

ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION

PESTICIDES STUDY

held in

The Old Library,
Sydney Sussex College,
University of Cambridge,
Cambridge

on

Thursday, 3rd February 2005

Committee Members

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(Chairman)

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INTERVIEW WITH:

DR. NEIL KIFT
(Pesticide Advisor)
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THE CHAIRMAN: Welcome, Neil. Neil is going to entertain us for the hour. We are looking forward to the discussion and thank you very much for coming. As you know, we are getting towards the end of taking evidence on this study of bystanders and pesticides. This study is rather unusual in that we, first time for many years, have been asked by a Minister to do a particular study and agreed broadly on the terms asked. I think we are finding quite a lot of interesting questions to ask. I do not know whether it is a good thing or a bad thing, but we are beginning to have some clear views at this stage, so this is a very good point at which to have a discussion with you. Would you like to say a few words about your own background.

DR. KIFT: My personal background is as someone who has done research into elements of crop protection both in the arable sector and horticultural sector for the past ten years or so. I have spent the last year, however, working in the capacity of the Crop Protection Advisor for the National Farmers Union. One of our key factors, which appears to be constant, is to make sure wherever we can that we are aware of appropriate evidence and we can take in and understand as much as we can. Obviously in certain areas, we may not have all the expertise and in those areas we would like to try and restrict our comment, if you see what I mean. So my background is that of someone who is doing, essentially, work on insecticides and insecticide resistance, but I have never actually myself never had to make a living from growing any food.

PROF. HOSKINS: Or spraying any crops?

DR. KIFT: No. I have done that experimentally.

THE CHAIRMAN: Where have you worked?

DR. KIFT: Brimsbarn when doing my Ph.D. and some of the development work, and HRI Wellsbourne, as it was.

THE CHAIRMAN: That is very good. We have a number of questions to ask you, and I expect you have probably seen a list of some of them, have you not?

DR. KIFT: Yes.

THE CHAIRMAN: What I have failed to do with earlier visitors is to remind them that a verbatim reporter is here and a note will be taken which will be shown to you before it is used in any way. Maybe we could just begin by talking about broad NFU position with respect to the DEFRA consultation earlier on and ask you what your impressions of that operation were? Were you pleased with the outcome and what did you think about the Minister asking us to do some more work on it?

DR. KIFT: We were quite pleased with the overall outcome to the extent that it took the issues and dealt with them separately rather than trying to lump everything into one amorphous topic, so PSD were asked to go away and think about a pilot for a prior notification scheme, and you yourselves were asked to look into the question of bystanders. The NFU welcomes this because what we do not want to end up with is a position where we thought everything was fine and new evidence arises to suggest that there might need to be tweaks and changes in things like models used to make regulatory judgments, ways in which people might practise. It is a very good opportunity, if you like, to get the current state of the art properly sorted out, for want of a better way of putting it.

THE CHAIRMAN: Let me ask you a factual question, because we will be going round the table and asking you some questions on the four major themes that we have been rather superficially grouping up our thoughts into. Your NFU paper had a lot of interesting data in it. As to the first part of the statement, which is about the frequencies and timings of the various sprayings, these are, obviously, averages. How broad are the distributions? We get told that people come past times, whereas it looks like winter wheat is about nine times and other things like rape are probably down to five.

DR. KIFT: You have hit exactly on the point, which is that it is heavily dependent on crop. I think there is one point in here which is that potatoes get between six and nine sprayings.

THE CHAIRMAN: That is in the legend rather than in the main table.

DR. KIFT: That is because they were atypical to everything else in the table, so I thought they have to be mentioned because they are a good example of the crop. They are a good example because to control blight most farmers will spray weekly with a fungicide for six to eight weeks.

THE CHAIRMAN: Weekly?

DR. KIFT: Weekly.

THE CHAIRMAN: How and when does it correspond with these figures if it is weekly for six weeks?

DR. KIFT: Because you have six applications of fungicide and one or two of herbicides.

THE CHAIRMAN: I see. So that is consistent.

DR. KIFT: It depends on crop to crop and situation to situation. People will do a lot of sprays in a short period of time, for example, on that crop.

THE CHAIRMAN: It say that the mean number of fungicides for winter wheat, which is the largest, is 2.8.

DR. KIFT: The spread of distributions around these figures is not very high. The chap we are going to see tomorrow thinks that he probably, on winter wheat, does two herbicide sprays, three fungicide sprays and, maybe, one or two insecticide sprays on his winter wheat crop every year as an average over five years. What you are looking at there is the difference between people doing two and three herbicide sprays. I have not come across anyone who does four herbicide sprays on a cereal crop, for example. There might be such people, but I have not come across them.

