

## **Why the “bystander risk assessment” does not equate to real-life exposure scenarios:- from Georgina Downs.**

ACP Open Meeting- July 10<sup>th</sup> 2002.

### **Objective.**

The objective of this personal paper, written from direct experience, is to highlight how certain sources of exposure to pesticides have not been considered within the current registration process.

### **Executive Summary.**

- Pesticides are poisonous chemicals
- Exposure to pesticides is extremely hazardous and covered by layers of regulation that are primarily aimed at protecting operators/agricultural workers
- The risk assessments carried out before pesticides are approved, take no account of the long-term effects of repeated, unprotected exposures to mixtures of pesticides and other chemicals and the high level exposures, for those who live in agricultural areas
- The danger does not only come from immediate visible spraydrift, as particles remain in the atmosphere for sometime after spraying has been applied, which are not necessarily seen
- The current standards do not allow for this type of exposure scenario
- The routes of exposure will include oral, dermal and inhalation and vulnerable groups include babies, children, pregnant women, the elderly, those with pre-existing medical problems/body burdens and chemical sensitivity
- The scientific assessment of the toxicity of pesticides is flawed and based on creating visible symptoms in laboratory animals, which is unlikely to detect the common adverse health effects experienced by people suffering pesticide related ill-health
- When people do suffer ill-health effects following pesticide exposures, they obtain little support from authorities or the legal system, whose purpose it is to protect them, because of the failure to recognise the dangers/risks at the approval level
- The current registration system/authorised use of pesticides is posing unacceptable risks to human health for those living in agricultural areas and is a breach of Articles 2, 5, 8 and Part 2, The First Protocol-Article 1 of the Human Rights Act 1998 and Articles 2, 6, 7, 17 and 37 of the Charter of the Fundamental Rights of the European Union (ref 1)

### **Brief History.**

Within conventional farming there is a heavy reliance on agricultural chemicals for mass production. Apart from the damaging effects on the environment, wildlife and the soil, the true cost of this chemical dependency has often been overlooked.

Pesticides have been in use for over 50 years and throughout their history, there has been regular documented scientific and medical evidence, in relation to their damaging effects on human health. Pesticides by their very nature, are designed to kill living organisms, therefore it is not surprising that these chemicals are highly poisonous substances.

In 1951, the Chief Government Chemist at the time, Lord Zuckerman, recommended in relation to organophosphate pesticides, that the containers should be clearly worded “Deadly Poison” and in an early study by J.H. Holmes and M.D. Gaon entitled “Observations on Acute and Multiple Exposures to Anticholinesterase Agents,” they described OP insecticides as *“being among the most potent chemicals known to man”*.

There were around 25,000 tonnes of pesticides applied to UK crops in the year 2000 (Soil Association). There are over 20,000 pesticide formulations in use today and the numbers are increasing all the time.

Therefore, while the constant, long drawn out, scientific disagreement and debate continues among scientists, concerning pesticides and health effects, people are being exposed and poisoned by these chemicals, in mixtures, from a variety of exposure sources.

### **Pesticide exposures for those living in agricultural areas.**

*“If you live next door to someone who is an arable or a fruit farmer, you are going to be subject to quite a lot of spraydrift. Those who live within the curtelage or adjoining the curtelage of farms have a higher exposure than many other people. Bystanders, neighbours are subject not only to exposure to mixtures, but sequential exposures and it has been shown that possibly a third of the arable acreage sprayed, is sprayed by people without proper training.”*

**Peter Beaumont- WIGRAMP open meeting, 28/2/02.**

My family and I have been exposed to 18 years of mixtures of pesticides, which have been sprayed throughout each year, in combinations on the surrounding farmland next to our property. (see Appendix 1 for details).

Even when pesticides are used in the approved way and with the proper application methods, these chemicals do not stay confined within the target area and drift off all over the place, even when it is not windy and the operator is abiding by all the Codes of Practice.

*Spraydrift- visible/invisible.*

The main point to highlight here is that exposure does not only come from immediate visible spraydrift (which incidentally is not a very realistic way to address the risks associated with crop-spraying).

