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31st October 2002

Ms Hellsten
Head of the Chemicals Unit (DG Environment)
200 Rue de la Loi/Wetstraat 200
B-1049 Bruxelles/Brussel
Belgium.

Dear Ms Hellsten,

Please find enclosed a copy of my submission to the British Pesticides Safety Directorate for the thematic strategy on the sustainable use of pesticides.

I apologise that my submission is typed in English but I fear that I am not able to produce the paper in any other language. In fact my skills with my own language have deteriorated since an illegal mixture of organophosphorus pesticides poisoned me in 1992.

For background information I was employed in agriculture for most of my life and followed my father and grandfather who also worked the land. Most of that time was spent working on dairy, beef and arable farms and I reached a management position, which I held for some 13 years. I am now officially regarded as disabled "for life" following the poisoning incident.

Despite confirmation of that diagnosis by numerous doctors and specialists the illness is not officially recognised by those responsible for reporting adverse effects of pesticides at the regulatory level. Sadly I know many more cases similarly treated here in the UK. As a result any statistics provided to Europe by the UK must be regarded with suspicion.

I hope that you find my comments of interest.

Yours sincerely,

Richard A.R. Bruce.

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**Submission on the Thematic Strategy on
the Sustainable Use of Pesticides.**
from Richard A.R. Bruce. Tel 01983 760827

Hill Place Cottage
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PO41 OSS
7th October 2002

Paul Adamson
Research, Co-ordination and Environment Policy Branch
Pesticides Safety Directorate
Mallard House
Kings Pool
3 Peasholme Green
York. YO1 7PX

Dear Mr Adamson,

I write with regard to the EC Document "Towards a Thematic Strategy on the sustainable Use of Pesticides" as referred to in your correspondence dated 28th July to interested parties. It seems to me that if the EU intends "*to minimise the risks to health and the environment from the use of pesticides*" then there must be a global change in the approach to pesticide research. Currently safety levels appear to be based only on "observable effects", the assumption that low-level exposures present little risk, and that a safety factor in the calculations for maximum exposures acts to protect the population from harm. There is evidence to suggest that all these assumptions are wrong. Should they be shown to be scientifically unsound then we are in serious danger of contaminating the entire planet with potentially dangerous low-levels of toxic chemicals. A serious rethink is required. I suspect the UK members will wish to continue with the current approach and will wish to influence the rest of Europe so that those who have failed us in the past will be protected. However we only have to take a cursory look at the history of pesticide use and chemical approvals in the UK to realise that all is not as it should be if human health and the environment are to be protected. Some pesticides, formerly proclaimed as "safe", have been banned after decades of use and decades of official denial of risk. DDT is an obvious example but I understand that next year many of the pesticides long-used on our food crops are to be banned because we simply do not have the required safety data to show that the claims for safety are actually true. In the meantime all those who have reported adverse effects have faced the wrath of government agencies and the chemical companies for daring to suggest that there might be a problem with the accepted data. The prolonged activity of formulations is ignored. The very fact that these pesticides do not have sufficient supporting data demonstrates the irresponsibility of those who allowed their use initially. Those involved cannot claim that they were not aware of the risks since for many of these pesticides the dangers were known long before permission was given for their use in the food supply. The dangers of the pyrethroid-based pesticides were known in the 1800s and the deadly dangerous potential of organophosphates was known in the 1940s, and recognised by scientific committees and by Act of Parliament in the 1950s. All those warning signs were ignored in the march for profit – and those with vested interests are still ignoring them to this day.

If we are to minimise the risk to human health and the environment we must first recognise that harm can be and is being done. Currently in the UK we are experiencing official denial of the risks. The reason for that is unclear and yet it is painfully obvious that those who are exposed on an almost daily basis to dangerous pesticides have less chance of official recognition for a pesticide related cause of illness than does a person who has been exposed to a single episode of pesticide drift. This is a ridiculous state of affairs and it has become clear in recent months that there has been no risk assessment at all for those who live adjacent to fields that are regularly sprayed.

The situation is far worse for those workers whose task it is to apply pesticides and who live near the fields that are sprayed and this is compounded further if those individuals also work on a daily basis with treated livestock stock and/or treated grain. There may even be an even greater accumulation of pesticide residues in those people if they eat produce grown on those farms or drink the milk from treated animals.