PROF. HOLGATE: Just to carry on with that point, when we were visiting some of the houses of affected people, they were saying that some of the farmers were prophylactically spraying.

DR. KIFT: And that will depend again on the crop. For potatoes and fungicides, people do still prophylactically spray because they simply cannot afford any kind of blight infection in the crop.

PROF. HOLGATE: So they spray before the potatoes are sown?

DR. KIFT: They would have put a pre-emergence herbicide in before the potatoes were sown. They would, probably, then have put a post emergence herbicide on as well and then, as it grows, there will come a point where they are susceptible to blight and they will be sprayed then, perhaps every week, for blight simply because the tolerances for infected tubers are so low for a customer that should they find one in a sample that is it. The whole truck load has gone.

PROF. HOLGATE: And then sulphuric acid at the end?

DR. KIFT: Some people still do. Again, without wishing to sound too much like Farmers' Weekly, it depends on the type of potato crop. For example, salad crops and seed crops much more commonly use sulphuric acid because of the way it stops the growth there and then, it forms a good skin, which typically for seed crops is vital, and it also kills of any blights caused particularly on the soil surface. For example, if you are in land that is growing seed crops and, if you like, the quality of the stuff that comes off is paramount, people are much less likely to change their practice. If you are dealing with pre-packed new potatoes for the super markets, people are not using so much acid at all.

PROF. PLANT: With all of this application of chemicals, how on earth does anybody manage to produce potatoes organically? The supermarkets are full of supposedly organically produced potatoes.

DR. KIFT: Organic potatoes -- I am rather glad you brought that topic up -- get very regular fungicide applications of copper sulphate. Of the compounds that go on against blight, that is one of the very few where the active ingredient, the copper, actually goes onto the potato. A lot of the other blight sprays actually stay on the leaf and do not contaminate the potatoes, but copper sulphate is one where it does. Organic growers ring me, who grow broccoli and things, saying that they go in every week with a BT spray for caterpillar pests ----

PROF. PLANT: A BT spray?

DR. KIFT: *Bacillus Thuringiensis*. They are crystal toxins which are produced by a species of bacteria.

THE CHAIRMAN: They are natural.

DR. KIFT: Exactly. They are a natural toxin and, as such, the Soil Association thinks that that is fine. The important thing is that that will be applied every week to stop caterpillar damage to the crop and also they will go in and spray surfactants. They are called soft soaps. Essentially, you spray washing-up liquid, or some people do, on a very big scale. They go in and do that every week for each of those treatments, plus fungicide treatments, basically, including copper. So if you are talking about vegetables and potatoes organically, you have to use these products. Last weeks Farmers' Weekly is a good example. A Soil Association conference took place and there was a write-up of it. Quite a lot of it was devoted to how we can control blight on potatoes organically. Their target is to reduce the amount of copper applied per hectare from about 8 kilos to about 6, which I think is a lot of active ingredient.

PROF. PLANT: That is very interesting.

THE CHAIRMAN: Let me ask you another question so that we can get a factual statement. We, again, have received rather contradictory evidence. We realise that there is a move towards a

professional career in farming with managers. We are told by the crop sprayers that there is an increasing number of farmers who contract in their spraying.

DR. KIFT: Yes.

THE CHAIRMAN: At various times we have been led to believe that it looks a very large amount of the farmland, but Steven's impression from going around on his travels is that it is probably not the case, at least in the farms visited recently. What are the statistics for who sprays for whom?

DR. KIFT: Firstly, that information is not nationally collected by CSL so what we have to go on are industry figures from the Agricultural Engineers' Association which is based in Peterborough. They do not collate, if you like, a national picture every year or anything as comprehensive as that, but certainly the number of sprayers has dropped by anything between 18% - 25% since 2000.

PROF. HOLGATE: When you say the number of sprayers?

DR. KIFT: That is the number of machines doing the job, not people. It is the number of things with wheels that you put pesticide in. That figure has dropped between 18% - 25% since 2000. They have made that comparison between the DEFRA survey, which has been done this last year, and one that was done during 2000. It is true to say that certainly a lot of smaller farmers are now contracting in their spraying, but larger farmers who have invested in the equipment are reluctant to do so.