The far wider issue here is that once pesticides have been dispersed, these chemicals persist as airborne droplets/particles, which drift around and remain in the atmosphere for sometime after spraying has been applied, but which are not necessarily seen. When people in the sprayed area then breathe in the chemical fumes, they will be inhaling these particles, where the largest particles tend to stay on the surface of the throat and nasal passages and smaller particles can be inhaled directly into the lungs. Even inhalation of dilute pesticides can result in poisoning. Once they are absorbed through the surfaces of the lungs, chemicals enter the blood stream and are distributed to the rest of the body. (2) There are obviously other forms of drift, the most important being vapour drift, where the chemicals which have been applied may volatilise in warm/hot weather and drift away from the target area.

In the “Safe Use of Poisonous Chemicals on the Farm,” by MAFF in 1975, it states that:- *“the nearer someone is to the source from which a pesticide is being dispersed, whether this is in the form of droplets, dust, granules, smoke or vapour, the greater the risk of his absorbing poison”*.

It also states that:- *“the greatest hazard arises from inhaling the fine particles produced by the spray and the vapour of the substance”* and then says *“avoid inhaling particles of any pesticide.”* (I speak for a lot of people when I say I wish that we could, but in our situation, this is impossible!)

It goes on to say:- *“Depending on the pesticides used, the danger may exist for many weeks after spraying.”*

### **Bystander Risk Assessment.**

**In ACP documentation it states:-** *“The scientific assessment of pesticides claims that no one should develop any serious illness through the use of pesticides and no one should be harmed or made ill by the presence of pesticide residues in food and drink.”*

**It also says:-** *“The current registration system aims to ensure that no authorised use of pesticides will pose unacceptable risks to human health, wildlife or the environment.”*

**It goes on to say:-** *“Inevitably however, a measure of uncertainty remains and science can never give a cast-iron guarantee of zero-risk.”*

Before pesticides are approved, various risk assessments are supposed to be carried out to provide evidence that it will not pose an unacceptable risk to human health or to wildlife.

The only existing risk assessment for those other than occupational workers who are exposed to pesticides from crop-spraying, is covered under “*Exposure to Operators, other Workers and Bystanders*”.

In the mathematical model set out for bystander estimates, it presumes that exposure is likely to be of short duration, is unlikely to be repeated and is likely to be of a lower level than that affecting spray operators, considering the greater distance of a bystander from the application equipment. It then goes on to calculate examples, that assumes exposure to spraydrift for the duration of 1 minute, for inhalation exposure.

Unfortunately, this mathematical model is nothing like the real-life exposure scenarios that people have been subjected to for decades, as people who live in agricultural areas cannot be classified as bystanders, as this would imply that they are only in the vicinity when pesticides are being applied (at the time of application). In reality, they could be contaminated by three routes of entry (oral, dermal and inhalation) for 24 hours a day from living in the sprayed area, where they would be exposed to mixtures of pesticides and other chemicals, repeatedly, often day after day, (depending on the number of fields within the area and the number of times the fields are sprayed) throughout each year. Looking at this realistically, I think it is virtually impossible to carry out a calculation for this type of exposure scenario, due to the factors already mentioned (ie. invisible droplets/particles in the air, mixtures of pesticides, almost constant exposures etc.)

(N.B. A similar situation obviously occurs for those who walk through fields everyday which have just been sprayed, (with no warning signs to inform them of such) cycling/riding horses or driving past with their windows down, all these people could also be exposed through the inhalation of the airborne droplets/particles).

In ACP documentation it states:- “*Once an exposure has been estimated it is compared with the acceptable operator exposure level (although the term AOEL makes specific reference to operators, it is usually also an appropriate comparator for other workers and bystanders) or with the NOAEL’s from relevant toxicity studies.*”

It then goes on to say:- “***Sometimes, acceptable operator exposure can only be achieved through the use of personal protective equipment such as gloves, coveralls and face-masks.***”

So therefore, if an operator’s safety can be assisted in the form of personal protective equipment, where does that leave those exposed without any protection or precautions taken?

Those who live in agricultural areas may:-

- not have received any warnings of the intended pesticide applications and therefore would not have been able to take any of the necessary precautions to protect themselves (ie. remaining inside/closing windows/bringing washing indoors etc).