Such residues tend to be diluted or broken down by the time they reach the consumer. The worker who lives and works on the farm might therefore be eating food at or above the Maximum Residue Levels for pesticides, and in addition may be exposed to levels at or above the Occupational Exposure Limits, but on top of that there may be unquantifiable exposures from chemical drift and vapour from the surrounding fields and pesticides carried into the home on clothing, boots, hair and skin. There is an enormous danger from the accumulation of a variety of pesticides for which the true dangers are completely unknown. Despite this it is almost impossible for such a worker to get official recognition for a pesticide cause of illness – not even if the illegal use of pesticides was involved. I know that this is the real situation in respect to the monitoring of the risks to health from first hand experience. I have tried every possible avenue to ensure that all the officials involved recognise the true facts without success and I am also aware of many other cases facing the same obstructive and scientifically dishonest practices.

Another proclaimed objective is “*to improve controls on the use and distribution of pesticides*” but it is not clear if the intention is to improve matters for the sake of the health of humans and the environment or to improve methods to further increase the profitability of the manufacturers and distributors. There was a recently well-publicised case in which a member of the public was poisoned by the pesticides used as seed dressings. The conclusion was that there were few, if any, controls because once the pesticide became a seed dressing it was then outside the rules. Although unapproved for use in the UK as a pesticide its use escaped all controls as soon as it became a seed dressing even though the risk to health was still present and there was evidence of actual harm caused.

Likewise we already have regulations in force supposedly intended to control all aspects of pesticide use. These include regulations for the storage, use and disposal of pesticides and their containers, the Control of Substances Hazardous to Health Regulations, Control of Pesticides Regulations, the Food and Environment Protection Act, the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations, and Employment law to name but a few.

The problem with all of these is that those given the power to ensure compliance do not properly enforce them. That is why there are so many reported incidents and why valuable resources are wasted on a process that seems content to protect the industry rather than ensure compliance with the regulations. It is because no one bothers to enforce the rules that people “take chances” and that is when innocent bystanders are harmed. Having caused that harm in the belief that the actions carried out were harmless there is then often a concerted attempt to cause further trauma to the victim and an even more determined effort to hide the true facts.

Unless this vicious circle is broken things will only get worse for human health and for the environment.

The suggestion is made that there will be an effort “*to reduce the levels of harmful active substances, in particular by replacing the most dangerous by safer (including non-chemical) alternatives.*”

This is an interesting phrase since those of us who worked with these chemicals for decades were constantly told that they were “safe” or “harmless”. Over the last 25 years or so there have been so many reports of chemical injuries that the authorities have had to admit to the dangers with increasing regulations in regard to Personal Protective Equipment and such regulations as the Local Environmental Risk Assessments for Pesticides (LERAPs) introduced in March 1999.

Under these new controls pesticides which we would have used as any others on the grounds that they presented little risk are now restricted in use under certain conditions and yet we are told that the new formulations are “safer” than those they replace. I suggest that we are all being misled.

Non-chemical alternatives have been suggested for decades but the pesticides have now upset the natural balance in nature that had been carefully nurtured by farmers over hundreds of years. It is now almost impossible to regain that balance but the claim that genetic modification of the DNA of plants can reduce the need for chemical inputs is even more suspect.

Most of the current GM crops are reliant of one or more applications of the organophosphorus herbicide glyphosate, a chemical which is under great suspicion in respect to the accuracy of its safety data.

In recent years the claims that it was “almost safe enough to drink” are looking like a dangerous con-trick as evidence is reported of its ability to damage the nervous system, cause cancer, disrupt hormones and

cause harm to the environment. Some GM crops that do not take advantage of resistance to this group of herbicides have been developed to release toxins into the environment throughout their growth period - and beyond if the roots and self-set seeds continue to live. It is inevitable that non-target species will be adversely affected and that resistant species of insect will evolve - just as resistant species of weeds will evolve with the continued and unbroken use of these herbicides, and the already proven gene transfer. This route is therefore not likely to lead to a reduction in pesticide use. On the contrary it is likely to accelerate the need for newer, more powerful chemicals.

There is another problem with potentially far reaching effects and that is the use of resistant bacteria as "marker genes" in the production of these crops. Concerns have been expressed in respect to the potential for inducing antibiotic resistance in humans and there is evidence to suggest that this is already happening. Many pesticides, including commonly used organophosphates, can mutate bacteria and so the residues in food may be actually creating these new resistant strains - and greater danger to human health. The development of resistant varieties of plants was the norm before vested interests took over the science. Now many of the seed companies are actually owned by those who benefit from sales of pesticides. It has become advantageous to sell seeds for plants that will require the application of chemicals to survive and yield a harvest. This cannot be denied since the seed producers have attempted to create crops that will not produce a harvest unless they are treated with specific chemicals conveniently supplied by the very same company.