THE CHAIRMAN: But even a 20% reduction in the number of sprayers probably means that 40% of the sprayers do two farms, so it is not a hugely impressive statistic. Your view would be, would it, that it is a more professional activity by contractors or one might argue that, because a contractor has to make a living out of his or her sprayer, they have to spray all the time and they are less able to choose the right weather, that is the wind and all of that, and therefore they may be less sensitive?

DR. KIFT: To answer that question, I would not like to say that contractors were more or less. I would say that contractors are a professional group of people and I do know of contractors who, on having been told by a landowner to go out and spray and the weather has not been good enough, have not done it and, as a result, they have lost the job and someone else must have come and done it. We do not know. I would say that contractors as a group, and certainly anyone who is in the National Agricultural Contractors' Association, who is on their Acid Register, for example, are very professional. Some farmers are very good, but I suspect you will find a wider spectrum of factors amongst farmers than you will amongst contractors. I could not be any more precise than that.

THE CHAIRMAN: I would like now to move over to some of the theory of the modelling which underpins much of what you. I will ask Brian first, and then Ian wants to come in.

PROF. HOSKINS: I am interested in what you think actually happens when the spraying occurs. There is the Green Code. Is the Green Code the farmers' Bible?

DR. KIFT: It is the only document they will ever use for this purpose.

PROF. HOSKINS: Do you believe that most people use it?

DR. KIFT: Perhaps not absolutely every time but, for example, with the re-writing of the Green Code, which is something that is being done at the moment, we had a series of meetings with farmers to discuss what they thought of this and that, this change and the other change, and it was surprising how many of them knew "Oh, this has definitely changed from the last one", things like that.

PROF. JOWELL: I have to announce a declaration of identity rather than interest because I am one of your members, or at least my wife is but I am her part-time shepherd. Incidentally, we grow potatoes but not on any grand scale. We did not put anything on them and they come up all right. Perhaps we are unique. We may also be unique in the fact that, although we are farm assured last year, nobody brought the Green Code to our attention last year. It has never been sent to us. I have asked a number of small farmers -- maybe we should discuss what sort of farms we are talking about -- around the Exmoor area and one or two others, but none of them had ever heard of the Green Code, except if they did contracting work in which case they had been trained, and those who are over years of age are exempt if they are doing it on their own land. So not everybody is caught by this. However, I have found a huge amount of ignorance and how difficult it is to get hold of the Green Code because it is being revised, but I am not aware in what sense it is being revised.

MR. SPEIRS: Let me add to that information by saying that at the other extreme I visited two very large farms with well-respected owners running them, but neither of them was familiar with the Green Code. I found this unbelievable. Maybe they knew it under another name. I said, "Can we now talk about the Green Code?", but I was met by a blank face. So I do not understand.

DR. KIFT: And I do not understand. Tomorrow, the manager of the farm that we are visiting has been quizzed on several occasions by his assurance inspector on "Where is your Green Code?", "Where are your maps?", "Where is this?" and "Where is that?" Are you AP or ACCS? I know it is a fine detail but it is important.

PROF. JOWELL: Part-time shepherds don't know that.

DR. KIFT: You can certainly ask more questions about that tomorrow because his assurance inspector will be available for you to see.

PROF. JOWELL: The Green Code is a very vague document. It is not really a directive. It is full of discretion. It contains comments like, "If you are spraying over a public right of way, the use of a warning notice should be considered." Those are the words used. "Particular care should be exercised when spraying near vulnerable groups". What does "particular care" mean? What is "considered". It is nothing like comparing it with the Highway Code. The Highway Code is absolutely specific. If you do not fulfil those very specific directive criteria you will not get your licence. Here there are generalities and aspirations, to a large extent. I agree that there are some parts of it that are more particular.

DR. KIFT: Well, particularly in relation to footpaths and public rights of way, some are heavily used, some are not used. In many ways, what you are looking at there is allowing people to adapt to their particular circumstance. If there is a public right of way on Exmoor that is likely to be ----

PROF. JOWELL: Unless it was done statutorily, how would you enforce it?

DR. KIFT: There are already inspections by the Health & Safety Executive for certain aspects of pesticides, like your stores, for example, and things like that. The Environment Agency does inspect farms. They might, for example, ask: "Do you have your notices that you use?", or "What are the measures that you have taken that demonstrate consideration?", or something like that. The Environment Agency certainly does not visit every farm every year. Also through assurance, people do get their assurance inspector every year, as I am sure you know.

THE CHAIRMAN: Let us go back to the modelling for a moment. We would, I think, like to revisit the Green Code and what you know about how it is being up-dated, but let us stick with the modelling for the moment.