- not have any knowledge of the health effects to look out for following unbeknown exposure to a formulation, (eg. suffering ill-effects following the pesticide application, but perhaps being unaware they were exposed and therefore there would be no reporting of the incident or correlation of the information, to a doctor and the HSE, of any acute or long-term chronic health problems experienced) (see ref 3)

Therefore, these people are potentially of a higher risk than that of a farm worker who could have been supplied with personal protective equipment and who hopefully has knowledge of the chemicals being used, the safety precautions to take and what symptoms and health problems to look out for following the pesticide use.

Taking all this into account, members of the public can be exposed effectively equivalent to and in many instances to a much greater degree than that of an occupational worker, and yet there is not and never has been an adequate risk assessment whatsoever for people exposed in this way. This is a major source of both acute and chronic long-term exposures to people, as there is such a vast area of arable farmland sprayed throughout this country, with people living all around these fields, who are not supplied with and should not have to be supplied with personal protective equipment on their own property. Also, according to HSE, there are no parameters set out for how close a field can be next to a property, so houses with windows wide open, can have tractors spraying right up to these open windows!

**Therefore, the current registration system/authorised use of pesticides is posing unacceptable risks to human health. This is a serious public health hazard, which requires immediate action by the Government and other depts. (ACP/HSE/DEFRA/PSD etc.) to stop the spraying of pesticides around houses/properties etc. as there is no way to prevent the poisoning of people if crop-spraying is allowed to continue in this way.**

### **A general view of the Scientific Assessment of Pesticides.**

The scientific safety of pesticides has for so long been based on a fundamentally flawed risk assessment process, which at last now seems to be recognised and accepted as such.

As up until now, pesticides have only been assessed on an individual chemical basis, which has not taken into account exposures to mixtures of pesticides and other chemicals, from all possible sources of exposure (as referred to by the WIGRAMP Committee).

Also, the “No Observed Adverse Effect Level” (NOAEL’s) established from toxicity studies in animals, tests which are usually carried out on rats. Now obviously, with some effects of pesticides, like cancer formation, death, severe organ damage and the neurotoxic effects of paralysis, tremors and muscle wastage, then these problems will be noticed significantly in animal studies. However, the more subtle alterations in neurological function are unlikely to be detected, as it is not possible for a rat to say it is experiencing symptoms like pains in the legs, tingling sensations, giddiness, headaches or generally feeling ill. These neurotoxic effects are of course common symptoms experienced by people suffering pesticide related ill-health (especially when exposure history is related to organophosphate pesticides).

Also, symptoms like burning eyes, nose and throat, which can follow acute exposures to pesticides, will also be difficult to assess.

In the book “**Gassed,**” by Rob Evans (2000) it states that:- *“Animal experiments can give little quantitative information on damage caused by chemicals.”*

Therefore, animal studies of this nature are not accurate or conclusive and yet this is the whole basis for the safety levels of chemicals.

### **Enforcement of Existing Regulations.**

#### *Operators*

Farmers who use approved pesticides in accordance with the approval, will have taken their instruction from the product label (although there may be those who do not read the label at all).

If there is nothing written under the Statutory Conditions of Use to indicate that it is hazardous to those within the surrounding area/ the need to notify neighbours/or any restrictions for use, then is it possible that the farmer may give less importance to the COSHH Risk Assessment or to his duties under the Health and Safety at Work Etc. Act (1974), (regarding risks to others in the area) if the hazards have not been identified at the highest level, that of the approval?

#### *HSE*

Following on from the previous point, if pesticides are used in accordance with the approval, does that work against the power and enforcement of the Health and Safety at Work Etc. Act (1974) and other legislation?

For example, when people do report incidents of ill-health following crop-spraying to the HSE, they are commonly told that they have to prove beyond reasonable doubt that they have been exposed to agricultural pesticides and suffered ill-health as a result, otherwise HSE cannot take enforcement action. This seems absurd, as the HSE motto is “reducing risks and protecting people,” which would equate to prevention of injury or effect, not that health has to be compromised first, then you have to prove it is associated with pesticide exposure, before anything can be done.

This is not a correct interpretation of the law.

The Health and Safety at Work Etc. Act (1974) clearly states that if someone releases dangerous or noxious emissions into the atmosphere, then it has to be “without risk to human health.” (4)

Obviously spraying poison all around the area where people live and breathe is definitely not without risk to human health and yet if the pesticides have been used in accordance with the approval, then they have been seen as “acceptably safe,” and so HSE state that if there is no evidence of illegal use, then their hands are tied.