This is not sustainable and nor is it in the best interests of food safety and security.

It is good to see that the intention is "*to encourage the use of low-input or pesticide-free crop farming*" but with current attitudes this seems to be a promised ideal with no intention for fulfillment.

Every possible obstruction has been placed in the path of those who have attempted to expose the dangers and flawed science in respect to the use of pesticides and the GM crops that rely on them.

Good people have had their livelihoods destroyed in attempts to protect the chemical industry from criticism, and those who supposedly regulate them from investigation. Half-hearted attempts have been made to assist the farmers of the UK to move towards an organic system while at the same time senior officials attempt to protect the status quo. Many are on record as claiming that there is no advantage in eating organic foods either on taste or safety grounds. Either they have never tasted genuinely organically grown produce or they are being dishonest. Some actually promote GM crops in the full knowledge that the chemicals used on them are not environmentally friendly or proven not to harm human health.

There should be no need "*to establish a transparent system for reporting and monitoring progress including the development of appropriate indicators.*" That system should be in place already.

Many of the chemicals now in use have been around for decades. The system claims to be transparent but in reality it is secretive with much of the information inaccessible to the public and officials alike.

The current organisations have many of the required reporting and monitoring systems in place but they are not used for the intended effect.

If pesticide incidents are reported the person making the report usually finds that the system works actively to hide the truth with every means possible used to prevent the official recognition of pesticide-related incidents. There is no system of long-term follow-up or independent monitoring of induced symptoms or environmental effects. Even the monitoring of residue levels in food is a "hit-or-miss" affair with relatively insignificant amounts of produce tested, testing for limited types of active ingredient, and seemingly few tests if any performed to find any dangerous breakdown products. It seems that often the testing looks only for the active ingredients of the pesticides and if the levels are below a set standard the food is considered "safe". No account is made for the differing actions of the chemicals when in formulation and worse than that, if the active ingredient has broken down to form more toxic compounds, residues may be more dangerous than if the entire amount was the active ingredient.

My point here is that no one knows. The industry admits to not knowing what happens when chemicals are mixed, which is why most of the approved mixes involve pesticides made by the same firm. There are countless permutations for possible breakdown products, depending on formulation, environmental conditions, other chemicals, mixed supplies of treated foods, the effects of heat or sunlight, the initial stability of the chemical itself and the presence of water or solvents.

It is therefore not only impossible to test every combination but it is also not possible for anyone to say that any chemical in given circumstances does not present a serious risk to human health, even at what is considered to be "low-levels of exposure". In fact it would seem that high exposure levels would actually present considerably less risk than repeated low-level exposures because those with high exposures are normally hospitalised and released after appropriate treatment only when fully recovered. Those with low-level exposures may be repeatedly exposed with deteriorating health over many years with no chance of proper treatment or diagnosis and no recognition in official statistics.

In short until the current system is cleared of all those who falsely deny such risks any monitoring and reporting system will fail in its first duty which is to protect human health and the environment.

I do wonder how there will be an accurate study of "*quantitative data on PPP use and the benefits, costs and risks associated with their use*" as mentioned on page 4 of the document. Any data in hand is likely to be from limited trial studies and will not reflect on the actual use in the field. Even sales statistics for various Plant Protection Products are unreliable. Details supplied to me many years ago on the quantities of organophosphorus chemicals added to grain in store were extremely suspect and did not correlate with the recommended rate of application. It was admitted later that the figures were simply calculations and were not based on actual figures. Nor will sales figures reflect on use since many farms will be unable to use certain products due to weather or crop changes and pesticides may well be exchanged or returned. Such figures will not equate to risk either. A chemical used on a large acreage away from dwellings presents a much lower risk than does a chemical used on a small area near where people live or work. We have experienced farcical claims from officials who suggest that if residents smell these chemicals then they are not actually smelling the active ingredient and that any symptoms they may experience are triggered by the imagination on the assumption that the chemicals are harmful. This may happen in a minority of cases but I can assure those who suggest that this is the norm that the symptoms come first and then we may discover that pesticides have been used nearby. It is nonsense to suggest that the formulation somehow breaks apart in spray drift. The government itself sent warnings to the farming community decades ago that spray drift, and even vapour lifting off the crops days after application, could damage non-target crops inside greenhouses at a distance of several miles. Warnings are given in spraying instructions that chemicals can cause such harm so it is quite wrong to suggest that "only the solvents" are recognised by those smelling the drift. More importantly perhaps the Health and Safety Executive here in the UK has confirmed cases of poisoning by spray drift. This is very strange to those of us who have experienced the HSE's denial of even the possibility of poisoning from far higher exposures and direct contact with the concentrated spray but it does confirm that drift particles are formed by the entire formulation. The motives of those highly placed officials who deny this fact should be examined.