PROF. HOSKINS: Let me keep on exposure for the moment. I think you will agree that on occasions, which may be rare, there is exposure from pesticides, probably to bystanders?

DR. KIFT: It is distinctly possible.

PROF. HOSKINS: Do you think that this is because of the fairly unpredictable conditions of someone trying to play it by the book or do you think it is by, perhaps, the ones who do not play it by the book? Do you have any feel for that?

DR. KIFT: Again, that, to a certain extent, is speculation. Every individual, farmer or operator is different. We would not expect anyone who farms, if you like, in a semi-urban area to show anything but the utmost concern. If those individuals do not, that is when problems arise and complaints are made. We would expect it to be odd situations where there has been, maybe, a temperature inversion or something like that rather than people being wilfully negligent.

PROF. HOSKINS: So you think it may be the conditions?

DR. KIFT: Yes; I would suggest that.

PROF. HOSKINS: Looking at the weather conditions, these farmers have to be quite an expert, do they not, on calculating kilometres per hour of the wind?

DR. KIFT: Most of the reasonably new machinery has got an anemometer on the cab.

PROF. HOSKINS: So if we are going to apply these figures and if there is any statutory provision, then measuring the wind has to be part of the statutory equipment?

DR. KIFT: Again, tomorrow you will be able to see that his machine has got an anemometer and also it also puts wind speed per metre and has spray records.

PROF. HOSKINS: How about some of the other things that are involved in spraying, such as tractor speed? There is an idea that tractor speed is 8 kpm, but we are told that the tractors actually go 12-14 kpm in some of the more modern machinery. Are you aware of this?

DR. KIFT: Again, you would have to ask individuals. There is no national figure for the average spraying safety speed.

PROF. HOSKINS: But there is nothing in the Code which says that you should be travelling at only 8 kpm, is there? There is no feeling that that should be the speed limit?

DR. KIFT: No; I do not think there is a speed limit in there. I do not remember from the revision one being suggested.

PROF. HOSKINS: Let me ask about the boom height. In terms of spray directives, it seems to be important that this height is as low as possible. You have this 24 metre thing here, which is meant to be half-a-metre above the ground. So when you are bouncing along in your tractor, the ground is uneven ----

DR. KIFT: Again, the machines have vertical height adjusters, which are hydraulic apparatus which measure where you are to try and keep you half-a-metre above the ground.

PROF. HOSKINS: This is expensive machinery. These are the £60,000 - £80,000 machines.

DR. KIFT: But these are the machines that people are buying for the future. These are the machines which are being bought and used by contractors.

PROF. HOSKINS: As to the application techniques and formulations, the actual spray drift depends a lot on those, the nozzles used ----

DR. KIFT: Well, yes.

PROF. HOSKINS: ---- and the actual formulation.

DR. KIFT: You would have to ask individual manufacturers about the impact of formulation.

PROF. HOSKINS: We have asked SILSOE and the answer is yes. But all of these sorts of things are not built anywhere into the Code.

DR. KIFT: The types of nozzle is something that is pointed out in the Code ----

PROF. HOSKINS: Oh, it is pointed out.

DR. KIFT: ---- and -- you will see it tomorrow -- people are very aware and very careful. Most of the machines now have a sort of things where you have got four nozzles and you spin around. Most people put the loaded one on as a matter of course.

DR. GRAHAM-BRYCE: You will gather that we are particularly interested when talking to you about agricultural practice as opposed to some of the theory. The models do assume a standard practice in various ways. They assume a standard speed, as

PROF. HOSKINS has said, and they assume a standard volume and so on.

DR. KIFT: Yes.

DR. GRAHAM-BRYCE: We are, obviously, interested in the extent to which practice differs from this in ways which could increase the risk of drift and bystander exposure. It is very difficult to formulate a question as to how much irregular activity goes on, so it would be helpful if you have any kind of feel for that. I would almost put the question in this way: are the guidelines a council of perfection which, in practice, it is very difficult to stick to because you, clearly, would

have to run your business, there are enormous constraints in terms of time, weather conditions and so on? There must be enormous pressures to get on with the job when conditions are not optimal?

DR. KIFT: Yes; and there are. Certainly those pressures are not allowed to impinge on... Again, you will be talking to Andrew Watts tomorrow about this, but he makes sure that when he is dealing with boundaries, there is no question of any imperfection, if you like, in the conditions. There may be a field surrounded by other fields and things might not be done in exactly the same way.

