 4th IFOAM International Scientific Conference on Non-Chemical Weed Control alone compiles more than 450 pages of this wisdom (7).

The worldwide success story of organic agriculture

In order to get an impression about the fast growth of organic agriculture a look at the International Federation of Organic Agriculture Movements (IFOAM) and its membership gives some interesting indications. Founded in 1972 by 6 organisations (coming from 3 continents) the federation had "organically" developed after 15 years to an umbrella federation with about 100 member organisations in 25 countries. In the last 10 years, the almost explosive development of organic agriculture all over the world is reflected in the fact that IFOAM now unites 680 member organisations and institutions in 104 countries worldwide.

To get an understanding of how fast organic agriculture is spreading out we should look first at development on the farming and production level. It is impressive to have about 10,000 organic farmers in Germany, which is home to some of the biggest and transnational chemical companies whose political and financial power creates quite some pressure on the organic movement. In the federal state of Mecklenburg-Vorpommern close to 10 % of the total land is under organic cultivation. A number of other German federal governments have committed themselves to a 10 % organic goal. Yet, it remains a fact that nation-wide we are in the range 2,5 %. Renate Künast, the new Minister of Consumers Protection, Food Safety and Agriculture announced in her first public statement a policy target of 10% of Germany's agricultural land becoming organic in the next five years. The conventional Farmers Association, upset by the recent developments, have now been told by Germany's chancellor Schröder that they will definitively have much less influence on agricultural policy and have been strongly recommended that they understand it's time for a change.

Neighbouring countries show what booming developments are possible. In Switzerland the organic share has reached the range of 8 % with the largest Kanton (Province) Graubünden having around 30 %. The boom in Austria with more than 20,000 organic farmers led close to a 10 % share for organic farming. But Sweden and Finland have also reached the level of Switzerland and they are now competing with Austria for the lead. The latest statistics from Italy show over 40,000 farms either organic or in conversion to organic farming.

Yet there has also been impressive development in the Southern hemisphere and in the so-called third world. An organic farming project for cotton-producing farmers in Uganda started with a couple of hundred farmers and within three years has shown that 7,000 farmers moved to cultivate organic cotton. In Mexico ten thousands of campesinos (small farmers) produce organic coffee for export as well as staple food for the local market. The Mexican UCIRI co-operative alone has organised some 7,000 farmers in over 30 villages converting a whole region into organic farming (8).

The organic boom is also reflected on the food market

Fortunately, the market development and consumer demand for organic products is matched by the rapid growth of conversion to organic farming methods. The organic market in the USA is in the range of 3 billion US Dollars and is expected to double in the next two or three years. In Germany we can see how the whole baby food sector is well on its way to become more or less exclusively organic. Also the fact that more than 30 % of the daily bread in Munich is baked with certified organic ingredients is a clear indicator that organic products conquer mainstream markets.

It may be surprising that even in a country like Egypt organic produce becomes mainstream. The biodynamic SEKEM initiative, employing 1,000 people, delivers its products to 6,000 pharmacies and to 2,000 shops. Egypt, being a nation of tea drinkers, has shown its preference for organic tea by the fact that the number one selling herb tea is certified organic. Rapidly growing consumer demand is also reported from countries like Argentina, Japan, Poland and Australia.

The boom for organic products is not a luxury of the developed world as we have seen in the case of Egypt. It is encouraging that local markets for organic food are becoming increasingly established in so-called developing countries. The growing importance in this context will be close cooperation between organic agriculture and the fair trade movement.

The organic sector is probably the most rapidly growing food market in the world. Respected organic market analysts like Prof. Ulrich Hamm have forecasted annual growth rates of 20 - 30 % and in some countries even up to 50 % per year. The largest organic trader in the UK expects today's estimated 20 Billion US Dollar world organic market to go to a volume of 100 billion in the next 10 years with a major share of this growth, taking place in the USA

and Japan. In the context of these figures and forecasts Denmark's target of reaching a 20 % market share of the total food market for organic products in the next couple of years sounds quite realistic (9).

An indication of the organic future ahead is the fact that Mac Donald's (with organic milk in Sweden), Nestle, Lufthansa and Swiss Air (catering 25,000 meals/day) have entered the organic sector.

Will "Organic" feed the world?

Discussing organic agriculture in the context of food security usually provokes the question: Will the world starve to death if organic agriculture methods are used worldwide on a large scale? Very often this is not questioned but stated: organic agriculture will never be able to feed the rapidly growing world population. So who will feed the world? The easy answer is that it will not be organic farming nor gen technology or the chemical industry. It will always be the farmers and probably increasingly the smallholders and home gardeners who have this responsibility.

It remains a fact that 800 million people are starving and many are dying of hunger despite the fact of so-called green revolution and the rapidly increasing use of synthetic chemical fertilisers and pesticides over the last four decades. Chemical input in agriculture has failed to feed the world, although this promise has been (and still is) made in the chemical industry's propaganda, as well as by the former US Secretary of State Henry Kissinger. He promised at the first World Food Summit in 1987 that thanks to the green revolution nobody would be hungry anymore in ten years. As long as the real reason for hunger is poverty we should not start a debate in this context by looking at agricultural production methods. We have to find solutions in the social and political field, e.g. by reducing the criminal build up of weapons and arms and by forcing the politicians (and ourselves!) to really concentrate on improving the living and income conditions of the poor.

Conclusions

Many people may not see that organic farming will be one day be so wide spread that synthetic-chemical fertilisers and pesticides become "endangered species". I certainly do not want to have the farmers worldwide forced legally to stop using pesticides. But I do trust in the power of markets and consumer demands as well as in the convincing fact that our organic and often called "bio-logical" way of farming is so logical.

In the sixties and seventies organic farmers have been called crazy, green nuts and maybe a bit more friendly dreamers. I am still a dreamer and happy about this. Being for so long a part of the organic movement I have the constant pleasure of seeing my organic dreams become reality.

The organic movement and the environmentalists are ready for the next struggle - genetic engineering, which is accelerating the already existing problems of pesticide use and enters our environment with a new dimension of global risk. In the promotion of genetic engineering we hear the same unrealistic promises as we heard when chemistry was introduced into farming. If we continue to manipulate genetically organisms, we genetically will face problems, which we may quite likely never get under control.

Genetic engineering has to be rejected for many reasons: It is dangerous and not at all "risk tolerant", it is absolutely not necessary for food production and processing and it is not economic (which doesn't mean that the big multinationals cannot reap profits). Whoever has a basic understanding of the underlying principles of organic farming and knows about the power of nature, will agree with the firm position of the organic movement that genetic engineering has no place either on organic farms or on any other field. 76% of German consumers are against genetic engineering in food and we will continue to work with them to ensure that the future of genetic engineering will soon become history (10).

Organic farming is not at all a "do nothing way" of farming or gets its strength by being ***against*** something like pesticides or synthetic fertilisers. Organic farming has at its core an attention to healthy soils, cycle economies and it cares about social aspects. If we continue with this positive and holistic approach, the organic movement will remain to be the starting point not only for healthier farmers and food but also for a change in lifestyle and consumption patterns and thus help to develop sustainable societies with a bottom up strategy - namely field to field, farm to farm, shop to shop, village to village and region to region.

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