So, is the law not being enforced, or is it not actually enforceable?

Are HSE not always investigating and therefore not confirming incidents of poisoning because there is no evidence of a breach of the approval? (3)

The HSE Inspectors response to this point is that the problems lie within the legislation and policy set out in the approval of pesticides and therefore they cannot enforce a law that is not in their legislative remit. This again illustrates how the system seems to be failing from the flaws at the approval level in not recognising the exposure scenarios for those living in agricultural areas.

N.B. As with the HSE, the ACP have a responsibility to protect the health of human beings. (5)  
Again, this is based on risk of harm and not that harm has to have already occurred.

### **Acceptable Risk.**

It was stated at the WIGRAMP open meeting (28/2/02) that society designates “acceptable risk” and that if society feels that the acceptable risk is not acceptable, then what is considered acceptable is redefined and the risk assessed accordingly.

This may be what is supposed to happen, but in my opinion, it is scientists that are deciding how millions of people are exposed to these chemicals, when they have openly admitted they do not know about the long-term toxicity of pesticides/the full implications of chemical mixtures on human health/it is impossible to test all mixtures/the lack of information and data available regarding all sources of exposure/the overall uncertainty and have not even considered certain exposure scenarios before pesticides are approved. Yet Scientists continue to recommend pesticides are allowed to be used in this way. (7)

I personally do not believe that society would see this situation as acceptable. (6)

### **Conclusions.**

- Despite the complexity, disagreement and continuous scientific debate, the nature of this issue is simple, pesticides are poison and that poison when dispersed near to houses/properties is putting human health at significant risk of injury, from both acute and chronic long-term effects from repeated exposures
- Mixtures of pesticides from multiple sources carries an increased risk of danger
- Government Advisors have recently acknowledged the lack of understanding and limited data available regarding exposures to mixtures of pesticides, from all possible sources and the effects on human health
- Vulnerable groups who are more susceptible to these toxic effects include babies, infants, children, pregnant women, the elderly, those with pre-existing health problems/body burdens and especially those already sensitised to pesticide products or suffering MCS, where just a small amount of a pesticide is enough to cause a reaction and have a direct effect on the body (even before any potentiating or synergistic interaction of the chemical mixture)
- Manufacturers and Government are failing to warn people of these dangers and the current registration system has not even considered the high level of risk involved for certain exposure scenarios before making approvals
- The Government cannot rule out the link between crop-spraying and ill-health effects, especially for those who live in agricultural areas
- Taking all this into account, no one will ever be able to say conclusively that exposure to these chemicals in this way, does not cause health problems or is not a significant risk to human health

## **Recommendations.**

I personally do not believe that pesticides should be dispersed into the air at all, let alone around houses/properties. So, ideally, if pesticides are not used, then there will be no risk of exposure to anyone. Therefore, the only way to solve this problem is through the widespread adoption of sustainable non-chemical management practices.

The recommendations for immediate action are:-

1. A total ban on crop-spraying within certain areas is the only responsible course of action to take. (This would need to be of a considerable distance, as no one knows how far the particles travel and some studies have shown pesticide particles ending up miles away from where they were originally applied). (8)  
Therefore, a small buffer zone is not going to be adequate or in any way acceptable to protect those who live in agricultural areas from the high level of risk associated with the spraying of poisonous chemicals.  
This would obviously have to be legally implemented.

*Suggestion:-* In this situation could it then be possible for farmers who have to cease spraying agricultural chemicals, on fields where people are living around the area, to be funded by Government grants (ie. funds for organic conversion from DEFRA or grants for greener farming as referred to in the Policy Commission's recent report) so they are not in any way disadvantaged and can continue farming using sustainable non-chemical management practices?

In the event that recommendation 1 is not immediate, then recommendations 2 and 3 should apply.

2. It has to be a legal obligation to notify residents as soon as possible and no later than 48 hours before any intended spraying application, instead of the existing good practice.  
This must also include full information of the chemicals that are to be used and include any which may have been applied prior to when notification began, where the residents may have had chronic exposures.
3. Considering houses undergo a whole host of structural surveys and assessments for all sorts of problems, then it has to be a legal obligation to inform anyone who may purchase/rent a property in an agricultural area of the dangers to human health from the spraying of poisonous chemicals.

