

Promoting: High Biodiversity, Low Carbon Polycultures, 'Monsanto - Free' Food Production - The Real Solution to Global Food Security

- 1. Food for the People?** It transpires that GM is not about creating food security, the industry is driven by Monsanto, who control 90% of GM and their sole motive is increasing their massive wealth and the method is through controlling food. They are doing this by buying up all the seed companies, they now own 50 of these, Monsanto own the patents of their seeds, they make farmers sign contracts and 'police' farms and sue farmers who they believe do not comply; presently there are a 100 court cases and bankrupts for farmers in the US. Much of GM production is highly industrialized with 70% Roundup Ready crops and subsistent sustainable farmers are being pushed off their land by this 'machine' for example in Paraguay. In that country, 70% of the farmland is owned by 2 % of the people, largely foreigners and much of this is not destined for human food, but for animal feed in Europe and for bio-fuels. Eminent scientists like Bob Watson Defra and the IASSTD committee are now advocating a more ecological approach to create future food security. Ecological polycultures have an ability to produce more food than is possible with industrialized monocultures including GM. At Primrose Farm we have a model of highly efficient carbon neutral farming on arguably the most productive, bio- diverse and resilient 1.5 acres in the UK. Food security in developing countries can only be created through the rural people being able to grow their own food in small sustainable farms. Industrialized cash crops generally do not benefit the rural people and with this scenario they have to by their own food at ever more exorbitant cost. Since global climate change is already causing failed harvests and food shortages, any solution to food security must also address the climate change issue. Industrialized GM monocultures will accelerate climate change and so cause greater future food shortages.
- 2. Are GM crops safe and can we trust Monsanto?** Monsanto has a terrible record with their toxic chemicals PCBs, Bovine Growth Hormone, and Dioxins in 245T and Agent Orange. Whole towns have been contaminated. For example the PCBs in Alabama caused numerous premature deaths and terminal illnesses. Coverups have gone on for years. Any normal citizen, who knowingly causes grievous harm to people would be severely treated. Can we trust the safe claims for Monsanto's new 'wonder chemical' Roundup, which is used on 70% of GM crops? Initially the claims were and it was labeled as biodegradable, until an experiment showed that only 2% was broken down in the soil after 28 days. One wonders if the toxicity of roundup is being hidden, since professor Belle has identified cell division malfunction attributed to Roundup. In another study, a group of scientists led by Gilles-Eric Seralini from the University of Caen in France found that human placental cells are very sensitive to Roundup at concentrations lower than the agricultural use. This, they suggest, could explain the high levels of premature births and miscarriages observed among women farmers in the US using glyphosate. In countries like Paraguay proper safety precautions are often not followed and spraying around houses and small sustainable farms causes sickness in people and kills local crops and animals like ducks. There are also concerns that GM crops have not undergone the adequate testing that would be necessary for any other human food component. There is considerable concern that eating GM food can have a negative effect on the intestinal flora through the transfer of transgenes from GM plants to intestinal microflora and enterocytes. A most carefully designed and very detailed study on this was performed by Dr Pusztai and Dr Bardoza at the Rowett research institute in Edinburgh. Following their disclosure of the very worrying results from their work, they were both immediately dismissed, their 30 person department dismantled and their work systematically undermined over a 2 year period. Perhaps this is not surprising since much of the funding for this work came from the GM organisations. Present feeding trials of the Golden Rice on malnourished and sick Chinese children with no previous animal experimentation is being condemned by senior scientists.