DR. GRAHAM-BRYCE: I think that one of the difficulties here is that, obviously, you in the NFU and we, sometimes, in our individual activities probably tend to deal with the better practice. Clearly, if you take us to see a farmer, he is not going to be one who says, "I spray up to the boundary of my neighbour", especially when they are in the garden. On the other hand, we do have a significant number of accounts, as you would know, of people who claim creditably that they have been affected in this way.

DR. KIFT: I think what is really needed in those situations is an investigation, if you like, by someone like the HSE as to exactly what has gone on. For example, at this time of year -- you will see it tomorrow -- it is particularly easy to find out who is telling the truth because if you are putting on herbicides and there is a great big brown patch...

PROF. HOSKINS: But that would be deposition on the ground and what we are talking about is airborne, so you would not necessarily see it.

DR. KIFT: You would not necessarily see it, but you would expect there to be some irregularity along the edge. You would not expect things to be looking particularly neat, for example.

DR. GRAHAM-BRYCE: Let me press the question I asked earlier about it being a council of perfection. Would you, representing the industry, feel that the requirements in terms of maintaining spray nozzles, accurate dosage and correct mixing and so on, place an unreasonable demand on farming practices.

DR. KIFT: No; because no one wants to put on any more than they have to put on. It costs money, and they have to carry the water around and things like that. Things like nozzle maintenance, the pressure at which the spray goes on, the amount that goes on, the mixtures you can and cannot apply and the rate at which it goes on in that amount of water per area are standard things. Every individual is different, but I have not come across anyone who does not fully understand and operates within those boundaries of those things.

DR. GRAHAM-BRYCE: I have to say that I am slightly surprised at that because one knows in everyday experience that people do not always obey the rules strictly. As an example, you can take things like car MOTs and so on. Your answers on some of the earlier questions referred to the latest technology, state of the art sprayers and so on. There must be a lot which are not in that condition which are hauled out of the nettles once a year.

DR. KIFT: There are some, but there are a lot fewer than there were. The industry has undergone a major change in this area in relation to pesticide application. It is, I suspect, still possible, in north Devon, for example, to find a grassland farmer who has a not terribly new sprayer with some very old nozzles and he should not be using it. We have no problem with telling him so, but whether or not he chooses to listen to us, is another issue.

DR. GRAHAM-BRYCE: Let me ask one other question and then I will stop. Does the NFU itself have concerns about what I would call "the robustness of the models" which are used?

DR. KIFT: What, in the regulatory assessments?

DR. GRAHAM-BRYCE: Yes.

DR. KIFT: As the individual who deals with this for the NFU, I am not a modeller and, in all honesty, I would not be able to give you a particularly detailed assessment. That comes back to what I was saying earlier in response to

THE CHAIRMAN that this is very much an opportunity for people who do know to be able actually to look at the models and see how good or not they might be. Are they deterministic models or stochastic models? That is about the limit of my knowledge on this particular subject.

DR. GRAHAM-BRYCE: In the paper that you provided, there is a sentence saying: "The NFU considers that the science behind the regulatory system should be scrutinised in order to provide..." Does that imply that you are unhappy with it or is that reading too much into it?

DR. KIFT: It is not a question of it being unhappy with it, but we want to make sure that it is right. People want to be able to take the instructions off a product label and know that if they follow those instructions they are doing everything that they can reasonably to minimise risk and that the assumptions behind what is written on the label are as accurate as they can be.

THE CHAIRMAN: Brian wants to come back on the modelling.

MR. SPEIRS: I have a follow-up to that last question. Part of the questioning about how reliable it is that farmers are abiding by the Green Code and so on is important. Let us take an example. We have just completed our fisheries report. If you go to the trade association, they will tell you that the fishermen are whiter than white. When you meet the fishermen, they will tell you the same. However, there is fairly widespread evidence that in many cases something like 40% of the catch is illegal and is being unloaded in another port at night into lorries. This is reported to be widespread, not only in Britain but in other countries. It is important for the NFU and its members that they do not want a pesticide tax, for example. You have a voluntary initiative and not a compulsory initiative. That is why we are asking and we need, if you like, to get a real idea as to how reliable is the behaviour out there. Most of us do not go out and see it -- it is sometimes a very lonely job -- but farmers may be doing things that only other farmers know of.

DR. KIFT: The person who would be able to give you the best idea for a national picture would be David Garthwaite of CSL, because he goes out and interviews hundreds of farmers per annum about pesticide usage. He would be the person to conduct that type of work, if you see what I mean. In terms of a feeling for how wide is the spectrum of practice, essentially, of the Green Code, the feeling that I get is that it is something that people do keep a very close eye on. It is only one aspect of an arable farming business. It is something that you are not doing every week. It is something that people do take care and attention over. They are aware that these things have a greater or lesser potential to cause damage and they have no interest in being made ill or their families. Farmers are bystanders, too.