In most studies into the cost and benefits of pesticide use the calculations seem to concentrate on the obvious reduction in weeds, pests and diseases and the resulting yield benefits. I have not yet seen a study which includes the full cost in energy terms, the cost involved in cleaning contaminated water supplies, or recovering environmental damage, or the costs in repairing the harm done to human health and maintaining those who are no longer able to find employment and require care assistance.

It is clear that some of the risks and costs are being ignored in order to give a favourable balance of cost/benefit so as to enable the current practices to continue.

I would suggest that if the full costs were included in the calculations then we would all see a totally different picture. Many costs are hidden in the research, development and manufacturing industries and I would suggest that if the industry was forced to pay proper damages to those harmed in disasters such as Bhopal and in domestic poisoning cases the industry would be hard pressed to justify the current practices on cost/benefit analysis alone.

The problem, as I see it, is that in the last 60 years, or may be less, the increasing use of pesticides has upset the balance in nature and it will now be extremely difficult for farmers to give up their addiction. The majority of farmers do not know how to farm without chemicals and for some it would be simply impossible due to the vulnerability of monoculture and the loss of the livestock industry in many areas. It will take time to recover the ecosystem that we were lucky enough to inherit from our ancestors.

If the intention is to "***further measures in the area of agricultural and non-agricultural pesticides with a view to ensuring their sustainable use***" and a decrease in "***the input of chemicals to the point that none of the basic natural processes are affected***" then we will not be able to recover that lost ground because the use of cumulative and damaging poisons is not sustainable and can never be so.

The very point of pesticide use is to affect the basic natural processes. Nature has her way and we have ours and the two are often at odds. We do not work with nature but we do fight it and pesticides are the weapons we chose to use for the task in a big way only in the last century.

Although the ideal is that "***PPP and biocides should only be used when needed and in accordance with the principle of good plant protection practices.***" in reality there is still precautionary or prophylactic use and it is interesting to note the support for GM crops which ignore this basic rule by exuding pesticides permanently whether or not the environmentally protecting thresholds are met for pest levels.

In suggesting that, "***There is a need further to reduce the risks to the environment from the use of PPP and biocides and to continue to ensure that there are no risks to health in their use.***" It would appear that this statement is itself condemning the use of GM crops, which have been specifically designed to necessitate the use of Plant Protection Products such as the OP herbicides recognised as potentially damaging to the environment. The point to recognise here is that until the GM revolution any and all crops grown by farmers and growers could be grown without any chemical input whatsoever, if that is how the farmer chose to manage his crop. With GM crops there is no opportunity for the farmer to chose the organic approach and in fact those crops are themselves endangering the future of organic agriculture and horticulture by the proven risks of unintended contamination with GM forms of DNA.

There is no possibility of "***continuing to ensure that there are no risks to health***" when it is obvious that we have not been practising this in reality to date. This would be a welcome new approach.

In "***concerning the export and import of certain dangerous chemicals***" care should be taken to include the export and import of goods which have been treated by or which contain those chemicals.

Even in 1939 International law forbade the cross border trading of foods, cosmetics and other goods containing, or contaminated with poisons, but those laws have been dangerously weakened in recent decades. Maximum residue levels have been used as permission to contaminate, and as a means to appear within the law when using controlled substances to enhance effectiveness. As a result we have a major problem with multiple residues, all of which could be at levels within the law, but which represent a risk both to health and to the environment.

Strangely when the dangers of multiple residues of organophosphorus pesticides were exposed in 1997 by the USA publication "Overexposed – organophosphate insecticides in children's food" it was regarded by officials here in the UK as a "challenging document" but they very carefully rose to that challenge and concluded by whatever means available to them that no action was required despite the obvious risks.