3. **Are GM crops good for the environment?** Industrialised agriculture has directly caused massive destruction to ecosystems, soil degradation and pollution. Also over the last 100 years 50% of the increase in carbon dioxide emissions has been attributed to the change in agricultural practices and now in the EU 30% of carbon dioxide emissions are a result of food. Thus industrialized GM farming will also accelerate global warming.
 In addition there are concerns of direct environmental effects. Research suggests that Roundup is also a danger to other lifeforms and non-target organisms. (Item 1). University of Pittsburgh's biologist Rick Relyea has found that Roundup is "extremely lethal" to amphibians. In what is considered one of the most extensive studies on the effects of pesticides on non-target organisms in a natural setting, Relyea found that Roundup caused a 70 percent decline in amphibian biodiversity and an 86 percent decline in the total mass of tadpoles.' This is just one example of how wildlife is affected. The results of the world's largest ever trial of GM crops show that two out of the three crops tested - oilseed rape and sugar beet - had a worse impact on farmland wildlife than conventional crops. New Scientist 13:34 16 October 2003 by Andy Coghlan It is also important to consider that these experiments are comparing wildlife under GM production compared with cropping systems under non-GM '*agri-industrial systems*'. Thus it is not easy to identify the GM effects amongst the damaging effect of the very strong pesticides and herbicides within both systems. We need to be designing more ecological and organic systems that are inherently more stable and less reliant on chemicals. If studies were performed comparing wildlife within GM cropping areas compared with local organic and ecological systems, then I am convinced that the results would show a much healthier wildlife system under ecological management.
 Secondly there is the environmental concern of the possible negative effects of the modified genes themselves. There are possibilities of vertical gene transfer and so there is potential for the modified gene to spread via pollen to related native species or conventional crops of the same species. This is occurring in Mexico with transgenic spread into the very rich gene pool of local varieties of maize. It has also been shown that DNA can transfer into bacteria and so horizontal gene transfer from GM plants to soil bacteria is possible. GM crops often contain genes that produce insecticides and so there is concern that this could affect natural beneficial predators and bees if the pollen contains the insecticide. A theory has been suggested that if the bees die out, the human race will follow within 4 years.
4. **Are GM crops cheaper?** In 2007, 1095 small farmers committed suicide in the Vidharbha district in India. A strong correlation has been identified between the amount of GM Bt Cotton grown and the number of suicides. In areas where more Bt cotton is grown there are higher rates of suicide. Monsanto bought up the biggest seed supplier in India and so now has a virtual monopoly and charges exorbitant prices for Bt seed. There are also crop failures with BT cotton as it does not live up to its promotional claims. Thus Bt cotton is creating a debt trap from which small farmers cannot escape. Most GM crops are dependant on high fossil fuel input, particularly for the 70 % that are Roundup resistant. Thus when oil prices increase, the production costs of these crops will escalate.
5. **Are GM crops good for subsistent farmers?** The welfare and future existence of subsistent farmers in developing countries is being challenged by spread of GM around the globe. The natural biodiversity gene pool is under threat. Mexico is renowned for its incredible number of natural maize varieties, which number over 100 in some regions. These native varieties grow well without artificial fertilizers and sprays. Thus the farmers are self-reliant and are producing their own food. However, already transgenic spread is occurring from GM crops and creating mutants within their varieties. Thus the farmers are very fearful for their futures and that they will lose their ability to save their own seed, grow crops to feed themselves and be able to survive on their small sustainable farms. This is a deep concern of small sustainable farmers in many developing countries that are being challenged by the GM regime. Primrose Organic Centre demonstrates the enormous value of high biodiversity, polyculture food production systems, in that they have greater food production potential, lower carbon footprint and have a much larger beneficial effect on the environment than is possible with industrialized monocultures.

6. **Vested interests for the spread of GM.** The whole GM industry is worth Billions£ to Monsanto, with seed sales, royalties and associated roundup use. Millions are spent on advertising, promotion and probable support for many bio-tech departments etc. Can we trust the motives of those who are forcing the spread of GM along. The actions of Mr Harrington, who farms within half a mile, undermines the confidence in the real quality of Welsh food. It also jeopardizes the integrity of the organic status of Primrose Farm, which has held the Soil Association organic standard for over 20 years and is a SA demonstration farm. Mr Harrington's enthusiasm for GM may be a reflection of his association with the company Cropgen.
7. **Control of Nature or interconnected.** Industrialised agriculture has operated a system of controlling nature, which has consumed large quantities of cheap fossil oil. In the UK, 10 units of energy are required to produce one unit of energy in the food. With the era of cheap oil coming to an end, this high fossil fuel food system cannot continue. The small sustainable farm works with nature and utilizes its beneficial resources rather than having to use energy to control it. . Primrose Organic Centre demonstrates the enormous value of high biodiversity, polyculture food production systems, in that they have greater food production potential, lower carbon footprint and have a much larger beneficial effect on the environment than is possible with industrialized monocultures.
8. **The film “ The world according to Monsanto”.** We will be showing this film in some local venues and encourage people who have concern for the future of food and the planet to come and watch it. We will invite Mr Harrington to at least one venue, so that he is able to address peoples' concerns about the content of the film.

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