PROF. CLIFT: But it is always going to be the case, is it not, if you take the case of potatoes, as you mentioned earlier, being sprayed every week, whether you like it or not, you are going to be stuck with having to spray under conditions when the weather is not ideal?

DR. KIFT: Yes.

PROF. CLIFT: If you are going to do it every week, you are not going to get a week when ----

DR. KIFT: No; you are not going to get six weeks of perfect weather.

PROF. CLIFT: So it is obviously going to happen that you are going to have to spray in less than ideal climate conditions.

DR. KIFT: It is likely, certainly.

PROF. CLIFT: So what can you do about that? (No answer)

PROF. JOWELL: Am I right that your profile is based on a large arable farmer? Do we know how much spraying is done? There is weed spraying for thistles, bracken....

DR. KIFT: Oh, I see.

PROF. JOWELL: These are different kinds of activities. There is different land with different contours very often.

THE CHAIRMAN: I did not think we had bracken and thistles in this part of the world. (Laughter)

DR. KIFT: On that front, we can definitely say, for example, that there is a separate survey which looks at usage for aerial spraying, which is something that happens only on moorlands to control pests.

PROF. JOWELL: So it is aerial spraying?

DR. KIFT: Yes.

PROF. JOWELL: I am not talking about aerial spraying. I am talking about knapsack spraying. I am talking of different types of spraying over wilder land and land that is not arable.

DR. KIFT: So things like ragwort control in paddocks, is that what you are meaning?

PROF. JOWELL: No; I mean thistles over a vast area of land that I know about in the West Country where this was a real problem. Most farmers spray against them and most of those areas are not arable. Then there is the bracken control right throughout a great deal of upland. This does not seem, somehow, to have been fed into the model, which affects vast areas where there is, particularly, recreation land.

DR. KIFT: Certainly the sort of controls that have to be put in place, yes, on moorland and, if you are controlling thistles and grassland, if that is the sort of thing you are thinking of, then more so. That is something that will happen annually.

PROF. JOWELL: To some extent.

DR. KIFT: If you are talking about grasslands, it means dairy farming and everything like that, most people will spray.

THE CHAIRMAN: I think we ought to move on a little bit because, although we can continue a little over dinner, I think we want to relax a little in the evening.

PROF. EKINS: Yes. I want to ask one or two practical questions. I would like to follow-up one thing you said, to the extent that it was said that there might be a farmer who did spray right up to neighbouring properties when people were in the garden, although that is against the recommendation in the Green Code. You said that they could always call in the HSE. Actually, the HSE is for violation of the law and this is not the law and the HSE would not be able to do anything at all under those circumstances. Let me ask my question on that. Are there elements in the Green Code -- they would have to be defined much more tightly if they were to become legally required -- which you feel might reasonably become legally required, and which your good members do, anyway, and which would simply be bringing the bad members into line? It would mean that in this case the guy sitting in his garden who is sprayed and where the sprayer has not taken any notice of giving prior notice or whatever, that sprayed person would actually be able to call in some authority and be able to get some kind of redress?

DR. KIFT: We are in favour of there being a transparent and reasonable process that is fair to both the farmer and the bystander and allows full disclosure of any findings in the investigation. We are aware that that is not currently the situation and the process does need to be reformed. However, the principle that a third party should be available to make an investigation and to be open with both the complainant and the person who was being complained against is a fair one.

PROF. EKINS: That is a normal, legal principle, is it not, that you have an impartial third party?

DR. KIFT: But some process centred around that would be something that we would like to see. These bystanders are consumers, too. We are not going to be able to beat every one on price. We have to beat them on quality. This is all part of the process.

PROF. EKINS: Okay. That is interesting. Let us come on to another very practical issue which we have had a lot of evidence about and which we are going to have to take a position on, which is the issue of prior notification. Again, it is in the Green Code. You do it if you can. Some of your members who have sent evidence to us think, clearly, that prior notification could be an absolutely nightmare for them. There are two kinds of information which bystanders who we have talked to are particularly keen to have. They want to know when spraying will take place. We are aware of all these weather kinds of things, and very often farmers do not decide until half-an-hour before they spray that they are definitely going to do it. At the same time, they probably decided the night before that they might do it if the weather is right at 4.30 in the morning, so perhaps they could tell people the night before. You could have an opt-in system whereby people who were concerned about these issues could be told and various people who were not concerned about them would not find that they were receiving e-mails and telephone calls which they were not wanting. The other piece of desired information is what is being sprayed. Some bystanders, especially those with health problems, know a lot about chemicals, they have read a lot about it and they think they know things which affect them and it would be useful information to them and, again, they would like to opt-in to a system of that kind, but at the moment there is not a system to opt into.