## **General Recommendations.**

4. There needs to be a review of how pesticides are approved and changes in Government policy and legislation so that future pesticide regulations are based on the highest protection level available.  
Therefore, the Government and their Advisors need to recognise and admit the effects pesticides have on human health, as prevention of pesticide poisoning remains the only way to protect people from pesticide related ill-health. This should be the No.1 priority and take precedence over any economic considerations. The move away from chemical dependency can only be encouraged and authorised by Central Government.  
There needs to be more money injected into the use and further development of organic farming and other non-chemical means of pest control (as there are non-toxic alternatives for almost anything).
5. Real-life cases of pesticide poisoning and related ill-health need to be studied in order to assist in the risk assessment process for the potential toxicity in humans, based on clear exposure history/chemicals involved and health effects etc.  
There needs to be more information and training for GP's and other medical professionals regarding the diagnosis and treatment of pesticide/chemical poisoning.
6. "Until we have a more complete understanding of pesticide toxicity, the Precautionary Principle is necessary because the data on risk to human health from exposure to pesticides is incomplete."  
(BMA)  
The Precautionary Principle needs to be adopted by scientific Advisory Committees (ACP etc) (9)

7. Cigarettes have clear advertising and warning signs to inform and highlight the health damage that they can cause and it needs to be exactly the same with pesticides. This would mean clear labelling on the containers on how dangerous the chemicals are, which would then need publicity to create awareness to actually encourage people to read these labels, as well as informing others who may be exposed, to enable them to take any necessary precautions etc.

## APPENDIX 1.

### **Pesticide exposures for those living in agricultural areas.**

#### *Case History.*

Countless numbers of people are suffering this situation, here is our case as a typical example.

#### **History.**

In the early 1980's, my parents purchased a piece of land in the countryside, on which they designed and built their dream home and were looking forward to enjoying their property and land.

In 1984, about a year after we moved into the house, a local farmer bought up all the surrounding fields to be used for intensive agriculture. Back then, no one ever informed us of the dangers of the chemicals being used and that we were being repeatedly exposed to poisons!

In fact, from the age of 11, I would regularly be in the garden when crop-spraying was taking place, with the tractor passing only a few feet away from me.

Throughout the years, I suffered from ill-health, notably flu-type illnesses, sore throats (where the throat would swell to such a degree that the sides almost touched each other and would be covered in blisters) and headaches amongst other things. I would usually either dose myself up on paracetomols or on the occasions where I did visit the doctor, the health effects were misdiagnosed as either flus/viruses or infections and so therefore I ended up taking many courses of antibiotics.

Not once were we ever told about the pesticides by anyone, so for 9 years we continued to have all windows/doors open in the summer during the spraying season and being in the garden during spraying.

I also went to school surrounded by sprayed farmland for 5 years.

(On top of all that I had pesticide exposures from other sources, ie. multiple treatments for headlice when younger, we had a dog where veterinary products would have been used, we used domestic pesticide products, and ate non-organic food etc. Then there would have been probable interactions with other synthetic chemicals which were not pesticides, as we used to use a lot of other chemicals in the house and then also taking into account the status of original susceptibility before any exposures to pesticides. For example I was 11 years old and very slight, so I would have been far more susceptible to these toxic effects, as I was still in the vulnerable stages of development).

It wasn't until 1991, when I became very ill, that we started to look at what was in our surrounding environment. We started to make sure all the doors and windows were shut tight when spraying was taking place (and for quite a few days after) to try and reduce exposure as much as possible to these chemicals. Considering that the majority of spraying takes place during April and July, we are literally trapped in our own home in up to 90 degree heat, which is totally unbearable and suffocating.

From around 1993 onwards, we have had a constant battle to receive and then continue to receive 24 hours prior notification of any intended spraying application and what they would be spraying with. Unfortunately HSE are regularly pointing out that 24 hours notice is not a legal requirement. Why not? How can the law still state that the farmer is not legally obliged to let us know when he is going to spray next to our property and land with poisons?!