A farmer once told me that there were restrictions on off-farm sales of milk in New Zealand because of the high levels of DDT in the milk of freshly calved cows. He suggested that this could only improve because the chemical was leaving the farm in meat and milk produce and they knew that they were exporting the chemical around the world. That's OK then – for New Zealand.

There seems to be nothing to stop the import of foods from countries where banned chemicals are used and so all our efforts in the protection of health within our own borders appear senseless. How could it be that we could ban a chemical here because of the proven dangers to health but allow food and other goods into the country when the imported produce is contaminated with those very chemicals?

This is madness and it additionally places heavier burdens both on our own growers, and our regulators, in addition to failing to remove the risk to our health and environment.

The document states that, "***it contributes to ensuring a high level of protection of the environment and human health, in particular taking into account the specific needs for children and the environment;***"

Children are most at risk from pesticide residues. Unborn children are most at risk from those residues as taken in by their mothers and by any hormonal effects presented by the pesticides forming the residues or which are found in the environment as drift in the air or contamination of water supplies. It is known that minute quantities of chemicals can alter hormonal responses and yet the main safety criteria for pesticides rely on indicators, such as cholinesterase inhibition, which only occur at relatively high exposures.

Where is the high level of protection for the environment and human health?

While it is true that *“The use of PPPs reduces demand for land for food production 17 and enables the production of a wider variety of foods regionally, which in turn can reduce transport costs and make more land available for other uses, e.g. amenity, natural parks, protection of biodiversity”* there must be a question mark over the real need for these ever increasing yields. Political policy deliberately reduced the levels of world food reserves, encouraged the increasing levels of pesticide use, and ordered that land be set-aside from food production. Forcing farmers to take land out of food production inevitably results in the use of more chemicals in attempts to make the land that is used more profitable.

It is extremely difficult to balance the argument that yield increases will be needed to feed the ever growing population with the failure to control population growth, the encouragement of immigration and the medical advances which enable those who are not fertile to produce ever more children.

It seems, as always, that the problems caused by one area of science must be overcome by risking the environment and human health by pushing forward the barriers in other areas of science.

Nothing illustrates this better than the mutually supporting dual interests of companies who sell pesticides, which are suspected to be carcinogenic and nervous system toxins, and who also manufacture the drugs used to treat both disorders. I understand that this is known as “maximizing profits”.

Amenity areas are also often heavy users of pesticides. Golf courses for example have a reputation as being heavy users of lawn care pesticides, so much so that warnings are given to avoid ingestion of any pesticides that may have come into contact with the golf balls.

In many instances the “natural parks” are not creations simply of nature but complex combinations of nature and centuries of management by caring farmers following traditional methods.

Those methods created the biodiversity now being destroyed by monoculture, population spread and those very amenity areas used by the population for recreation.

No plough techniques designed to minimise the use of fuel have been tried before and they failed. The result is increased soil compaction, problems with persistent weeds and disease carry-over to the following crop, and a dependence on pesticides to kill vegetation and control diseases. Heavy machinery, prairie fields and lack of drainage are weakening the soil structures and the pesticides relied upon are damaging the life within what soils are left. Sometimes it seems to be forgotten that our ancestors increased yields when they changed from minimal scratching in the ground to the magical plough. It is centuries of careful field boundary and drainage choices combined with proper crop rotation under the plough that created the precious fertile soils of our forefathers.

It is not possible to ensure biodiversity and move to GM crops, which are designed to be intended as the only living forms permitted to survive in prairie-like fields. Small fields with hedges or open ditches separating them ensure easier rotation planning and a greater diversity of plant, insect and animal life but as farming falls into decline and there are fewer landowners the opposite system is developing.

Soil erosion by wind and rain will result in greater loss of precious nutrients and an ever-increasing use of Plant Protection Products, which will enter water supplies through leaching and run-off.

This will only add to the problems of sustainability.

It seems to me that all these measures would not be necessary if the products were properly tested and proven to be safe in the first instance, before marketing. It is also apparent that much of the safety testing is done only on the active ingredient and not on the product as prepared for sale but there is a dangerous assumption that the final product has the same properties. I am convinced that this is why we have problems of harm done by commercially used pesticides. If the pesticides were properly evaluated prior to sale and specific cocktails proven to present no risk of harm we would not now have these problems. If the regulators actually listened to those of us who warned them of the harmful effects we could minimise the problems we now face. However none of us believes that they will listen which is why I have not troubled myself with references to prove what they already know.

Yours sincerely,



Richard A.R. Bruce.