DR. KIFT: We have thought quite hard about this. I take it you have been introduced to PAMSTEL, which is an organisation that runs the prior notification scheme in New Zealand?

PROF. EKINS: We have heard about that.

DR. KIFT: We have actually met with them because we are thinking about this area really quite hard. It is about the availability of information rather than it being forced upon people, but that information being of the sort that people are concerned about. One of the things which we have discussed as an option which could be developed is something whereby people, perhaps, ring up and leave a message. If you are interested, you ring up an 0800 number, or whatever it is, you type in your post code and your neighbour comes on with his message. What that message contains would, I think, be something that would have to be looked at very carefully because the number of people who are interested in this, according to our feedback, is very small. In particular, we have a horticultural member in West Sussex, and he takes people round his farm on an annual basis, yet he says that the subject of pesticides never comes up. It may come up once every other year, or something like that. He said that people are more interested in what he is growing, whether it be sweet corn or peas. Some general context on the farm about what is going on around you and that there is a process behind why you are doing it, which in the majority of cases is based on the fact that you have gone out and done a field walk, but in the case of potatoes, for example, is that you cannot expose a risk because of the projection rates for the low levels of contamination and things like that, and perhaps a general level of information is provided and that if you wish to know that individuals would ring you on your number. It is about having the availability of the information but in response to particular requests from particular people. What people are not interested in is being deluged by people who are not actually terribly interested and just want to cause trouble. I think it is a difficult balance. We have talked to PANZTEL and possibly some sort of voluntary, leaving a message-type of scheme is something that should, perhaps, be looked into in this area.

MR. GOODACRE: Is it right that when potatoes are sprayed with sulphuric acid prior notification has to be given for spraying?

DR. KIFT: What happens is that people will go round 72 hours before -- I think it is 72 hours before but you will have to check with the NAAC for the exact details -- and they put a little card through the door wherever possible. Obviously, if there are massive dogs around, that can get a bit complicated. I have not seen one of the cards, but it informs you that that field will be sprayed with sulphuric acid again. If you get onto the NAAC, they will give you a copy of the card. To do that procedure does cost a lot of money, but they do have good figures of what it costs to do prior notification for acid sprays. So if we are looking at the cost of imposing that on an every-time basis, then there is a model from which things can be extrapolated.

DR. GRAHAM-BRYCE: But that is quite an old-fashioned way of doing it, because by doing it electronically could cost a lot less.

DR. KIFT: It would be if everybody was electronically connected and everyone checked their e-mails every time. I am sure I do not need to tell anyone sitting around this table of the perils of not checking your e-mails. It is the sort of thing that happens, but people will say, "But I don't feel that I have been notified".

PROF. EKINS: Before I come on to another topic, let me pick up on another remark which you made about causing trouble. It is my impression that some of the most ardent campaigners in this

field have been fired up because of the lack of information and because they simply feel that legitimate requests for information about when things are going to happen and what is going to happen have been denied them in the past. I am delighted that you are thinking of this information system because that is really important, but, when you think about it, it would be great if you could set it up with the participation of some of these people, so actually they can see that you are genuinely trying to address their desire for information because that could do an enormous amount to pull the sting out of the campaign because a lot of it is because that sense of impotence that we all have when we feel we need to know something very badly and no one will tell us.

DR. KIFT: "It can't be done". "What do you mean, it can't be done?" I accept that. That is exactly where we are coming from on this. We have to get the British consumer to want to buy British food and we are not going to do it on price. The Black Sea states are producing wheat at £40 a tonne. Tesco is building a separate port in Poland for importing vegetables. We cannot compete on price. We have to compete on integrity of production, and this is a key part of it. The availability of information is a key part of that integrity.

PROF. EKINS: Let me move on to another topic, which is the issue of buffer zones, which you will know has been consulted out of existence but which we, nevertheless, have to revisit. One of the things I was very struck with in the evidence we saw -- again, we are aware that the issue of buffer zones seems to cover everything from one metre to half-a-mile in terms of width -- was that one of the things which the majority of people seem happy to live with would be a buffer zone of, say, 6 metres that was counted as part of the set aside, and the set aside obligation was therefore remunerated on that kind of basis. Obviously, we have not made up our minds as to whether that would allay people's concerns, whether that would be scientifically efficacious or what the justification of it might be, but what would be your members' feelings about a buffer zone of 6 metres to 10 metres, that kind of size, not the 300 metres which some people have written to us about, and certainly not the one-and-a-half miles which other people have spoken to us about? I reiterate, the 6-10 metres.