On the occasions where we have been informed, we have kept a diary of the spraying activities. Very rarely do they spray with just 1 chemical, it is usually 3, 4 and regularly 5 different chemicals mixed together, which can all be from different chemical families. Many of the chemicals used over the last few years have active ingredients which are listed as probable and possible human carcinogens by either the US Environmental Protection Agency (EPA), International Agency for Research on Cancer (IARC) or the European Union (EU).

Some of these include:- \*alachlor, chlorothalonil, cyanazine, cypermethrin, \*lindane and \*simazine, amongst others and the 3 marked have also been identified as endocrine disruptors by either the UK Environment Agency (EA), UK Dept. Of Environment, Transport and the Regions (DETR), German Federal Environment Agency (Ger), European Union (EU), Oslo and Paris Commission (OSPAR) or the World Wide Fund for Nature (WWF).

In 2001, they sprayed the field immediately adjacent to our house 9 times with over 20 chemical products and that is without working out the total number of active ingredients, solvents, surfactants and adjuvants which could also have been present in each formulation. (Other fields could all be growing different crops, which can result in different chemical products being used on each field. So they could spray 1 field one day with a 5-way mix, then another field with a different 5-way mix and then the third with yet another 5-way mix etc. which again, does not take into account the total number of active ingredients, solvents, surfactants and adjuvants that could also be present in the formulation). There are 25 fields all within the surrounding area, so by the time they have completed one round of spraying for each field, it starts all over again, therefore we are at risk of contamination by entry from oral, dermal and inhalation (as well as eyes) from living in the sprayed area, 24 hours a day, almost every day! Therefore I cannot even envisage the amount of chemicals we have been exposed to in this way for over 18 years!

When there has been high levels of visible spraydrift, we have watched clouds of white chemical mist come straight over the house and there seems to be very little spray actually ending up on the field itself, which is of course supposed to be the target area.

The strong chemical fumes in and around the house can sometimes still be noticeable up to almost a week later. We all suffer from both acute effects (eg. burning eyes, nose, throat, mouth, skin, headaches, flu-type illnesses etc.(as well as in my case an exacerbation of my existing health problems)) and the chronic long-term health effects from repeated exposures (which for me include, neurological damage, kidney problems, bone loss, allergies etc.)

I have no idea what other chronic health effects may yet be to come.

I try and go away now when they spray, because I want to protect my health from being poisoned further.

My father, who tries to grow organic vegetables in the garden, has no choice but to wear a respirator, goggles and protective clothing (on his own property and his own land!) when they are out spraying and for days after, because of the effect these chemicals have on his health. (He had his eyes burnt very badly whilst in the garden when crop-spraying was taking place in May 1998 and the doctor confirmed that he had suffered chemical burns in his eyes, which have since been extremely susceptible to subsequent chemical exposures).

Everyone has a right to enjoy their own property and land, but this is something my parents have not been able to do for a very long time now. (1)

If anyone was in the same position as my family and I are, with over 18 years of exposures to mixtures of pesticides, then they would also be standing up for their rights and would not expect to be poisoned in their own home and on their own property from someone else's extrahazardous activity. Pesticides are highly poisonous compounds and everyone has a right to protect their own health and that of their family's from poison!

#### **Extra information related to the continuous crop-spraying activities next to my parents property and land.**

-The Environment Agency took groundwater samples from our ditch for analysis. The results showed the presence of 4 chemicals. Two of which were banned in the early 1980's (Dieldrin and Tde(Pp') a congener of DDT) which shows how persistent they are to still be there 20 years on!

The other 2 chemicals (Cyanazine and Pirimicarb) had been used on the field within the previous few weeks before the samples were taken.

- On occasions we have found dead birds in the garden after crop-spraying.

- Burnt trees/vegetation on our land.

- Harvesting dust containing residues of mixtures of pesticides and other chemicals, sprayed on the crops throughout each year, pouring over our property and so again, windows closed etc. in hot weather. We can suffer, amongst other things, burning eyes, nose and throat following exposure to this dust.

- We have had to be very careful planning anything involving the garden especially in relation to relatives children and babies, due to the high level of risks involved.
- Expenses paid out due to the disruption caused to the family as a result of the spraying, including when I have to stay away from the area/hotel bills etc. and products we have bought to try and help the situation, ie. respirators/masks/goggles/fans/air purifiers etc.
- Continuous contamination of land and property and the cleaning up after (ie. garden furniture/clothes etc.) and also the probability of high levels of pesticide residues within the house and house dust which would have been brought in from outside. (10)
- Visitors to our house following spraying applications have been taken ill.
- Video evidence of people walking through the fields when spraying is taking place.
- HSE are not particularly helpful and are definitely not enforcing the Health and Safety at Work Etc. Act (1974) or living up to their motto of “reducing risks and protecting people.”

A few classic lines though:-

HSE Agricultural Inspector:-

*“Just because you can smell the chemicals it does not mean you are inhaling them.”*

So, if HSE inspectors (or anyone else for that matter), honestly believe that when pesticides are dispersed then the fine airborne particles hover on the boundary of a field and a garden and then decide that they shouldn't go over to somebody else's property, but instead just drift uncontrollably over the field, then this is as ridiculous a concept as it sounds.

In a later conversation this changed to:-

*“Just because you can smell the chemicals it does not mean you are inhaling the active ingredient, it may only be the solvents or the smelling agents.”*

So, this time he is accepting that the chemicals do come over to our property, but that in a 5-way mix of chemical products (with all the active ingredients, solvents, surfactants and adjuvants that could be present within the formulation), all the particles separate and this time only the solvents will come over to our property and the rest of the particles within the formulation will drift uncontrollably over the field! This theory is even more bizarre than the first one!

Both these statements are incorrect. Unfortunately, pesticide particles follow the laws of physics and not the opinion of individual HSE Inspectors!

When I asked if he would stand in our garden when spraying was taking place, right next to our boundary he said, *“Er, no, I won't do that.”* When I asked why not, he replied, *“Er, well, I won't do that, as I have to protect my health and safety!!”*

### **Questions.**

To poison someone is supposed to be a criminal offence.

1. Why then is this situation legally allowed to be happening?
2. If there is no risk assessment for those exposed to pesticides from living next to farmland, is there also no risk assessment to cover exposure from harvesting dust, (which can contain residues of mixtures of pesticides and other chemicals) either?

## **APPENDIX 2.**

### **Further comments.**

Farmers are continuously stating that there is not enough money available to enable them to change over to organic agriculture and yet there is a substantial amount of money spent on cleaning up pesticide pollution, whether it be from the land or water supply. If there was no polluting in the first place, surely it would save so much of this money.

At the WIGRAMP meeting 28/2/02, it was mentioned that the PRC spend £2 million (per year I presume) to check for pesticide residues. This money could be saved if there were no pesticides used in the first place and that money could then be injected into the development of non-chemical means of pest control.

- damage to human health from pesticides:-
- acute-£1 million
- chronic-not quantified

(from “Estimated Annual External Costs of UK Agriculture” 1996.)

The cost of removing agricultural pesticides from drinking water (alone) is £119.6 million a year.

There is a steady increase in environmental illnesses which are linked to agro-chemical pollution like cancer, allergies, asthma, eczema, ME and MCS, (which usually follows acute or repeated low-dose exposures to certain chemicals).

### **References.**

#### **1. Rights.**

Article 6 of the EU Treaty reads as follows:-

“The Union is founded on the Principles of Liberty, Democracy, Respect for Human Rights and Fundamental Freedoms and the rule of law, Principles which are common to the Member States.”

Charter of the Fundamental Rights of the European Union:-

“Enjoyment of these rights entails responsibility of duties with regard to other persons, to the human community and future generations.”

Article 2:- Right to Life

Article 6:- Right to liberty and security

Article 7:- Right for private and family life

Article 17:- Everyone has the right to respect for his private and family life, his home and his correspondence.

Article 37:- Environmental Protection

Human Rights Act 1998:-

Article 2:- Right to life - Everyone’s right to life shall be protected by Law

Article 5:- Right to liberty and security - Everyone has the right to Liberty and Security of person

Article 8:- Right to respect for private and family Life - Everyone has the right to respect for private and family life, his home and his correspondence

Part 2 the First Protocol- Article1- Protection of Property:-

Every natural or legal person is entitled to the peaceful enjoyment of his possessions

Some rulings from US courts regarding pesticide cases:- Taken from “Liability for damage caused by agricultural chemical drift,” by Michael T. Olexa, Associate Professor and Agriculture Law Specialist, University of Florida.