DR. KIFT: If you are thinking in those sort of terms, I would definitely look at the impact of CAP reform and the new Entry Level Scheme, particularly. The point is that the Entry Level Scheme will allow people to put in metre margins and be paid according to whether they are managed either as grass margins with a range of grasses or wild flower mixtures, those on a prescribed list. The scheme is that you get a certain number of points and you pick different options and one of those options will be the metre marking. When you get your points per hectare, you get your payment. The Entry Level Scheme looks like it is something which is going to be very popular indeed.

PROF. EKINS: This is an entry level into what, precisely? Is it into environmentally sensitive management?

DR. KIFT: This is introducing management for positive environmental impact specifically.

PROF. EKINS: Presumably, it would be not impossible to say that if you have a field which adjoins a residential property, then part of the deal for the Entry Level Scheme is that there needs to be a metre margin and you would then add your points up accordingly?

DR. KIFT: There are two sides to that argument. A lot of farmers would say, "Yes, that is a good place to put a metre margin, but I am worried about people putting things over the fence". Again, Andrew Watts has certain stories on this particular topic, as you will no doubt hear tomorrow. It is

something that can be used as a bit of a dumping ground next to houses, so a metre margin is something which has to be used responsibly by everyone who lives around it. Whether or not that would happen in every case may mitigate the willingness to some individuals, depending on their neighbours, to take that option up. Every so often garden waste gets thrown over onto margins not on a regular basis but it does happen. Andrew, who you will see tomorrow, has a story about a local bridleway which runs on the back of some houses and the neighbours want him to shut the bridleway because it keeps being made a mess of by people, but he said he could not do that. So some people might not want the margins.

PROF. EKINS: You mean some residents might not want the margins?

DR. KIFT: Again, it is a case by case situation, but the option is going to be there under the Entry Level Scheme. Whilst I would caution against saying it is a statutory thing against every residential boundary because situations differ and opinions differ.

PROF. EKINS: But you could have an opt-out situation if all the residents along that residential boundary did not want it?

THE CHAIRMAN: Let me just scope our activities a bit. Neil, we have one or two other things to do. I am conscious that I need to let my colleagues off for an hour in-between this session and the dinner. One possibility, Steven, would be to have the discussion on the medical side, say, around the dessert course. There are questions that we will ask you. Of course, there is the problem that the dinner session will not be minuted, but I think these guys are pretty good at that. Let me just ask, are there any other questions on the legal policy side? What we will then do is to move on and come back to the medical side - the farmer as a bystander.

PROF. EKINS: I have one more question on my list which is the Voluntary Initiative. We have the Green Code, on the one hand; we have the Voluntary Initiative on the other. Lots of people have said that these two voluntary initiatives together are, kind of, the answer to this problem, whereas others have said no they are not particularly the answer to this problem and some aspects of them need to be made statutory. What is your perception of where this voluntary initiative is going, how much buy-in has it really got, will the targets that do not look as if they are going to be met be met and do they matter? Let us have a definitive statement about this.

DR. KIFT: The Voluntary Initiative is very important when thinking about the wider environmental impact of pesticide use. So if you are thinking about resource protection, such as pesticides in water, for example, that is what the Voluntary Initiative is set up for. As part of that, that focuses people's minds, in particular, on what they are doing on a day-to-day basis with a sprayer. As such, you would expect to see those changes in practice also benefiting residential bystanders.

PROF. EKINS: That is very clear.

THE CHAIRMAN: If you do not mind, we will let you off in a minute.

MR. GOODACRE: Could we see your submission to the Revision of the Green Code Consultation?

DR. KIFT: You can. I will send it to you. It is the NFU's suggested changes. By no means will all these come out in the Code. These are contributions.

MR. GOODACRE: Is there anything in those suggestions which you would like to tell us about right now?

DR. KIFT: Gosh! It was done last summer and it consists of pages.

PROF. EKINS: It is 150 pages? So this is a serious piece of work.

THE CHAIRMAN: I think we can continue later. I promised Neil that we could offer him some nice relaxing conversation and wine before we come back this other topic. Thank you. You have been incredibly helpful. (The interview concluded)