“abnormally dangerous activity- no one should be unreasonably inconvenienced or denied the right to enjoy their property.”

“there is no proof to suggest that it is possible to eliminate the risk of drift by the exercise of reasonable care.”

“the high degree of risk inherent in the spraying of agricultural chemicals.”

2.

Taken from Toxicity of Pesticides- Inhalation Route, Cornell University, New York.

3.

A Health and Safety Executive Inspector told me that they cannot investigate every pesticide incident, as they don't have the manpower to be able to do so.

How can there ever be a balanced representation of people exposed to and poisoned by pesticides if:-

- a) it is not being reported because people do not know that their health problems follow a pesticide exposure
- b) they may know they have been poisoned, but not know who to report it to
- c) no investigation by the authorities.

Taking all this into account, pesticide poisoning remains underreported and commonly an underdiagnosed illness.

4.

*Health and Safety at Work Etc. Act (1974):-*

“For protecting others against risks to health or safety in connection with the activities of persons at work, for controlling the keeping and use and preventing the unlawful acquisition, possession and use of dangerous substances and for controlling certain emissions into the atmosphere.”

Part 1:- “Health, Safety and Welfare in connection with work and control of dangerous substances and certain emissions into the atmosphere.”

1(b) “protecting persons other than persons at work against risk to health or safety arising out of or in connection with the activities of persons at work.”

1(d) “controlling the emission into the atmosphere of noxious or offensive substances from premises of any class prescribed for the purposes of this paragraph.”

5.

*FEPA:-* “to protect the health of human beings” (III-16) (1)(a)(i)

6.

A Quote taken from the WHO:-

*“in accord with philosophy espoused by the WHO it can hardly be disputed that to enjoy an acceptable quality of life requires more than simply an absence of terminal disease. So therefore in this respect, even adverse health effects of a non-life threatening kind that might be produced by exposure to poisonous chemicals must be considered unacceptable in that they undoubtedly have a debilitating effect that undoubtedly undermines the general well-being of those affected.”*

7.

Quotes from WIGRAMP draft report and meeting on 28/2/02:-

*“Data on exposure from sources other than food and water seem to be extremely poor or non-existent.”*

*“The precise mechanisms of interactions between constituents of mixtures, in most cases, are not known.”*

*“In the absence of information on the shape of the dose-response curve for both A and B, it is impossible to predict what the expected response would be to any combination of the 2 compounds even without any interaction.”*

*“The impact of combined exposure to multiple pesticides of either toxicologically different or similar groups is rarely addressed. Moreover, the impact of multiple sources of exposure is not often considered.”*

*“Where interactions occur, the precise mechanisms of the interactions between the constituents of a mixture will be in most cases, unknown. It is quite feasible that the nature of an interaction of one component with a second could be different from one that may occur between the first and a third component.”*

*“It is impossible in terms of hazard identification to test all possible (complex) mixtures of chemicals existing in the real world or of all possible combinations of chemicals in simple mixtures at different dose levels.”*

8.

Drift has been recorded travelling 5 miles from point of release in Britain (Martin 1982), up to 15 miles in the USA (Akesson and Yates 1964) and distances up to 50 miles have been suggested (Bunyan et al 1981).

9.

Sections taken from definitions and literature on the Precautionary Principle:-

“uncertainty should not be regarded as a valid reason for inaction.”

“absence of scientific proof should not delay or prevent proportionate measures to remove or reduce threats of serious harm.”

In the Commission of the European Communities (Brussels 2/2/00):-

Communication from the Commission on the Precautionary Principle it states:-

“in certain cases, a total ban is the sole possible response to a given risk.”

“the dimension of the Precautionary Principle goes beyond the problems associated with a short or medium term approach to risks. It also concerns the longer run and the well being of future generations.”

“to take action to avoid potentially damaging impacts of substances even where there is no scientific evidence to prove a causal link between emissions and effects.”

“Whether or not to invoke the Precautionary Principle is a decision exercised where scientific information is insufficient, inconclusive or uncertain and where there are indications that the possible effects on the environment or human, animal or plant health may be potentially dangerous and inconsistent with the chosen level of protection.”

10.

A study in Environmental Health Perspectives Vol. 110 no 5, May 02, found high levels of pesticide residues in house dust for houses in a close proximity to pesticide treated farmland.